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Leadership Style Preferences Across Generational Cohorts in Silicon Valley-Type Technology Organizations: A Quantitative Study from Lahore, Pakistan

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ABSTRACT

The global technology sector has become one of the most multigenerationally diverse arenas in the modern workforce. Yet the empirical literature on how generational cohort membership shapes leadership style preferences and how such preferences relate to job satisfaction and work engagement remains sparse, particularly in emerging South Asian technology hubs. The present quantitative, cross-sectional study investigated differences in leadership style preferences among Baby Boomers, Generation X, Millennials, and Generation Z employed across four Silicon Valley-type technology organizations in Lahore, Pakistan (Tkxel, PureLogics, Systems Limited, and Bykea; N = 200). Anchored in Generational Cohort Theory, the Full Range Leadership Model, and Servant Leadership Theory, leadership style preferences were assessed using the Multifactor Leadership Questionnaire and the Servant Leadership Scale. Job satisfaction and work engagement were measured via the Job Satisfaction Survey and the Utrecht Work Engagement Scale. One-way multivariate analysis of variance, hierarchical regression, and moderated regression analyses were conducted. Results revealed statistically significant generational differences across all leadership preference dimensions. Millennials and Generation Z exhibited significantly stronger preferences for transformational and servant

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leadership relative to Baby Boomers and Generation X, who demonstrated relatively stronger transactional leadership preferences. Transformational and servant leadership preferences were the strongest predictors of both job satisfaction and work engagement with generation serving as a significant moderator of these relationships. Findings carry significant implications for leadership development, talent retention, and human resource management in Pakistan's rapidly expanding technology sector.

Keywords: Generational Cohorts, Leadership Style Preferences, Transformational Leadership, Servant Leadership, Job Satisfaction, Work Engagement, Silicon Valley Culture, Pakistan Tech Industry

Introduction

The global technology industry has undergone unprecedented transformation over the past two decades, reshaping organizational structures, work relationships, and leadership paradigms. Organizations operating within what has come to be termed 'Silicon Valley-type' cultures characterized by flat hierarchies, agile methodologies, high employee autonomy, and a relentless commitment to innovation have emerged as the dominant organizational model in the technology sector worldwide (Denning, 2016). Pakistan's technology sector has mirrored this global trajectory, with Lahore establishing itself as a significant hub for software development, fintech innovation, and digital entrepreneurship. Firms such as Systems Limited, Tkxel, PureLogics, and Bykea exemplify this new generation of organizations combining international best practices with local talent.

Within these dynamic organizational environments, a critical yet underexplored challenge concerns the management of an increasingly multigenerational workforce. Contemporary technology organizations simultaneously employ four generational cohorts: Baby Boomers (born 1946–1964), Generation X (born 1965–1980), Millennials (born 1981–1996), and Generation Z (born 1997–2012). Each cohort has been shaped by distinct historical events, technological advancements, and sociocultural experiences that fundamentally influence workplace values, expectations, and leadership preferences (Twenge, 2010). Understanding how these generational identities translate into differential leadership preferences and how such preferences affect individual outcomes represents an empirically significant and practically urgent question.

Leadership is a central construct in organizational psychology, demonstrably influencing employee motivation, commitment, satisfaction, engagement, and organizational performance (Judge & Piccolo, 2004). The Full Range Leadership Model (FRLM; Bass & Avolio, 1994) remains the most comprehensive and empirically validated framework for conceptualizing leadership behavior, spanning passive-avoidant, transactional, and transformational styles. Servant leadership (Greenleaf, 1977; Liden et al., 2008) has emerged as a complementary construct, particularly relevant for understanding preferences among younger workers who prioritize autonomy, growth, and ethical stewardship. Despite the breadth of leadership scholarship, the intersection of generational cohort theory and leadership preference research within Silicon Valley-type tech environments especially in South Asian emerging economies remains explored.

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This study addresses this gap by examining generational differences in leadership style preferences and their downstream consequences for job satisfaction and work engagement among 200 employees across four Lahore-based technology organizations. The findings are expected to yield both theoretical contributions to cross-cultural organizational psychology and actionable insights for practitioners navigating multigenerational workforces in Pakistan's expanding tech sector.

Statement of the Problem

Despite substantial research on generational differences in organizational settings and extensive investigation of leadership styles and their outcomes, the intersection of these two domains within Silicon Valley-type technology contexts remains insufficiently explored. This gap is particularly pronounced in Pakistan, where the rapid expansion of the technology sector has created urgent demand for evidence-based insights into effective multigenerational leadership practices. Organizations such as Tkxel, PureLogics, Systems Limited, and Bykea face the practical challenge of developing leadership strategies that resonate across generational boundaries. Without empirical data on how generational cohorts differ in leadership preferences and how these preferences ultimately affect job satisfaction and engagement technology organizations in Lahore are compelled to rely on intuition or generic management prescriptions that may not reflect the unique characteristics of Pakistan's technology workforce.

Research Objectives

The specific objectives of this study are: (a) to identify dominant leadership style preferences within each generational cohort in Silicon Valley-type technology organizations in Lahore, Pakistan; (b) to determine whether statistically significant differences in leadership style preferences exist across the four generational cohorts; (c) to examine the relationship between leadership style preferences and employee outcomes, specifically job satisfaction and work engagement; (d) to assess whether generation moderates the relationship between leadership style preferences and employee outcomes; and (e) to provide evidence-based recommendations for leadership development and human resource practice in Pakistan's technology industry.

Hypotheses

H1. There are statistically significant differences in leadership style preferences across generational cohorts (Baby Boomers, Generation X, Millennials, Generation Z) in Silicon Valley-type technology organizations.

H2. Millennials and Generation Z demonstrate significantly stronger preferences for transformational leadership than Baby Boomers and Generation X.

H3. Younger generational cohorts (Millennials and Generation Z) exhibit significantly higher preferences for servant leadership than older cohorts.

H4. Leadership style preferences significantly predict job satisfaction among technology employees.

H5. Leadership style preferences significantly predict work engagement among technology employees.

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H6. Generation moderates the relationship between leadership style preferences and employee outcomes (job satisfaction and work engagement).

Significance of the Study

This study makes contributions at theoretical, empirical, and practical levels. Theoretically, it extends Generational Cohort Theory and the Full Range Leadership Model to the cultural and organizational context of Pakistan's emerging technology sector, enriching cross-cultural organizational psychology literature on generational diversity and leadership. Empirically, the study generates original quantitative data from 200 technology sector employees across four organizations, addressing a notable gap in South Asian tech workforce research. Practically, the findings provide actionable insights for HR practitioners, organizational leaders, and policymakers. By identifying which leadership styles resonate with different generational cohorts, technology organizations can develop more responsive leadership programs, improve talent retention strategies, and build more engaged and satisfied multigenerational teams particularly valuable given the intensifying competition for skilled technology talent in Pakistan.

Literature Review

Generational Cohort Theory

Generational Cohort Theory, originally articulated by Karl Mannheim (1952) in his seminal essay on the sociology of knowledge, posits that individuals born within a defined historical period share a common social location that shapes their fundamental worldviews, values, and behavioral orientations. Mannheim argued that generations are defined not merely by chronological age but by shared exposure to formative historical events during their impressionable years typically adolescence and early adulthood. These collective experiences create what Mannheim termed a 'generational unit,' whose members develop similar attitudes, expectations, and responses to social institutions, including the workplace.

Building on Mannheim's foundational work, Strauss and Howe (1991) developed a cyclical generational theory identifying recurring archetypes shaped by historical cycles of upheaval and stability. This framework has been widely applied in organizational research to explain systematic differences in workplace values, work ethics, and leadership preferences. The theory suggests that Baby Boomers shaped by post-war prosperity and the counterculture movement developed fundamentally different workplace orientations than Generation X, who came of age amid economic uncertainty and corporate downsizing; or Millennials, whose formative years coincided with the digital revolution and geopolitical turbulence; or Generation Z, who grew up immersed in social media amid economic inequality and environmental anxiety.

In the organizational psychology literature, Generational Cohort Theory has been applied to explain differences in work values (Twenge et al., 2010), job satisfaction (Cennamo & Gardner, 2008), organizational commitment (Smola & Sutton, 2002), and leadership preferences (Kouzes & Posner, 2012). A significant body of empirical research has supported the premise that generational membership meaningfully predicts workplace attitudes and behavioral orientations, though scholars have noted

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the importance of distinguishing cohort effects from life-stage and period effects (Lyons & Kuron, 2014). For the purposes of the present study, Generational Cohort Theory provides the primary explanatory framework for understanding differential leadership style preferences across the four generational groups.

Full Range Leadership Model

The Full Range Leadership Model (FRLM), developed by Bass (1985) and subsequently refined by Bass and Avolio (1994), represents the most comprehensive and empirically validated framework for conceptualizing and measuring leadership behavior. The FRLM encompasses a continuum of leadership styles ranging from passive-avoidant (laissez-faire) through transactional to transformational leadership, each representing distinct patterns of leader-follower interaction.

Transformational leadership the most active and empirically effective style in the FRLM comprises four core components: Idealized Influence (II), whereby leaders serve as role models inspiring trust and admiration; Inspirational Motivation (IM), through which leaders articulate a compelling vision and communicate high expectations; Intellectual Stimulation (IS), which involves challenging followers to think creatively and question assumptions; and Individualized Consideration (IC), characterized by personalized attention to each follower's developmental needs. Transactional leadership operates through Contingent Reward (CR) the exchange of valued outcomes for performance—and Management by Exception (MBE), either active (monitoring for deviations) or passive (intervening only when problems arise). Laissez-faire leadership represents the near-total abdication of leadership responsibilities.

Extensive meta-analytic evidence supports the superior effectiveness of transformational leadership across multiple organizational outcomes, including follower satisfaction (Judge & Piccolo, 2004), organizational commitment (Meyer et al., 2002), creative performance (Shin & Zhou, 2003), and team performance (Wang et al., 2011). The FRLM's operationalization through the Multifactor Leadership Questionnaire (MLQ-5X; Bass & Avolio, 1995) provides a psychometrically robust instrument for measuring both enacted leadership behavior and employee preferences for specific leadership approaches across diverse organizational contexts.

Servant Leadership Theory

Servant Leadership Theory, originally proposed by Robert Greenleaf (1977) in his influential essay 'The Servant as Leader,' offers a fundamentally different conception of organizational leadership premised on the principle that authentic leaders begin with a natural desire to serve others, and that this servant orientation fundamentally transforms the leader-follower relationship from one of authority and control to one of stewardship and empowerment. Greenleaf's original formulation was largely philosophical; subsequent scholars have operationalized the construct in measurable terms applicable to empirical research.

Spears (1995) identified ten core characteristics of servant leaders: listening, empathy, healing, awareness, persuasion, conceptualization, foresight, stewardship, commitment to the growth of people, and building community. Liden and colleagues (2008) developed a more parsimonious, empirically grounded multidimensional

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model comprising seven dimensions: emotional healing, creating value for the community, conceptual skills, empowering, helping subordinates grow and succeed, putting subordinates first, and behaving ethically. Van Dierendonck (2011) conducted a comprehensive meta-analysis demonstrating robust positive associations between servant leadership and follower job satisfaction, organizational commitment ($\rho = .61$), and intrinsic motivation. These associations are particularly pronounced among employees who prioritize autonomy, meaningful work, and personal development characteristics commonly attributed to Millennial and Generation Z workers rendering servant leadership theory especially relevant to the present investigation.

Generational Characteristics and Workplace Expectations

Baby Boomers (1946–1964)

Baby Boomers came of age during the post-World War II economic expansion and are characterized by a strong work ethic, organizational loyalty, and respect for hierarchical authority structures (Zemke et al., 2000). Shaped by experiences of institutional stability and career-long employment relationships, Boomers tend to value seniority-based recognition, clearly defined organizational hierarchies, and directive leadership that provides structured feedback and clear expectations (Cennamo & Gardner, 2008). In technology organizations, Baby Boomers commonly occupy senior executive and advisory roles, bringing extensive institutional knowledge and a preference for formal communication channels and systematically articulated processes.

Research suggests that Baby Boomers are more comfortable with transactional leadership arrangements, where performance expectations are clearly defined and rewards are contingent on measurable achievement (Lyons & Kuron, 2014). While they value recognition and appreciation, they tend to prefer these delivered through formal organizational channels rather than the informal, peer-oriented recognition systems increasingly favored by younger generations. Their longer tenure in the workforce typically translates into higher intrinsic job satisfaction deriving from organizational recognition and managerial relationships, though satisfaction with dynamic, rapidly changing work environments may be comparatively lower (Twenge et al., 2010).

Generation X (1965–1980)

Generation X came of age during a period of significant social and economic turbulence including corporate downsizing, rising divorce rates, and early technological disruption that shaped a generation characterized by independence, self-reliance, skepticism toward institutional authority, and a strong preference for work-life balance (Coupland, 1991). Generation X employees tend to resist micromanagement, preferring leaders who establish clear objectives while extending substantial autonomy in execution—an orientation consistent with elements of both transactional contingent reward and transformational individualized consideration (Smola & Sutton, 2002).

Research indicates that Generation X values competence-based rather than seniority-based authority, and responds positively to leaders who demonstrate technical expertise and practical problem-solving ability (Lancaster & Stillman, 2002). Their

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dual comfort with some hierarchical structure and a desire for personal autonomy positions them between the more authority-respecting Baby Boomers and the more autonomy-seeking Millennials. In technology organizations, Generation X professionals frequently occupy mid-level management and senior technical positions, often bridging generational communication styles.

Millennials (1981–1996)

Millennials the most extensively researched generational cohort in the organizational literature came of age during the digital revolution, the September 11 attacks, and the 2008 global financial crisis. These formative experiences cultivated a generation characterized by technological fluency, collaborative orientation, purpose-driven work values, and strong preferences for meaningful, developmental leadership relationships (Twenge, 2010). Millennials consistently demonstrate stronger preferences for transformational leadership than older cohorts in empirical research, responding particularly strongly to leaders who provide intellectual stimulation, individualized consideration, and an inspiring vision that connects individual work to broader organizational purpose (Myers & Sadaghiani, 2010).

Empirical evidence also documents Millennials' strong alignment with servant leadership principles. Research by Liden et al. (2014) demonstrated that Millennial employees in organizational settings characterized by servant leadership reported significantly higher job satisfaction, organizational commitment, and intrinsic work motivation compared to those in transactionally oriented environments. Millennials also value flatter organizational hierarchies, frequent performance feedback, and collaborative decision-making processes all features prominently associated with Silicon Valley organizational cultures (Ng et al., 2010). In the Pakistani technology sector, Millennials constitute the largest segment of the technical workforce and thus exert disproportionate influence on organizational culture and leadership effectiveness.

Generation Z (1997–2012)

Generation Z—the most recent cohort to enter the workforce are digital natives who have never known a world without smartphones, social media, and on-demand information. Shaped by experiences of social media omnipresence, climate anxiety, economic precarity following the COVID-19 pandemic, and heightened social consciousness regarding equity and inclusion, Generation Z bring distinctive workplace values that organizational researchers are only beginning to systematically document (Dimock, 2019). Preliminary evidence suggests that Generation Z shares Millennials' preferences for transformational and servant leadership but amplifies these preferences through an even stronger emphasis on authenticity, ethical leadership, psychological safety, and clear organizational values (Francis & Hoefel, 2018).

Generation Z employees also demonstrate a distinctive preference for continuous learning and development opportunities, rapid career progression pathways, and organizational cultures that acknowledge and address mental health and wellbeing concerns (Gaidhani et al., 2019). These preferences align strongly with servant leadership's emphasis on the growth and wellbeing of followers, suggesting that

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servant leadership may be particularly effective in engaging and retaining Generation Z talent. In Pakistan's technology sector, Generation Z is increasingly represented in entry-level technical roles, introducing new expectations into organizational cultures accustomed to serving primarily Millennial preferences.

Leadership Style Preferences and Employee Outcomes

Leadership Preferences and Job Satisfaction

The relationship between leadership style and follower job satisfaction represents one of the most extensively researched domains in organizational psychology. A comprehensive meta-analysis by Judge and Piccolo (2004), demonstrated robust positive associations between transformational leadership and follower satisfaction with supervision and overall job satisfaction. Transactional contingent reward leadership showed moderate positive associations with satisfactionwhile management-by-exception passive and laissez-faire leadership exhibited negative associations with job satisfaction outcomes.

Research explicitly examining generation as a moderator of the leadership sfaction relationship is more limited but growing. Cennamo and Gardner (2008) found that Millennials demonstrated significantly stronger satisfaction responses to transformational leadership than did Generation X employees in a New Zealand sample. Similar moderation effects have been documented in emerging economy contexts, suggesting that the generational patterning of leadership satisfaction relationships may be cross-culturally robust, though specific effect magnitudes vary with cultural context (Dastmalchian et al., 2020).

Leadership Preferences and Work Engagement

Work engagement a positive, fulfilling work-related state characterized by vigor, dedication, and absorption (Schaufeli et al., 2002) has emerged as a central construct in positive organizational psychology and a critical predictor of organizational performance, retention, and customer satisfaction (Breevaart et al., 2014). The theoretical mechanisms linking transformational leadership to engagement include enhanced psychological meaningfulness, leaders' role in stimulating intrinsic motivation, and the provision of individualized developmental support that builds followers' personal resources.

Servant leadership also demonstrates strong associations with work engagement, particularly through mechanisms of psychological empowerment and trust (Schaubroeck et al., 2011). Generation Z's heightened sensitivity to authentic, ethical leadership may amplify the engagement effects of servant leadership for this cohort relative to older generations. The present study extends this literature by examining whether generational cohort moderates these well-established leadership–engagement pathways in the specific context of Pakistan's technology sector.

The Pakistani Technology Sector Context

Pakistan's information technology sector has emerged as one of the country's fastest-growing economic segments, with IT exports reaching approximately $2.6 billion in fiscal year 2022–2023 and a workforce of over 500,000 technology professionals (Pakistan Software Export Board, 2023). Lahore, historically a centre of commerce

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and education, has positioned itself as a leading technology hub characterized by a concentration of both established software firms and innovative startups. Organizations such as Systems Limited—Pakistan's largest publicly listed IT company and agile innovators like Bykea, PureLogics, and Tkxel exemplify the diversity of organizational types operating within Silicon Valley-inspired frameworks in the Pakistani context.

Research on leadership and organizational behavior in Pakistan has grown substantially in recent decades, documenting the distinctive influence of Islamic values, collectivist cultural orientations, and hierarchical social structures on leadership preferences and effectiveness (Ali & Patnaik, 2014). Scholars have noted that Pakistani organizations frequently navigate tensions between traditional authority structures embedded in the culture and the flatter, more egalitarian leadership models promoted by Silicon Valley-inspired organizational philosophies (Rehman et al., 2020). The technology sector, with its global exposure, younger workforce demographics, and performance-driven culture, may represent a context in which generational factors exert particularly salient influence on leadership preferences—making it an especially theoretically productive setting for the present investigation.

Method

Research Design

This study employed a quantitative, cross-sectional comparative design to examine generational differences in leadership style preferences and their relationships with job satisfaction and work engagement. A cross-sectional design was selected because the study aimed to capture a snapshot of existing leadership preferences and their associations with employee outcomes at a single point in time across multiple organizations and generational cohorts. This design, while precluding causal inference, is well-suited to answering descriptive and relational research questions in organizational psychology and is consistent with prevailing methodological practice in the leadership preferences literature (Podsakoff et al., 2012). Ethical approval for the study was obtained from the departmental ethics committee prior to data collection, and all participants provided informed consent.

Participants and Sampling

The target population comprised full-time employees of four Silicon Valley-type technology organizations in Lahore, Pakistan—Tkxel, PureLogics, Systems Limited, and Bykea—who had a minimum of six months' organizational tenure and could be unambiguously classified within one of the four defined generational cohorts. A non probability purposive sampling strategy was employed to ensure proportional representation across the four generational groups and four organizations. Stratification was implemented at the level of generational cohort membership, with sampling frames constructed from HR department personnel records provided by organizational liaisons.

The final analytic sample comprised 200 participants (N = 200). Preliminary power analysis using G*Power 3.1 (Faul et al., 2007), assuming a medium effect size (f = .25) with α = .05 and power = .80 for a one-way MANOVA with four groups and six outcome variables, indicated a minimum required sample of 180 participants; the

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obtained sample of 200 thus afforded adequate statistical power. Demographic characteristics of the final sample are presented in Table 2.

Table 2
Demographic Characteristics of the Sample (N = 200)

Variable	*f*	%
Generation		
Baby Boomers	8	4.0
Generation X	42	21.0
Millennials	100	50.0
Generation Z	50	25.0
Gender (Male)	134	67.0
Gender (Female)	66	33.0
Education – Bachelor's	88	44.0
Education – Master's	96	48.0
Education – PhD/Other	16	8.0
Tenure < 2 yrs	62	31.0
Tenure 2–5 yrs	80	40.0
Tenure > 5 yrs	58	29.0

Note. B = Baby Boomers; X = Generation X; M = Millennials; Z = Generation Z. Percentages may not sum to 100 due to rounding. All participants had a minimum of six months' organizational tenure.

Measures

Data were collected via an online self-report questionnaire comprising four validated psychometric instruments. Table 1 provides a summary of the instruments used.

Table 1
Summary of Measurement Instruments

Construct	Instrument	Items	Response Scale
Leadership Style Preferences	MLQ-5X	36	5-point Likert (0 = Not at all; 4 = Frequently, if not always)
Job Satisfaction	JSS	36	6-point Likert (1 = Disagree very much; 6 = Agree very much)
Work Engagement	UWES-9	9	7-point frequency (0 = Never; 6 =

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Construct	Instrument	Items	Response Scale
			Always)
Servant Leadership	SLS-28	28	5-point Likert (1 = Strongly disagree; 5 = Strongly agree)

Note. MLQ-5X = Multifactor Leadership Questionnaire; JSS = Job Satisfaction Survey; UWES-9 = Utrecht Work Engagement Scale (9-item); SLS-28 = Servant Leadership Scale.

Multifactor Leadership Questionnaire (MLQ-5X

Leadership style preferences were assessed using the Multifactor Leadership Questionnaire (MLQ-5X; Bass & Avolio, 1995), the most widely used and psychometrically validated instrument for measuring the full range of leadership behaviors and preferences across organizational contexts. The MLQ-5X comprises 36 items assessing nine leadership dimensions, organized into three overarching leadership factors: transformational leadership (20 items measuring Idealized Influence-Attributed, Idealized Influence-Behavioral, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration), transactional leadership (12 items measuring Contingent Reward and Management by Exception-Active and -Passive), and laissez-faire leadership (4 items). Items are rated on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*frequently, if not always*). Meta-analytic reliability estimates for the transformational, transactional, and laissez-faire composites consistently exceed α = .85, .80, and .75, respectively (Judge & Piccolo, 2004). In the present study, participants were instructed to rate their preferred leadership style—that is, how they would most like their ideal supervisor to behave—consistent with prior research on leadership preference measurement (Eagly & Johannesen-Schmidt, 2001).

Servant Leadership Scale (SLS-28)

Servant leadership preferences were assessed using the 28-item Servant Leadership Scale developed by Liden et al. (2008), which operationalizes servant leadership across seven empirically derived subscales: emotional healing (4 items), creating value for the community (4 items), conceptual skills (4 items), empowering (4 items), helping subordinates grow and succeed (4 items), putting subordinates first (4 items), and behaving ethically (4 items). Items are rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The SLS-28 has demonstrated strong psychometric properties across multiple organizational contexts, with subscale reliabilities typically ranging from α = .84 to α = .96 and a coherent seven-factor structure confirmed by confirmatory factor analysis (Liden et al., 2008). In the present study, participants responded to items reflecting preferences for servant leadership characteristics in their ideal supervisor.

Job Satisfaction Survey (JSS)

Job satisfaction was measured using the Job Satisfaction Survey (JSS; Spector, 1985),

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a 36-item multidimensional instrument assessing nine facets of job satisfaction: pay, promotion, supervision, fringe benefits, contingent rewards, operating conditions, coworkers, nature of work, and communication. Items are rated on a 6-point Likert scale ranging from 1 (*disagree very much*) to 6 (*agree very much*), with nine items reverse-scored. Total scores range from 36 to 216, with higher scores indicating greater overall job satisfaction. The JSS has demonstrated satisfactory reliability (total scale $\alpha = .91$) and has been widely used across international organizational psychology research, including studies in South Asian contexts (Ahmad & Khalid, 2015). Cronbach's alpha for the total JSS score in the present study was $\alpha = .88$.

Utrecht Work Engagement Scale (UWES-9)

Work engagement was assessed using the 9-item version of the Utrecht Work Engagement Scale (UWES-9; Schaufeli et al., 2006), which measures the three core dimensions of work engagement: vigor (3 items; e.g., 'At my work, I feel bursting with energy'), dedication (3 items; e.g., 'I am enthusiastic about my job'), and absorption (3 items; e.g., 'I am immersed in my work'). Items are rated on a 7-point frequency scale ranging from 0 (*never*) to 6 (*always*). The UWES-9 has demonstrated strong reliability ($\alpha \geq .85$ for the total scale) and cross-cultural validity across over 30 countries (Schaufeli & Bakker, 2010). Confirmatory factor analysis in diverse organizational samples has supported the three-factor structure, though a higher-order general engagement factor is typically supported for total score computation. Cronbach's alpha for the total UWES-9 score in the present study was $\alpha = .87$.

Procedure

The online questionnaire was hosted on a secure survey platform and was designed to be completable within 20–25 minutes. The questionnaire comprised an informed consent statement, a demographic information section (including birth year for generational cohort classification, gender, highest educational qualification, organizational tenure, and organizational affiliation), followed by the four psychometric instruments in randomized order to mitigate order effects.

To address social desirability concerns and maximize response authenticity, the survey was administered anonymously and participants were explicitly informed that there were no right or wrong answers, that their responses would be used only for research purposes, and that participation was entirely voluntary. A single reminder email was sent 10 days after initial distribution. Data collection was conducted over a six-week period. Of 312 surveys distributed, 218 were returned (69.9% response rate), of which 200 met eligibility criteria and were retained for analysis after exclusion of incomplete responses ($n = 9$) and responses from participants who could not be classified into a single generational cohort based on birth year ($n = 9$).

Data Analysis Strategy

Data were analyzed using IBM SPSS Statistics Version 27. Preliminary analyses included examination of descriptive statistics, assessment of distributional assumptions (skewness, kurtosis, Kolmogorov-Smirnov tests), inspection of bivariate correlations, and evaluation of internal consistency reliability (Cronbach's α) for each measure. One-way multivariate analysis of variance (MANOVA) was conducted to

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simultaneously examine generational differences across the four leadership style preference dimensions, followed by univariate analyses of variance (ANOVAs) and Tukey honest significant difference (HSD) post hoc tests for pairwise comparison of generational cohorts. Effect sizes are reported as partial eta-squared (η^2) for ANOVA comparisons and omega-squared (ω^2) as a less-biased estimate. Hierarchical regression analyses were used to examine the predictive relationships between leadership style preferences and employee outcomes (job satisfaction, work engagement), with demographic variables (age, gender, education, tenure) entered in Block 1 as covariates, and leadership preference composites entered in Block 2. Moderated multiple regression analyses were conducted to evaluate the moderating role of generation on the leadership preference–outcome relationships, with generation dummy-coded (Millennials as reference category) consistent with the study's primary theoretical focus on younger cohorts. Interaction terms were computed using mean-centered predictors to reduce multicollinearity. All tests were two-tailed with $\alpha = .05$.

Results

Preliminary Analyses

Descriptive statistics, internal consistency estimates, and distributional indices for all study variables are reported in Table 3. Cronbach's alpha coefficients ranged from $\alpha = .78$ to $\alpha = .93$, all meeting the conventional threshold of .70 for acceptable reliability (Nunnally, 1978). Skewness and kurtosis values for all variables fell within the ranges of ±2.0, indicating approximate univariate normality sufficient to proceed with parametric analyses (George & Mallery, 2010). Box's M test for homogeneity of variance-covariance matrices yielded a non-significant resul. satisfying the MANOVA assumption of homogeneous covariance matrices. Bivariate Pearson correlations indicated significant positive associations between transformational leadership preference and job satisfaction. and work engagement. and between servant leadership preference and both outcomes Transactional leadership showed modest positive associations with job satisfaction but a non-significant association with work engagement Laissez-faire leadership showed significant negative associations with both outcomes. Variance inflation factors in regression models ranged from 1.14 to 2.31, all well below the threshold of 10, indicating the absence of problematic multicollinearity.

Table 3

Descriptive Statistics, Reliability Estimates, and Distributional Indices for Study Variable

Variable	*M*	*SD*	*α*	Min	Max	Skew	Kurtosis
Transformational LS	3.21	0.54	0.91	1.00	4.00	−0.41	0.12
Transactional LS	2.87	0.62	0.85	1.00	4.00	0.18	−0.22
Servant LS	3.15	0.58	0.93	1.00	4.00	−0.35	0.08

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Variable	*M*	*SD*	*α*	Min	Max	Skew	Kurtosis
Laissez-faire LS	1.43	0.71	0.78	0.00	4.00	0.81	0.65
Job Satisfaction	3.89	0.67	0.88	1.17	6.00	−0.27	0.14
Work Engagement	4.12	0.79	0.87	0.78	6.00	−0.31	0.09

Note. N = 200. M = mean; SD = standard deviation; α = Cronbach's alpha. LS = Leadership Style preference composite. All ratings are on a 0–4 scale (MLQ-5X) for leadership composites, 1–6 for job satisfaction (JSS), and 0–6 for work engagement (UWES-9). Skew = skewness; all values fall within acceptable ±2.0 range.

Generational Differences in Leadership Style Preferences (H1–H3)

A one-way MANOVA was conducted to examine the effect of generational cohort on the four leadership style preference dimensions simultaneously. The overall multivariate effect was statistically significant, Wilks' $\Lambda = .54$, $F(12, 540.62) = 11.84$, $p < .001$, partial $\eta^2 = .19$, indicating that generational cohort membership significantly accounted for approximately 19% of variance in the combined leadership preference outcome. Follow-up univariate ANOVAs and Tukey HSD post hoc comparisons were conducted for each leadership dimension; results are presented in Table 4.

Table 4
One-Way ANOVA Results for Generational Differences in Leadership Style Preferences and Employee Outcomes

Variable	**df1**	**df2**	**F**	**p**	**η²**	**ω²**	**Post Hoc (Tukey)**
Transformational LS	3	196	18.74	< .001	0.22	0.21	M, Z > X, B
Transactional LS	3	196	7.31	< .001	0.10	0.09	B, X > M, Z
Servant LS	3	196	21.56	< .001	0.25	0.24	M, Z > X > B
Laissez-faire LS	3	196	3.18	.025	0.05	0.04	ns
Job Satisfaction	3	196	9.84	< .001	0.13	0.12	M, Z > B
Work Engagement	3	196	12.47	< .001	0.16	0.15	Z > M > X > B

Note. N = 200. df1 = between-groups degrees of freedom; df2 = within-groups degrees of freedom. η^2 = partial eta-squared; ω^2 = omega-squared. Post hoc

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comparisons are based on Tukey HSD tests. B = Baby Boomers; X = Generation X; M = Millennials; Z = Generation Z. '>' indicates significantly higher preference at $p < .05$. ns = no significant pairwise differences.

For transformational leadership preference, a significant between-groups effect was obtained, $F(3, 196) = 18.74$, $p < .001$, $\eta^2 = .22$. Tukey HSD post hoc tests revealed that Millennials ($M = 3.45$, $SD = 0.49$) and Generation Z ($M = 3.61$, $SD = 0.44$) both expressed significantly stronger preferences for transformational leadership than Baby Boomers ($M = 2.62$, $SD = 0.57$) and Generation X ($M = 2.91$, $SD = 0.53$), fully supporting H2. Millennials and Generation Z did not differ significantly from each other, nor did Baby Boomers and Generation X.

For servant leadership preference, the generational effect was the largest observed across all leadership dimensions, $F(3, 196) = 21.56$, $p < .001$, $\eta^2 = .25$. Post hoc tests indicated a hierarchical pattern, with Generation Z ($M = 3.58$, $SD = 0.46$) and Millennials ($M = 3.41$, $SD = 0.51$) demonstrating significantly higher servant leadership preferences than Generation X ($M = 2.85$, $SD = 0.58$), who in turn expressed significantly higher preferences than Baby Boomers ($M = 2.39$, $SD = 0.62$). This fully linear ordering across cohorts provides strong support for H3.

For transactional leadership preference, the generational effect was significant but of smaller magnitude, $F(3, 196) = 7.31$, $p < .001$, $\eta^2 = .10$. Post hoc tests indicated that Baby Boomers and Generation X expressed significantly higher transactional leadership preferences than Millennials and Generation Z, consistent with theoretical expectations. The laissez-faire leadership preference effect reached statistical significance ($F[3, 196] = 3.18$, $p = .025$, $\eta^2 = .05$) but no pairwise post hoc comparisons were significant following correction, suggesting that the overall cohort effect on laissez-faire preferences was modest. Collectively, these findings provide strong support for H1.

Leadership Style Preferences as Predictors of Job Satisfaction and Work Engagement (H4–H5)

Hierarchical regression analyses were conducted to examine the predictive validity of leadership style preferences for job satisfaction and work engagement, with demographic covariates controlled in Block 1. Results are presented in Table 5. After controlling for demographic variables (Block 1: $R^2 = .06$ for job satisfaction; $R^2 = .05$ for work engagement), the addition of leadership style preference composites in Block 2 produced significant incremental variance explained: $\Delta R^2 = .41$, $F(3, 193) = 45.32$, $p < .001$ for job satisfaction; $\Delta R^2 = .38$, $F(3, 193) = 39.84$, $p < .001$ for work engagement.

Table 5
Hierarchical Regression Results for Leadership Style Preferences Predicting Job Satisfaction and Work Engagement

Predictor	B	SE	β	t	p	95% CI
Outcome: Job Satisfaction ($R^2 = .41$, $F(3,196) = 45.32$, $p < .001$)						
Transformational LS	0.52	0.07	.48	7.43	< .001	[0.38, 0.66]

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Predictor	B	SE	β	t	p	95% CI
Transactional LS	0.18	0.08	.14	2.25	.026	[0.02, 0.34]
Servant LS	0.31	0.09	.24	3.44	.001	[0.13, 0.49]
Outcome: Work Engagement (R^2 = .38, $F(3,196)$ = 39.84, p < .001)						
Transformational LS	0.61	0.09	.46	6.78	< .001	[0.43, 0.79]
Transactional LS	0.09	0.10	.06	0.90	.370	[−0.11, 0.29]
Servant LS	0.44	0.11	.33	4.00	< .001	[0.22, 0.66]

Note. N = 200. Block 1 (demographic covariates) results not shown for parsimony. Standardized (β) and unstandardized (B) coefficients are from Block 2 of the hierarchical model. 95% CI = 95% confidence interval for B. LS = Leadership Style preference composite.

For job satisfaction, transformational leadership preference emerged as the strongest predictor (β = .48, t = 7.43, p < .001), followed by servant leadership preference (β = .24, t = 3.44, p = .001) and transactional leadership preference (β = .14, t = 2.25, p = .026). For work engagement, transformational leadership preference again emerged as the dominant predictor (β = .46, t = 6.78, p < .001), with servant leadership preference also making a significant independent contribution (β = .33, t = 4.00, p < .001). Transactional leadership preference did not significantly predict work engagement (β = .06, t = 0.90, p = .370) after accounting for transformational and servant leadership preferences. These findings provide strong support for H4 and H5.

Generation as a Moderator of Leadership Preference–Outcome Relationships (H6)

Moderated regression analyses were conducted to test whether generational cohort significantly moderated the relationships between leadership style preferences and employee outcomes. Interaction terms were computed using mean-centered predictors to reduce multicollinearity. Results are summarized in Table 6.

Table 6

Moderated Regression Results: Generation as Moderator of Leadership Preference–Outcome Relationships

Predictor / Interaction	*B*	*SE*	*t*	*p*	*ΔR²*
Transformational LS (TFL)	0.57	0.07	8.14	< .001	—
Generation (dummy coded)	0.22	0.06	3.67	< .001	—
TFL × Generation	0.19	0.05	3.80	< .001	.07
Servant LS (SVL)	0.48	0.09	5.33	< .001	—

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Predictor / Interaction	*B*	*SE*	*t*	*p*	*ΔR²*
Generation (dummy coded)	0.19	0.06	3.17	.002	—
SVL × Generation	0.16	0.06	2.67	.008	.05

Note. N = 200. B = unstandardized regression coefficient; SE = standard error; ΔR^2 = change in R^2 associated with the interaction term. TFL = Transformational Leadership preference composite; SVL = Servant Leadership preference composite. Generation was dummy-coded with Millennials as the reference category.

For work engagement as the outcome, the Transformational Leadership × Generation interaction was statistically significant (B = 0.19, SE = 0.05, $t = 3.80$, $p < .001$, $\Delta R^2 = .07$), indicating that the positive association between transformational leadership preferences and work engagement was stronger for Generation Z than for Millennials (the reference category), and weaker for Baby Boomers and Generation X. Similarly, the Servant Leadership × Generation interaction was significant (B = 0.16, SE = 0.06, $t = 2.67$, $p = .008$, $\Delta R^2 = .05$), with Generation Z again showing the strongest servant leadership preference–engagement association. These patterns were consistent across job satisfaction as an outcome variable (results available from the corresponding author). These findings provide support for H6, demonstrating that generation significantly moderates the relationship between leadership style preferences and employee outcomes.

Discussion

The present study examined generational differences in leadership style preferences and their associations with job satisfaction and work engagement among 200 employees across four Silicon Valley-type technology organizations in Lahore, Pakistan. The findings yield several theoretically significant and practically actionable insights that extend the existing literature on generational diversity, leadership, and organizational outcomes in emerging economy technology contexts.

Generational Differences in Leadership Style Preferences

Consistent with H1, H2, and H3, the present study found statistically significant generational differences across all major leadership style preference dimensions. Millennials and Generation Z demonstrated significantly stronger preferences for transformational leadership than Baby Boomers and Generation X, replicating and extending prior research in Western organizational contexts (Cennamo & Gardner, 2008; Myers & Sadaghiani, 2010) to the Pakistani technology sector. The large effect size for servant leadership preferences ($\eta^2 = .25$) and the fully linear generational ordering—with preferences increasing monotonically from Baby Boomers through Generation X, Millennials, and Generation Z—represents a particularly noteworthy finding that extends beyond the transformational-versus-transactional framing that has dominated the generational leadership literature.

The relatively stronger transactional leadership preferences expressed by Baby Boomers and Generation X are consistent with Generational Cohort Theory's

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emphasis on the formative influence of institutional experience. Both cohorts came of age in organizational environments where transactional exchanges—clearly defined performance expectations, contingent rewards, and structured authority relationships—were normative leadership arrangements. Their comfort with transactional leadership may therefore reflect deeply internalized workplace schemas rather than merely an absence of exposure to transformational leadership possibilities.

The notably strong servant leadership preferences among Generation Z—exceeding even Millennial preferences—aligns with Francis and Hoefel's (2018) characterization of Generation Z as fundamentally oriented toward authenticity, ethical accountability, and the co-creation of meaning in the workplace. For Generation Z employees who have grown up in an era of institutional distrust and corporate ethical failures, servant leadership's emphasis on putting followers first, behaving ethically, and building community may resonate with particular force. This finding carries important implications for leadership theory: as Generation Z constitutes an increasing proportion of the technology workforce globally and in Pakistan, servant leadership warrants elevation from its current supplementary status in leadership development programs to a more central position.

Leadership Preferences as Predictors of Employee Outcomes

The regression analyses strongly supported H4 and H5, demonstrating that leadership style preferences particularly for transformational and servant leadership—were robust predictors of both job satisfaction and work engagement after controlling for demographic factors. The substantial incremental variance explained ($\Delta R^2 = .41$ for job satisfaction; $\Delta R^2 = .38$ for work engagement) underscores the practical significance of leadership preference alignment as a mechanism for enhancing employee outcomes.

The finding that transformational leadership preference was the strongest predictor of both outcomes is consistent with the extensive meta-analytic literature (Judge & Piccolo, 2004) and further validates the generalizability of these associations to the Pakistani technology sector context. Perhaps more noteworthy is the significant independent predictive contribution of servant leadership preference after accounting for transformational leadership, particularly for work engagement ($\beta = .33$). This finding suggests that servant leadership preference captures unique variance in engagement outcomes not explained by transformational leadership preference, potentially through distinct mechanisms involving psychological safety, trust in leadership integrity, and the fulfillment of higher-order needs for meaningful work and personal development.

The absence of a significant transactional leadership preference–work engagement association, after controlling for transformational and servant leadership preferences, aligns with theoretical expectations. Transactional exchanges may generate sufficient extrinsic motivation to produce job satisfaction ($\beta = .14$) but may be insufficient to generate the deeper intrinsic motivational states—vigor, dedication, absorption—that constitute work engagement (Breevaart et al., 2014). These findings have direct implications for talent strategy in Pakistan's technology sector: organizations whose leadership cultures are predominantly transactional may be systematically underutilizing the engagement potential of their Millennial and Generation Z majority

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workforces.

Generation as a Moderator of Leadership Preference–Outcome Relationships

The moderated regression analyses supported H6, demonstrating that generational cohort membership significantly moderated the relationships between leadership style preferences and work engagement. Generation Z exhibited the strongest associations between both transformational and servant leadership preferences and engagement outcomes, suggesting that these cohort members experience the greatest performance benefits when their leadership preferences are aligned with organizational leadership approaches. This pattern is consistent with Person-Environment Fit Theory (Kristof, 1996), which predicts that the alignment between individual preferences or values and environmental characteristics yields stronger positive outcomes than misalignment.

The practical implication of this moderation finding is that leadership preference alignment may be a particularly high-leverage intervention for engaging and retaining Generation Z employees—a cohort whose organizational tenure and engagement levels are increasingly critical for technology organizations facing acute talent shortages. When Generation Z employees' preferences for transformational and servant leadership are met, the engagement returns appear to be disproportionately large relative to older cohorts. Conversely, leadership cultures misaligned with these preferences may impose disproportionate disengagement costs for Generation Z talent.

Contextual Contributions: The Pakistani Technology Sector

Beyond its generational and leadership contributions, the present study makes a specific contribution to the emerging literature on organizational behavior in Pakistan's technology sector. The findings demonstrate that the generational patterning of leadership preferences documented in Western research is broadly replicated in the Lahore technology context, suggesting that generational cohort effects on leadership preferences may be more globally consistent than cultural relativist perspectives would predict. At the same time, the particularly strong generational effects observed for servant leadership a finding not uniformly documented in Western samples—may reflect the influence of Islamic values emphasizing service, humility, and community care, which resonate with servant leadership principles and may amplify the appeal of this style among Pakistani technology workers across generational lines.

The four organizations examined in this study—Tkxel, PureLogics, Systems Limited, and Bykea collectively represent a meaningful cross-section of Lahore's technology sector, spanning established multinational software services (Systems Limited), agile product companies (Bykea), and boutique development firms (Tkxel, PureLogics). The consistency of generational effects across these organizationally diverse contexts enhances confidence in the robustness and generalizability of the findings within Pakistani Silicon Valley-type technology environments.

Limitations and Future Directions

Several limitations of the present study warrant acknowledgment. First, the cross-sectional design precludes causal inference; the observed associations between leadership preferences and employee outcomes may reflect reverse causation or third-

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variable confounds. Future research should employ longitudinal designs to examine whether changes in leadership style alignment produce corresponding changes in satisfaction and engagement over time. Second, the small Baby Boomer subsample (n = 8) limits statistical power for detecting generational differences involving this cohort and reduces the reliability of post hoc comparisons involving Baby Boomers specifically. Future studies targeting organizations with more age-diverse workforces, or employing targeted oversampling of older employees, would produce more robust cross-cohort comparisons.

Third, the use of self-report measures for all study variables introduces the possibility of common method variance inflating observed associations. Future research should consider supplementing self-reported leadership preferences with peer, supervisor, or behavioral assessments. Fourth, the study was geographically restricted to Lahore-based technology organizations; generalizability to technology organizations in other Pakistani cities (Karachi, Islamabad) or other South Asian emerging economies cannot be assumed and represents an important direction for future inquiry. Fifth, the study did not examine specific leadership behaviors enacted by supervisors, only employee preferences for leadership styles; research examining the congruence between preferred and experienced leadership would provide a more complete picture of alignment effects on outcomes.

Future research directions include: (a) examining generational leadership preference dynamics in hybrid and remote work environments, which have become increasingly prevalent post-pandemic and may amplify the importance of transformational and servant leadership behaviors; (b) investigating the role of organizational culture as a boundary condition moderating the generational leadership preference–outcome relationships documented in the present study; (c) examining whether cross-generational mentoring relationships and reverse mentoring programs can bridge generational leadership preference gaps; and (d) developing and evaluating culturally adapted leadership development programs that explicitly address the preferences of Pakistan's predominantly Millennial and Generation Z technology workforce.

Conclusions

This study provides robust quantitative evidence that generational cohort membership meaningfully differentiates leadership style preferences among technology employees in Lahore, Pakistan. Millennials and Generation Z demonstrate significantly stronger preferences for transformational and servant leadership than their Baby Boomer and Generation X counterparts, and these preferences constitute strong predictors of job satisfaction and work engagement. Generation moderated these relationships, with Generation Z exhibiting the most pronounced outcome benefits from preference alignment. These findings challenge the continued prevalence of transactionally oriented leadership cultures in technology organizations and support the strategic investment in transformational and servant leadership development as a means of maximizing engagement and retention across a multigenerational technology workforce. As Pakistan's technology sector continues its rapid expansion, evidence-based attention to the leadership preferences of diverse generational cohorts will be essential for building the high-performing, engaged workforces that drive organizational and national technological advancement.

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