

## RESEARCH ARTICLE

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# How Perceived Stress Shapes Job Satisfaction, Affective Commitment, and Turnover Intention: Generational and Age Patterns

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### Abstract

This study examines how perceived stress relates to emotional exhaustion, job attitudes, and turnover intention across age and generational groups in a Romanian industrial engineering and automation company. Grounded primarily in the Job Demands-Resources and Conservation of Resources frameworks, and complemented by generational and lifespan perspectives, we tested a model linking perceived stress, emotional exhaustion, job satisfaction, affective organizational commitment, and turnover intention. Survey data from  $N = 95$  employees (Generations X, Y, and Z) were analyzed using ANOVA/ANCOVA, hierarchical regressions, and PROCESS mediation and moderated mediation models with 5,000 bootstraps, modeling generation as a categorical predictor and age as a continuous covariate. Higher perceived stress was strongly associated with greater emotional exhaustion and with lower job satisfaction and affective commitment. Emotional exhaustion fully mediated the relationship between perceived stress and turnover intention, while affective commitment partially mediated the job satisfaction-turnover intention link. Generational differences were observable at the cohort-mean level, but many effects were more parsimoniously explained by linear age once age was included in the models. The findings underscore the central role of perceived stress and emotional exhaustion in shaping turnover intentions and suggest that age-related developmental dynamics may be more informative than generational labels for understanding stress-attitude links in organizational settings.

### Keywords

Perceived stress, Emotional exhaustion, Job satisfaction, Affective commitment, Turnover intentions, Generational differences

### INTRODUCTION

Perceived stress and its consequences for employee well-being, motivation, and retention remain central concerns in organizational psychology, with extensive evidence showing that imbalances between demands and resources undermine energy,

satisfaction, and affective commitment (Bakker & Demerouti, 2007; Hobfoll, 1989; Schaufeli & Bakker, 2004). Within this literature, the Job Demands-Resources (JD-R) model and Conservation of Resources (COR) theory offer robust explanations for why perceived stress, defined as subjective appraisals of unpredictability and lack of

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control (Cohen et al., 1983; Lazarus & Folkman, 1984), predicts emotional exhaustion, lower job attitudes, and stronger turnover intention. Yet organizations increasingly frame these stress experiences as generational, claiming that Millennials or Generation Z are “more stressed,” “less committed,” or “more likely to quit.” Such beliefs have gained managerial traction, especially in rapidly changing industries.

However, the generational literature is marked by two unresolved problems. First, empirical findings on cohort differences are inconsistent and often small; meta-analyses show that many alleged generational gaps disappear once age, a continuous developmental variable, is included (Costanza et al., 2012; Lyons & Kuron, 2014). Second, research frequently conflates age and generation, treating them interchangeably despite being conceptually distinct: age reflects developmental change, whereas generation reflects shared socio-historical context (Rudolph et al., 2018). This conceptual ambiguity has produced contradictory claims about whether younger cohorts truly experience stress and strain differently or whether these patterns simply reflect age-related trajectories, such as fewer coping resources or earlier career instability.

This tension represents the core puzzle motivating the present study: Do perceived stress, emotional exhaustion, satisfaction, affective commitment, and turnover intention differ across generational groups because of true cohort effects or because of linear age trends?

However, since generational membership is defined by age, a cross-sectional design cannot fully disentangle age effects from cohort effects, even when statistically modeled separately. Following Costanza et al. (2012), researchers may include both variables in the same model to compare explanatory power and examine whether apparent cohort differences persist beyond linear age variance, while acknowledging that clean separation is impossible without longitudinal or repeated-cohort designs. Thus, any generational

differences we report must be interpreted as descriptive cohort patterns, not as isolated cohort effects, since they remain inseparable from age-related variance in a cross-sectional design.

Despite intense practitioner interest, few studies examine age and generation simultaneously, and almost none do so within a single organizational context where job demands and resources are held relatively constant. The gap is even more pronounced in Eastern Europe, where empirical work linking perceived stress experiences with multi-age workforce dynamics remains limited (see also Marcus et al., 2024).

To address this gap, the present study tests a stress–strain–attitude–turnover sequence in a Romanian industrial engineering company, grounding the model primarily in JD-R and COR, with generational perspectives used only as a secondary explanatory overlay. By modeling generation as a categorical predictor (Gen X, Gen Y, Gen Z) and age as a continuous covariate, we evaluate whether apparent generational differences persist once age-related variance is accounted for, responding directly to long-standing calls for methodological clarity in generational research (Costanza et al., 2012; Rudolph et al., 2018). This approach enables us to determine whether younger cohorts truly show stronger stress reactivity, or whether age provides a more parsimonious explanation for exhaustion, job attitudes, and turnover intentions.

In doing so, the study contributes theoretically by clarifying the conditions under which perceived stress processes vary across demographic groups and by integrating stress theories with a more cautious and conceptually precise use of generational perspectives. Practically, the findings inform whether organizations should design retention and well-being interventions around generational categories or whether age-related patterns offer a more valid foundation for workforce management in contemporary Romanian and Eastern European contexts.

## THEORY AND HYPOTHESES

### Perceived Stress and Its Work-Related Implications

The Job Demands–Resources (JD-R) model conceptualizes stress as the result of an imbalance between job demands, such as workload, role conflict, or work–life interference, and the resources available to cope with them, including autonomy, support, and feedback (Bakker & Demerouti, 2007). Complementing this view, the Conservation of Resources (COR) theory proposes that stress arises when individuals experience or anticipate a loss of personal resources such as time, energy, or financial security (Hobfoll, 1989). Together, these frameworks emphasize that stress is fundamentally a perceived imbalance and thus strongly shaped by appraisals (Lazarus & Folkman, 1984).

High perceived stress is associated with numerous negative outcomes, including emotional exhaustion, reduced well-being, lower motivation, absenteeism, and turnover intentions (Bhui et al., 2016; Demerouti et al., 2001). Because our study uses the Perceived Stress Scale (PSS-10), we conceptualize stress as general perceived stress or a subjective appraisal of unpredictability and lack of control, which nevertheless influences work-related attitudes and outcomes.

Recent literature suggests that perceptions of stress may vary across generational locations because individuals raised in different historical contexts evaluate job demands and resources differently. Cultural shifts, such as economic uncertainty, digitalization, and rising individualism, have been shown to shape work expectations and stress sensitivity among younger cohorts (Campbell et al., 2017; Twenge et al., 2010). Three mechanisms help explain these differences. First, cultural-historical influences: formative events and technological environments shape generational expectations about work, stability, and work-life boundaries. Second, identity and stereotypes: generational narratives and stereotypes (e.g., “Millennials value balance,” “Gen Z is always connected”) may reinforce stress perceptions

through internalized expectations (Riggio & Saggi, 2015). Finally, resource distribution: younger employees often have access to fewer structural resources (autonomy, seniority), while older workers benefit from accumulated experience and organizational status (Rudolph et al., 2018).

At the same time, critics emphasize that generational effects are often small and may reflect age or career stage rather than true cohort differences (Costanza et al., 2012). Testing both age and generational categories, therefore, remains important to clarify whether apparent cohort differences persist after accounting for life-stage effects.

Based on prior evidence that younger employees consistently report higher stress levels, due to economic precarity, blurred boundaries, and fewer coping resources, we predict:

**H1:** *Younger generational groups (Gen Z, Gen Y) will report higher levels of perceived stress than older groups (Gen X), reflecting both developmental and socio-cultural differences in demands, resources, and expectations.*

### From Perceived Stress to Emotional Exhaustion and Turnover Intention

According to the JD-R model and COR theory, high demands and threatened or lost resources lead to strain responses such as emotional exhaustion, the core component of burnout, and the earliest indicator of resource depletion (Demerouti et al., 2001; Maslach et al., 2001). Because perceived stress reflects appraisals of overload and uncontrollability, higher levels of perceived stress, regardless of source, signal a mismatch between demands and coping resources and therefore predict exhaustion (Hobfoll, 1989; Lazarus & Folkman, 1984).

Emotional exhaustion is consistently linked to sustained demands such as workload, role conflict, and time pressure, and is associated with reduced motivation, poorer performance, and increased turnover intention (Maslach & Leiter, 2008; Schaufeli et al.,

2009). Exhaustion also initiates resource “loss spirals,” further limiting recovery and increasing vulnerability to future strain (Hobfoll, 2001).

Age-related differences help refine this universal stress-strain pathway. Lifespan theory suggests that younger adults have less developed coping and emotion-regulation capacities and place greater emphasis on achievement and career progress, making them more reactive to stressors such as instability, conflict, or overload (Baltes, 1987; Walter & Scheibe, 2013). Older employees, in contrast, draw on accumulated experience and superior emotion regulation, which protects against exhaustion even under similar levels of perceived stress (Scheibe et al., 2015). Thus, any moderation is more likely attributable to age as a continuous developmental trajectory rather than to discrete generational categories.

Generational perspectives nevertheless provide a sociocultural overlay, suggesting that shared historical and technological contexts may influence how stressors are appraised. Younger cohorts (Millennials, Gen Z) have been found to report higher stress and exhaustion due to economic precarity, digital connectivity, and blurred work-life boundaries (American Psychological Association, 2018; Twenge et al., 2010). Therefore, both age and cohort may shape how perceived stress translates into exhaustion, although these effects often overlap (Costanza et al., 2012).

Based on JD–R and COR theory and prior empirical evidence, we predict:

**H2:** *Perceived stress is positively associated with emotional exhaustion, and this association is stronger for younger generational groups (Gen Z and Millennials) compared to older groups (Gen X).*

Emotional exhaustion also plays a central role in shaping turnover intention. It erodes job satisfaction, weakens affective commitment, and reduces engagement, thereby increasing employees’ likelihood of leaving the organization (Taris et al., 2005; Wright & Cropanzano, 1998). Across numerous designs, exhaustion emerges as one of the strongest predictors of turnover intention, even beyond job attitudes or

dispositional affect (N. P. Podsakoff et al., 2007; Schaufeli & Bakker, 2004).

Some studies suggest that this exhaustion-to-turnover relationship may be stronger for younger workers, who respond more negatively to unmet expectations or resource constraints (Hu et al., 2025; Lu & Gursoy, 2016). However, age and generational effects are difficult to disentangle, and existing evidence often stems from samples across different organizations, introducing confounds.

Our single-organization design offers a cleaner comparison. Based on prior work, we expect emotional exhaustion to mediate the stress-turnover link while acknowledging that its strength may differ by age or cohort.

**H3:** *Emotional exhaustion mediates the relationship between perceived stress and turnover intention, and this mediation is stronger among younger generational groups (Gen Z and Millennials) than among Gen X.*

Taken together, these findings position emotional exhaustion as the central strain outcome through which perceived stress affects key work attitudes. Building on this stress-strain pathway, the next section examines how exhaustion shapes job satisfaction and organizational commitment, two core attitudinal mechanisms in the broader process leading to turnover intention.

## **Job Satisfaction and Perceived Stress**

Job satisfaction is a positive evaluative and emotional response to one’s job, shaped by appraisals of work conditions and the alignment between job characteristics and personal values (Judge et al., 2001; Locke, 1969). As a core work attitude, job satisfaction predicts performance, retention, and overall well-being.

Within the JD–R model, job resources such as autonomy, support, and feedback serve as motivational drivers that increase job satisfaction, whereas high job demands and strain diminish satisfaction (Bakker & Demerouti, 2007; Spector & Jex, 1991). Perceived stress, defined as a subjective appraisal of overload, unpredictability, and

lack of control, reflects an imbalance between demands and coping resources and therefore contributes to reduced job satisfaction. COR theory reinforces this mechanism by proposing that sustained stress depletes personal resources such as energy and emotional resilience, making it more difficult for employees to maintain positive job evaluations (Hobfoll, 1989). Meta-analytic evidence confirms that higher levels of stress reliably predict lower job satisfaction (Bowling et al., 2010).

Generational perspectives provide a complementary sociocultural interpretation of this relationship. Recent cohorts such as Millennials and Gen Z have entered the workforce during periods of economic instability, rapid technological change, and increased digital connectivity, conditions that intensify perceived stress and heighten dissatisfaction when expectations for flexibility, meaningful work, or development opportunities are unmet (Grelle et al., 2023; Twenge et al., 2010). By contrast, older cohorts often value stability, organizational loyalty, and structured career paths, which may shape different satisfaction profiles under similar levels of stress.

However, generational explanations are not without critique. Some researchers argue that differences in satisfaction may reflect value-job fit or broader labor market conditions rather than cohort-specific attitudes (Lyons et al., 2015; Parry & Urwin, 2011). Others highlight structural disadvantages, such as precarious contracts and delayed career progression, that disproportionately affect younger cohorts and may partly explain their lower satisfaction levels (Costanza et al., 2012). These critiques suggest that both sociocultural context and structural constraints shape how different cohorts interpret and react to stress at work.

Taken together, JD-R and COR offer a clear mechanism through which perceived stress diminishes job satisfaction, while generational perspectives suggest that this negative association may be stronger among younger cohorts navigating more unstable and demanding work environments.

Based on JD-R and COR theory and prior evidence, we predict:

**H4:** *Perceived stress is negatively associated with job satisfaction, and this negative relationship is stronger among younger generational groups (Gen Z and Millennials) compared to older groups (Gen X).*

### **Affective Commitment and Perceived Stress**

Affective commitment refers to an employee's emotional attachment to, identification with, and involvement in the organization (Meyer & Allen, 1991). Unlike job satisfaction, which reflects evaluations of one's job, affective commitment reflects a deeper relational bond that connects employees to their organization. This bond is strengthened when employees feel supported and valued and weakened when work conditions strain their personal resources.

JD-R theory proposes that job resources, such as supervisor support, feedback, and development opportunities, foster motivation and strengthen affective commitment through the motivational pathway (Bakker & Demerouti, 2007). Conversely, high demands and elevated stress levels undermine commitment by diminishing energy, reducing motivation, and weakening the employee-organization bond (Schaufeli & Bakker, 2004). From a COR perspective, stress depletes personal resources such as time, emotional energy, and resilience, making employees less able and less willing to invest further in the organization (Hobfoll, 1989). When individuals perceive sustained imbalance between demands and coping resources, the sense of reciprocity, central to affective commitment, is disrupted, and emotional attachment declines.

Generational perspectives provide additional insight into how different cohorts interpret and respond to stress in the context of organizational commitment. Younger cohorts such as Millennials and Gen Z have entered the workforce in more volatile economic and organizational environments, often prioritizing flexibility, fairness, and work-life balance (Grelle et al., 2023; Lyons & Kuron, 2014). When these expectations are unmet or when stress signals unsupportive or inflexible

conditions, younger generations may experience sharper declines in affective commitment. In contrast, older cohorts often place greater emphasis on stability, organizational loyalty, and long-term career investment, which may buffer the negative effect of stress on commitment.

Structural labor market conditions also shape generational patterns. Younger cohorts frequently face job insecurity, temporary contracts, or rapid organizational change, making them more sensitive to stress as a signal of unfairness or poor reciprocity. Meta-analyses show that job stressors such as workload, role conflict, and job insecurity consistently predict lower affective commitment (Cooper-Hakim & Viswesvaran, 2005; Mathieu & Zajac, 1990). These findings suggest that while perceived stress erodes affective commitment broadly, its impact may be amplified among younger generational groups, who often hold stronger expectations for support, development, and value alignment.

Although critics argue that generational differences may reflect career stage or age-related factors, cohort-specific experiences, such as entering the labor market during recessionary periods or through precarious employment, provide a sociocultural context that shapes how different groups interpret stress and organizational support (Costanza et al., 2012). Thus, examining both perceived stress and generational location offers insight into potential variability in the stress-commitment relationship.

Taken together, JD-R and COR frameworks suggest that perceived stress erodes affective commitment by taxing personal resources and weakening the psychological bond with the organization. Generational perspectives imply that this erosion may be stronger for younger cohorts navigating more unstable and demanding work environments.

**H5:** *Perceived stress is negatively associated with affective commitment, and this negative relationship is stronger among younger generational groups (Gen Z and Millennials) compared to older groups (Gen X).*

## **Job Satisfaction, Affective Commitment, and Turnover Intention**

Job satisfaction and affective commitment represent two central work attitudes within the JD-R framework. Job satisfaction reflects employees' evaluations of their job experiences, while affective commitment captures their emotional attachment to the organization (Meyer & Allen, 1991). Although distinct, these attitudes are closely linked: satisfaction forms a more immediate appraisal of work conditions, whereas affective commitment reflects a deeper, value-based bond that develops over time.

A substantial body of research supports a sequential pathway in which job satisfaction predicts affective commitment, which in turn predicts turnover intention. Meta-analyses show that satisfied employees are more likely to develop strong affective bonds to their organization (Meyer et al., 2002), and that, more than satisfaction, commitment explains whether dissatisfaction ultimately translates into an intention to leave (Hom & Griffeth, 1995; Tett & Meyer, 1993). Within the JD-R and COR frameworks, this sequence reflects the interplay between resource evaluations and relational investment. When stress erodes satisfaction, employees experience resource loss, which weakens their emotional connection to the organization and increases the likelihood of turnover intentions.

Generational perspectives provide additional insight into how these attitudes relate. Younger cohorts (e.g., Millennials and Gen Z) tend to hold stronger expectations for development, fairness, and work-life balance. When stress diminishes satisfaction, these unmet expectations may lead younger groups to reduce commitment more quickly and to form stronger intentions to leave. In contrast, older cohorts may maintain commitment for longer due to accumulated investments, stability preferences, or stronger expectations of reciprocity. Although critics note that generational differences often overlap with career stage, empirical evidence shows that younger cohorts systematically report lower satisfaction and commitment and higher turnover intention, partly due to structural

labor market conditions (Costanza et al., 2012).

Taken together, prior evidence suggests a robust satisfaction-commitment-turnover intention sequence that aligns with JD-R and COR mechanisms. Perceived stress weakens satisfaction, reduced satisfaction undermines affective commitment, and lower commitment increases turnover intention. This sequential pathway is expected to operate across generational groups, though the magnitude of effects may differ depending on cohort-specific expectations and experiences.

**H6:** *Affective commitment mediates the relationship between job satisfaction and turnover intention, and this sequential pathway is expected to hold across generational groups.*

## METHOD

### Sample and procedure

This study used a cross-sectional survey design to examine perceived stress, emotional exhaustion, job satisfaction, affective organizational commitment, and turnover intention among employees of an industrial engineering and automation company located in Braşov, Romania. The organization is part of a larger Romanian-owned industrial group that delivers turnkey process-engineering and automation projects (design, installation, commissioning, and maintenance) for clients in food, pharmaceutical, chemical, and related industries in Europe and beyond. The company has a dual structure combining office-based technical-administrative staff and shop-floor personnel involved in production, assembly, and maintenance activities.

At the time of data collection (May–June 2025), the company employed 124 people. Of these, 114 employees were eligible to participate (excluding those on medical leave, with suspended contracts, or temporary collaborators). The questionnaire was distributed to the full eligible population, and 95 valid responses were obtained, yielding a response rate of 83.3%.

The sample was 77.4% male ( $N = 72$ ) and 22.6% female ( $N = 21$ ). Regarding occupational category, 63.4% ( $N = 59$ ) worked in technical-administrative roles and 36.6% ( $N = 34$ ) in production, assembly, or maintenance. Hierarchically, 18.3% ( $N = 17$ ) held managerial positions and 81.7% ( $N = 76$ ) were non-managers; hierarchical level was later included as a control in the analyses to account for potential confounding with stress and commitment. Educational levels were: 3.2% high school ( $N = 3$ ), 26.9% vocational/post-secondary ( $N = 25$ ), 48.4% university degree ( $N = 45$ ), and 21.5% master's degree ( $N = 20$ ). Organizational tenure was < 1 year for 10.8% of respondents ( $N = 10$ ), 1–3 years for 20.4% ( $N = 19$ ), 3–5 years for 29.0% ( $N = 27$ ), and over 5 years for 39.8% ( $N = 37$ ).

Both age and generational cohort were recorded. Age was treated as a continuous variable. Generational groups were defined using commonly used birth-year cut-offs: Generation X (1965–1980), Generation Y/Millennials (1981–1996), and Generation Z (1997–2012) (Geiger, 2015; Nwoko & Yazdani, 2023). A very small number of Baby Boomer employees ( $N = 2$ ) were present in the organization but were excluded from generational analyses due to insufficient cell size; consequently, all generational comparisons focus on Generations X, Y, and Z.

Data were collected via an anonymous online questionnaire administered through the company's internal communication platform and email. Participation was voluntary, respondents were informed about the academic purpose of the study, and confidentiality was explicitly guaranteed. The non-experimental, cross-sectional design is consistent with best practices for examining work-related attitudes and perceived stress in organizational field settings.

### Measures

Perceived stress was assessed with the 10-item Perceived Stress Scale (PSS-10) (Cohen et al., 1983), using the Romanian translation validated by Dumitrescu et al. (2014). The scale captures the extent to which recent

situations are appraised as unpredictable, uncontrollable, or overwhelming over the last 30 days. Items were rated on a 5-point Likert scale (1 = Never to 5 = Very often). Positively worded items were reverse-coded before computing total scores; higher values represent higher perceived stress. Internal consistency was excellent ( $\alpha = .879$ ).

Emotional exhaustion was measured using a 9-item adapted version of the emotional exhaustion subscale of the Maslach Burnout Inventory – Human Services Survey (MBI-HSS) (Maslach & Jackson, 1981), following the Romanian validation framework (Bria et al., 2014). Items capture feelings of emotional depletion at work. To ensure consistency across the questionnaire, we employed a 5-point response format (1 = Never to 5 = Very often), instead of the original 7-point format. Items were summed, with higher scores indicating greater exhaustion. The adapted scale demonstrated very good reliability ( $\alpha = .884$ ).

Turnover intention was assessed using the TIS-3 (Cammann et al., 1983), consisting of three items measuring employees' intention to leave the organization (e.g., "I'm thinking about quitting"). Items were rated on a 5-point Likert scale (1 = Strongly disagree to 5 = Strongly agree) to maintain consistency with the other measures. Higher summed scores reflect stronger turnover intention. Reliability was very good ( $\alpha = .804$ ). Prior research supports its use in Romanian organizational settings (Nemteanu & Dabija, 2020).

Affective organizational commitment was measured with the 9-item Organizational Commitment Questionnaire (OCQ) (Mowday et al., 1979), which captures emotional attachment, identification, and involvement with the organization. Following Romanian validation studies (Veress & Gavreliuc, 2018), items were presented on a 5-point Likert scale (1 = Strongly disagree to 5 = Strongly agree). Higher summed scores indicate stronger affective commitment. Internal consistency was very good ( $\alpha = .880$ ).

Job satisfaction was measured with the 18-item short form of the Job Satisfaction Survey (JSS-18) (Spector, 1985), covering nine facets (pay, promotion, supervision, benefits, contingent rewards, operating procedures, coworkers, nature of work, communication).

We used the Romanian translation lineage applied in Sabie, Popescu, and Crețu (2024). Items were rated on a 5-point Likert scale (1 = Strongly disagree to 5 = Strongly agree), with negatively keyed items reverse-coded. Summed scores represent overall job satisfaction. Internal consistency was good ( $\alpha = .794$ ).

## Data analysis

All analyses were conducted in SPSS (Version 29.0; IBM Corp., 2022). Data preparation included case screening for missing values, assessment of multivariate outliers, and verification of statistical assumptions. Missing data were minimal (< 5%) and handled via listwise deletion. Outliers were examined using Mahalanobis distance ( $p < .001$ ), but no cases were removed on this basis. Normality, linearity, and homoscedasticity were inspected through residual plots and skewness-kurtosis indices, and homogeneity of variances was checked with Levene's tests; diagnostics indicated that the data were adequate for the planned analyses.

Reliability for all composite scales was assessed using Cronbach's  $\alpha$ , with values ranging from .79 to .88, indicating acceptable to very good internal consistency. Descriptive statistics and zero-order correlations among all main study variables (perceived stress, emotional exhaustion, job satisfaction, affective organizational commitment, turnover intention, and age) are reported in the Results section.

To examine age and generational influences, we first modeled generation as a categorical predictor (Gen Z, Gen Y, Gen X), consistent with our initial aim of testing whether employees from different cohorts differed meaningfully in their experiences of stress, strain, and work attitudes. However, in line with extensive critiques of generational research, which argue that many "generational differences" may actually reflect continuous age-related developmental processes rather than discrete cohort boundaries (Costanza et al., 2012; Lyons & Kuron, 2014), we also included age as a continuous variable in all analyses. This dual specification allowed us to test explicitly whether observed cohort differences persisted once age-related

variance was accounted for, and whether age offered a more parsimonious explanation than categorical generational membership. Because age and generation are conceptually intertwined in any single cross-sectional sample, our analytic strategy treated their effects cautiously. Variance inflation factors (all VIFs < 2.0) indicated no problematic multicollinearity between age, generation, or the control variables, supporting their simultaneous inclusion. This approach strengthens the study’s methodological rigor, permitting a direct comparison between cohort-based and developmental explanations, thereby addressing a central critique raised by the generational literature.

After constructing composite scores for perceived stress, emotional exhaustion, job satisfaction, affective commitment, and turnover intention, hypothesis testing proceeded in stages aligned with H1–H6. First, bivariate correlations were used to establish baseline associations among variables. For H1, analysis of variance (ANOVA) and analysis of covariance (ANCOVA) were used to compare perceived stress across generational groups, supplemented by regression models treating age as a continuous predictor, in line with recommendations to avoid relying solely on

arbitrary cohort cut-offs (Costanza et al., 2012).

For H2, H4, and H5, hierarchical linear regressions examined the predictive role of perceived stress on emotional exhaustion, job satisfaction, and affective commitment, respectively, while controlling for age, gender, tenure, and generation. For H3 and H6, we estimated mediation and moderated mediation models using the PROCESS macro - Model 4 and Model 59 (Hayes, 2013) with 5,000 bootstrapped samples. Mediation analyses tested indirect effects of perceived stress (via exhaustion) on turnover intention (H3), and of job satisfaction (via affective commitment) on turnover intention (H6). Moderated mediation models treated generation as a categorical moderator of the relevant paths, with age retained as a continuous covariate so that any cohort effects would reflect variance beyond age.

This analytic strategy provided a coherent test of both direct and indirect relationships, embedding the stress–strain–attitude–turnover logic derived from JD-R and COR, while incorporating age and generation as distinct, yet intertwined, sources of variance. All inferential tests used an alpha level of .05; effects at  $p < .01$  and  $p < .001$  are highlighted in the Results section to indicate stronger evidence (Figure 1).

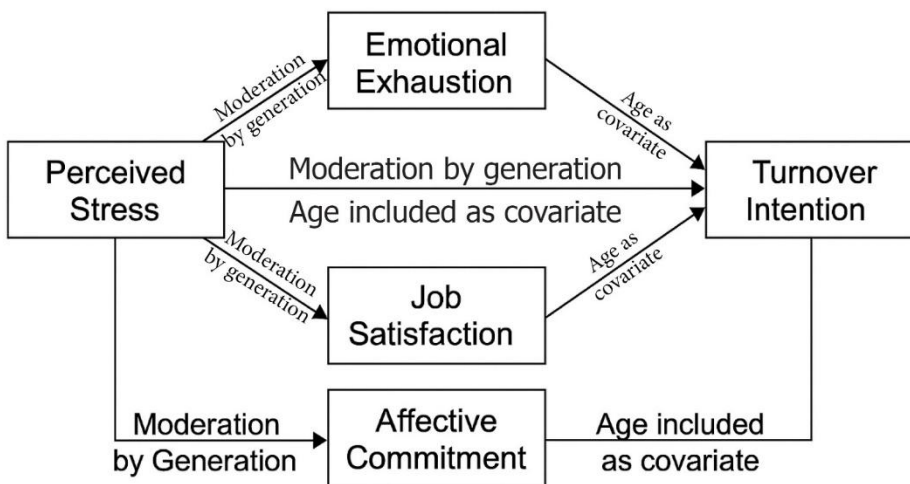


Figure 1. Conceptual model of hypothesized relationships

All hypothesis-specific statistics (ANOVA/ANCOVA, regression, and PROCESS output), along with detailed tables and visualizations, are presented in the Results section and corresponding Appendices.

**RESULTS**

Analyses were based on  $N = 95$  valid cases (listwise deletion; <5% missing). All multi-item scales demonstrated good reliability ( $\alpha = .79-.88$ ). Assumption checks supported model adequacy: residual distributions showed acceptable normality and homoscedasticity; linearity assumptions were met; and homogeneity of variances held where required. Multicollinearity was low (all VIFs < 2.0).

Given ongoing critiques of generational research, generational group was modeled as a categorical predictor (Gen Z, Gen Y, Gen X), while age was included as a continuous covariate to estimate whether cohort differences persisted once age-related variance was partialled out (Table 1). This

approach acknowledges that age and generation cannot be fully disentangled in a cross-sectional design but allows us to assess whether any apparent cohort effects reflect age trends rather than genuine generational discontinuities.

**H1:** *Younger generational groups (Gen Z, Gen Y) will report higher levels of perceived stress than older groups (Gen X), reflecting both developmental and socio-cultural differences in demands, resources, and expectations.*

ANOVA revealed significant generational differences in perceived stress,  $F(3, 91) = 4.73, p = .004, \eta^2 = .14$  (95% CI [.02, .23]), with homogeneity of variances satisfied (Levene’s test:  $F(3, 91) = 1.05, p = .374$ ). Descriptively, Gen Z reported the highest stress ( $M = 28.32$ ), followed by Gen Y ( $M = 24.39$ ), Gen X ( $M = 22.47$ ), and Baby Boomers ( $M = 22.00, n = 2$ ) (Figure 2). Boomers were retained only for descriptive completeness (Table 2).

Table 1. *Descriptive statistics by generation*

| Generation   | <i>N</i> | <i>M (PSS)</i> | <i>SD</i> | 95% CI (Lower–Upper) |
|--------------|----------|----------------|-----------|----------------------|
| Gen Z        | 25       | 28.32          | 6.09      | 25.82 – 30.82        |
| Gen Y        | 38       | 24.39          | 5.15      | 22.72 – 26.07        |
| Gen X        | 30       | 22.47          | 5.11      | 20.56 – 24.37        |
| Baby Boomers | 2        | 22.00          | 1.41      | —                    |

Table 2. *ANOVA results for perceived stress across generations*

| Source         | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> | <i>p</i> | $\eta^2$ |
|----------------|-----------|-----------|-----------|----------|----------|----------|
| Between groups | 494.92    | 3         | 164.97    | 4.73     | .004     | .14      |
| Within groups  | 3173.99   | 91        | 34.88     |          |          |          |
| Total          | 3668.91   | 94        |           |          |          |          |

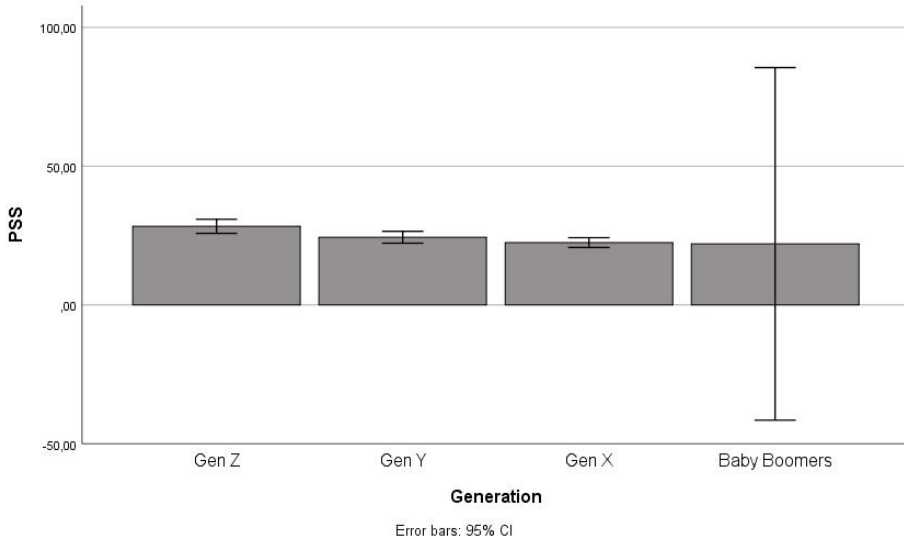


Figure 2. Bar chart of Perceived Stress by Generation

Tukey HSD post hoc tests indicated that Gen Z reported significantly higher stress than Gen X ( $p = .002$ ) and marginally higher stress than Gen Y ( $p = .056$ ).

To address critiques encouraging age-based analyses (Costanza et al., 2012),

perceived stress was correlated negatively with age,  $r(93) = -.33, p = .001$ . Regression confirmed that age significantly predicted stress,  $\beta = -.33, 95\% \text{ CI } [-.50, -.14]$ , explaining  $\sim 12\%$  of stress variance, with no curvilinear effect ( $\text{Age}^2, p = .25$ ) (Figure 3).

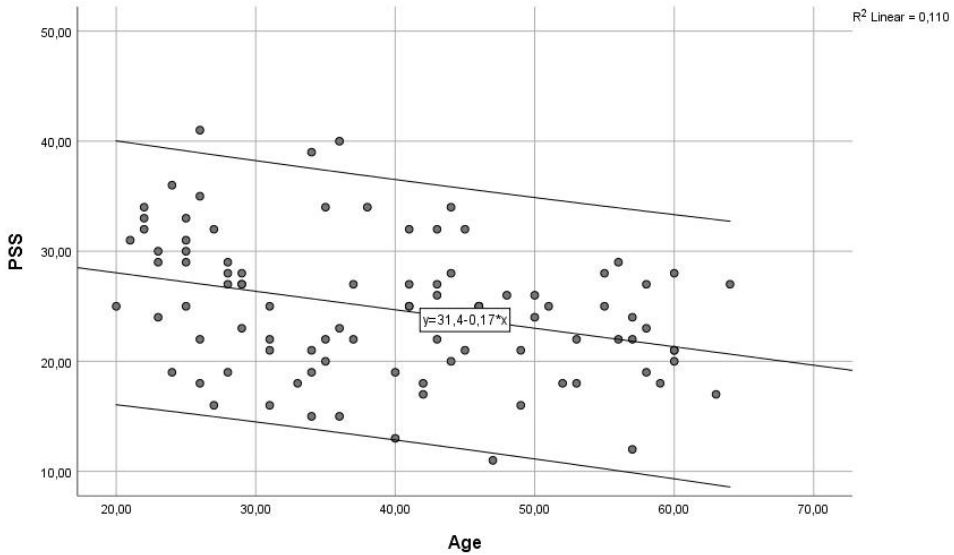


Figure 3. Scatterplot Stress vs. Age

An ANCOVA including age, gender, and tenure showed that the generational effect became non-significant once age was included,  $F(3,88) = 0.86, p = .468$ . Neither tenure nor gender predicted stress ( $ps > .25$ ) (Table 3).

Interpretation: H1 was supported at the cohort-mean level, but effects did not persist after controlling for age. Results are more parsimoniously explained by a linear age effect: younger employees report higher perceived stress (Figure 4).

**H2:** *Perceived stress is positively associated with emotional exhaustion, and this association is stronger for younger generational groups (Gen Z and Millennials) compared to older groups (Gen X).*

Perceived stress significantly predicted emotional exhaustion,  $B = 0.65, SE = 0.07, \beta = .70, t = 9.44, p < .001$ , accounting for 49% of variance. Adding controls (age, gender, tenure) did not alter this relationship: stress remained significant ( $B = 0.64, \beta = .68, p < .001$ ), and no control variable was significant.

Table 3. Hierarchical regression predicting Emotional Exhaustion

| Predictor  | B    | SE B | $\beta$ | t    | p     |
|--|------|------|---------|------|-------|
| Step 1 (Controls)                                  |      |      |         |      |       |
| Age  | -.04 | 0.04 | -.09    | -.98 | .332  |
| Gender (0 = M, 1 = F)                              | -.11 | 1.06 | -.01    | -.11 | .914  |
| Tenure   | .30  | .53  | .05     | .57  | .573  |
| $R^2 = .06, F = 1.39, p = .241$                    |      |      |         |      |       |
| Step 2 (Add Stress)                                |      |      |         |      |       |
| Perceived Stress (PSS)                             | .64  | .07  | .68     | 8.52 | <.001 |
| $R^2 = .49, \Delta R^2 = .43, F = 17.89, p < .001$ |      |      |         |      |       |

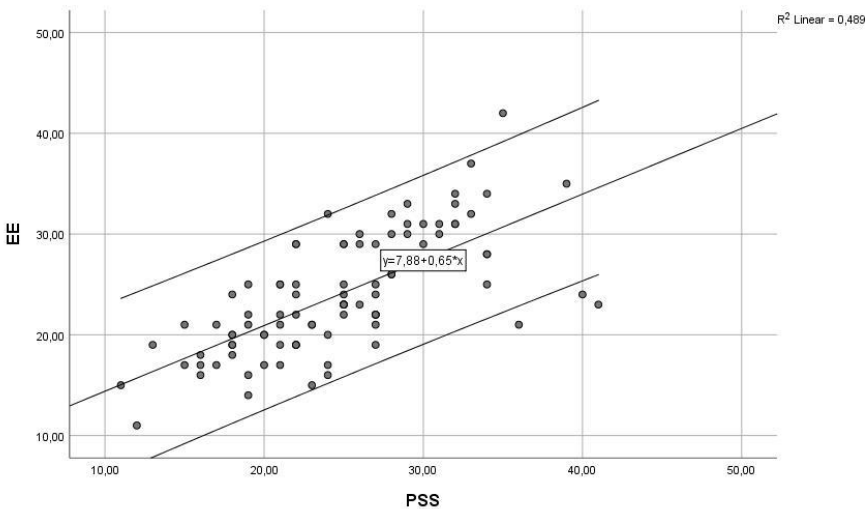


Figure 4. Scatterplot with regression line

To test moderation, a GLM including perceived stress and generational group showed a strong main effect of stress,  $F(1, 90) = 20.88, p < .001, \eta^2 = .19$ . The Stress  $\times$

Generation interaction was also significant,  $F(3, 90) = 22.97, p < .001, \eta^2 = .20$ , suggesting differing slopes across groups (Table 4).

Table 4. General Linear Model: Perceived Stress  $\times$  Generation predicting Emotional Exhaustion

| Source                  | df    | F     | p     | $\eta^2$ |
|-------------------------|-------|-------|-------|----------|
| Perceived Stress (PSS)  | 1, 90 | 20.88 | <.001 | .19      |
| Generation              | 3, 90 | 1.56  | .208  | .05      |
| PSS $\times$ Generation | 3, 90 | 22.97 | <.001 | .20      |
| Error                   | 90    | —     | —     | —        |

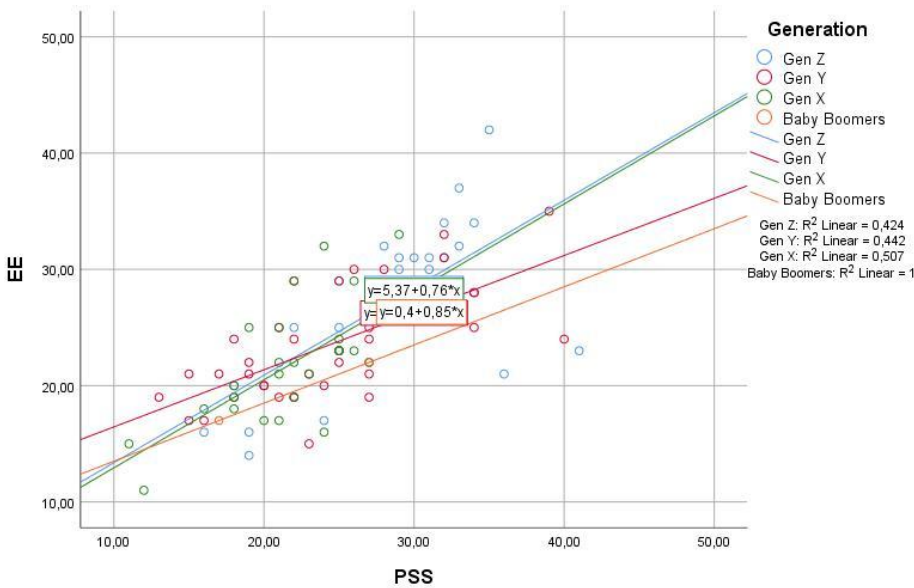


Figure 5. Interaction plot (Perceived Stress  $\times$  Generation  $\rightarrow$  EE)

However, as later PROCESS analyses (H3) demonstrate, this interaction does not replicate when age is treated as a continuous covariate, and bootstrapping is applied. Given the small generational subsamples, moderation should be interpreted with caution.

Interpretation: H2 is supported for the main effect of stress on exhaustion. Evidence for generational moderation is tentative and sensitive to analytic specification.

**H3:** Emotional exhaustion mediates the relationship between perceived stress and turnover intention, and this mediation is stronger among younger generational groups (Gen Z and Millennials) than among Gen X.

Using PROCESS Model 4 with 5,000 bootstraps, the mediation pathway was supported. Perceived stress predicted emotional exhaustion ( $B = 0.63, p < .001$ ), which predicted turnover intention ( $B = 0.24, p < .001$ ). The total effect of stress on turnover

intention was significant ( $B = 0.15, p = .003$ ), but the direct effect became non-significant once exhaustion was added ( $B = 0.002, p = .98$ ). The indirect effect ( $a \times b$ ) was significant, 95% CI [0.055, 0.253] (Table 5, Figure 5).

Table 5. Mediation analysis (Model 4, PROCESS,  $N = 95$ )

| Path                             | B    | SE   | t    | p     | 95% CI (LL – UL) |
|----------------------------------|------|------|------|-------|------------------|
| Stress → Emotional Exhaust.      | .636 | .075 | 8.52 | <.001 | [.49, .79]       |
| EE → Turnover (controlling)      | .241 | .065 | 3.73 | <.001 | [.11, .37]       |
| Stress → Turnover (total)        | .155 | .050 | 3.08 | .003  | [.06, .25]       |
| Stress → Turnover (direct)       | .001 | .062 | .02  | .983  | [-.12, .12]      |
| Indirect effect ( $a \times b$ ) | .154 | .050 | —    | —     | [.055, .253]     |

Note. Indirect effect estimated with 5,000 bootstrapped samples.

Moderated mediation (Model 59) (Figure 7) showed no generational moderation on the stress-exhaustion path ( $p = .71$ ), but significant moderation on the exhaustion-turnover intention path ( $p = .04$ ). Conditional indirect effects were significant for Gen Z and Gen Y, but not Gen X (Table 6, Figure 6).

Table 6. Moderated mediation analysis (Model 59, PROCESS, Generation as moderator)

| Generation | Indirect Effect ( $a \times b$ ) | Boot SE | 95% CI (LL – UL) | Sig. |
|------------|----------------------------------|---------|------------------|------|
| Gen Z      | .24                              | .09     | [.07, .41]       | ✓    |
| Gen Y      | .13                              | .05     | [.04, .23]       | ✓    |
| Gen X      | .02                              | .07     | [-.09, .17]      | ✗    |
| Boomers    | — (n too small)                  | —       | —                | —    |

Note. Indirect effects estimated with 5,000 bootstrapped samples. ✓ = CI does not include 0 (significant); ✗ = CI includes 0 (not significant).

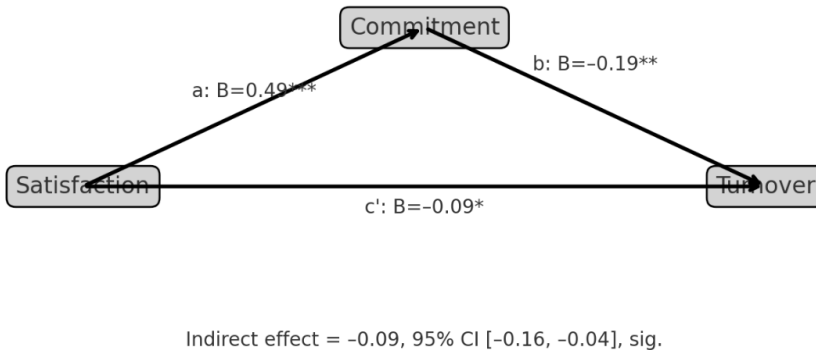


Figure 6. Mediation model (Satisfaction – Affective Commitment - Turnover)

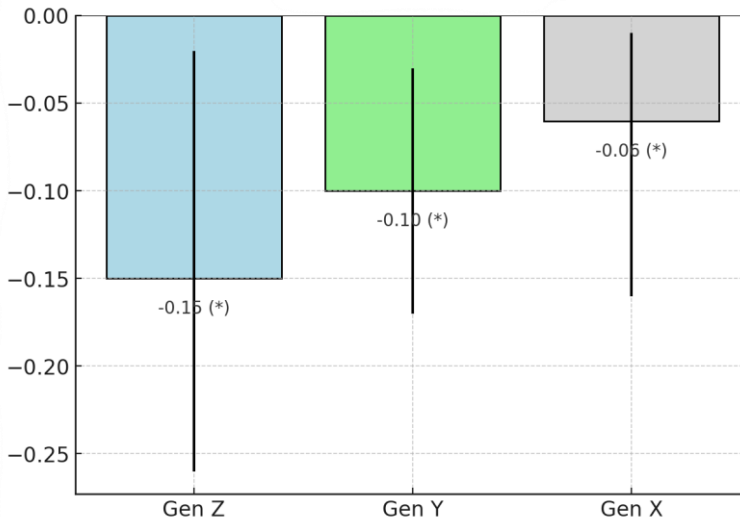


Figure 7. Conditional indirect effects by Generation (Model 59) – (Satisfaction – Affective Commitment – Turnover)

Note: Bars show the size of the mediation effect for Gen Z, Y, and X, with error bars = 95% bootstrap CI.

When age was included as a continuous covariate, the mediation held, and generational moderation remained attenuated on the first stage (stress-exhaustion) but present on the second stage (exhaustion-turnover) for younger cohorts.

Interpretation: H3 is supported as emotional exhaustion fully mediates the link between stress and turnover intention, and this indirect effect is stronger for Gen Z and Gen Y than for Gen X.

**H4:** *Perceived stress is negatively associated with job satisfaction, and this negative relationship is stronger among*

*younger generational groups (Gen Z and Millennials) compared to older groups (Gen X).*

Perceived stress and job satisfaction were significantly negatively correlated,  $r(93) = -.44, p < .001$ . Regression showed that stress predicted lower satisfaction,  $B = -0.56, SE = 0.12, \beta = -.44, t = -4.78, p < .001$ , explaining ~20% of variance.

Adding controls improved the model ( $R^2 = .24$ ): stress remained significant ( $B = -0.63, p < .001$ ). No generational or age moderation effects were significant (all  $p > .50$ ) (Table 7, Figure 8).

Table 7. Hierarchical regression predicting Job Satisfaction

| Predictor  | B    | SE B | $\beta$ | t     | p     |
|--|------|------|---------|-------|-------|
| Step 1 (Controls)                                  |      |      |         |       |       |
| Age  | -.27 | .16  | -.42    | -1.67 | .098  |
| Gender (0 = M, 1 = F)                              | -.55 | 1.76 | -.03    | -0.31 | .757  |
| Generation   | 2.24 | 2.45 | .23     | 0.91  | .364  |
| $R^2 = .06, F = 1.39, p = .241$                    |      |      |         |       |       |
| Step 2 (Add Stress)                                |      |      |         |       |       |
| Stress (PSS-10)                                    | -.63 | .13  | -.50    | -5.05 | <.001 |
| $R^2 = .24, \Delta R^2 = .18, F = 17.89, p = .001$ |      |      |         |       |       |

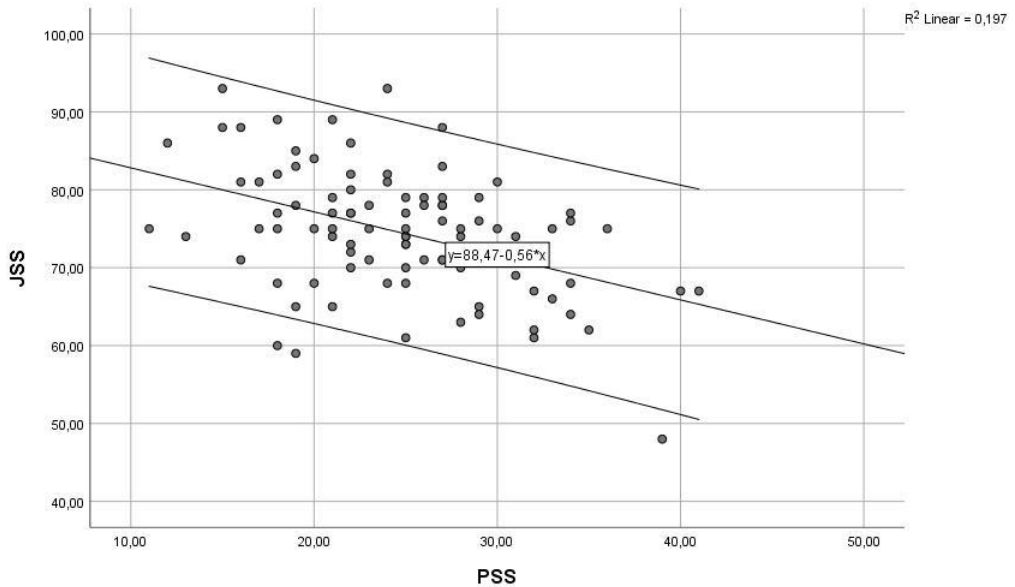


Figure 8. Scatterplot with regression line - perceived stress and job satisfaction

Interpretation: H4 is supported for the main effect but not for the hypothesized generational moderation.

**H5:** *Perceived stress is negatively associated with affective commitment, and this negative relationship is stronger among younger generational groups (Gen Z and Millennials) compared to older groups (Gen X).*

Stress and affective commitment were significantly negatively correlated,  $r(93) = -.38, p < .001$ . Regression showed that stress significantly predicted lower affective commitment,  $B = -.37, SE = .09, \beta = -.38, t = -3.97, p < .001$ .

Controlling for age, gender, and generation produced similar results: stress remained significant ( $B = -.32, p = .002$ ). No Stress  $\times$  Age or Stress  $\times$  Generation interactions were significant (all  $ps > .20$ ) (Table 8, Figure 9).

Table 8. Hierarchical regression predicting Affective Commitment

| Predictor   | <i>B</i> | <i>SE B</i> | $\beta$ | <i>t</i> | <i>p</i> |
|---|----------|-------------|---------|----------|----------|
| <b>Step 1 (Controls)</b>                          |          |             |         |          |          |
| Gender (0 = M, 1 = F)                             | -2.24    | 1.41        | -.15    | -1.59    | .116     |
| Age   | .05      | .13         | .10     | .40      | .692     |
| Generation  | .09      | 1.97        | .01     | .05      | .963     |
| $R^2 = .06, F = 1.39, p = .241$                   |          |             |         |          |          |
| <b>Step 2 (Add Stress)</b>                        |          |             |         |          |          |
| Stress (PSS-10)                                   | -.32     | .10         | -.33    | -3.17    | .002     |
| $R^2 = .18, \Delta R^2 = .12, F = 4.82, p = .002$ |          |             |         |          |          |

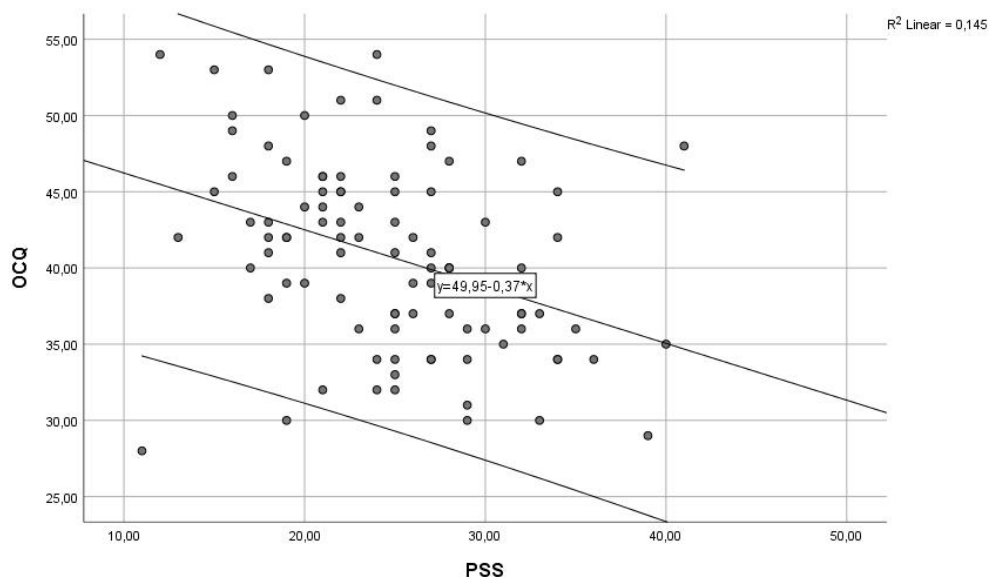


Figure 9. Scatterplot with regression line - perceived stress and affective commitment

Interpretation: H5 is supported for the main effect, since moderation by age or generation was not supported.

**H6:** *Affective commitment mediates the relationship between job satisfaction and turnover intention, and this sequential pathway is expected to hold across generational groups.*

PROCESS Model 4 (Figure 10) indicated significant partial mediation. Job satisfaction predicted affective commitment ( $B = 0.49, p < .001$ ), and commitment predicted turnover intention ( $B = -0.19, p = .001$ ). Both total ( $B = -0.18, p < .001$ ) and direct effects ( $B = -0.09, p = .037$ ) were significant. The indirect effect was significant, 95% CI  $[-0.16, -0.04]$  (Table 9).

Table 9. Mediation analysis (Model 4, PROCESS,  $N = 95$ )

| Path                                    | <i>B</i> | <i>SE</i> | <i>t</i> | <i>p</i> | 95% CI (LL – UL) |
|---|----------|-----------|----------|----------|------------------|
| Satisfaction → Affective Commitment     | .49      | .06       | 8.39     | <.001    | [.37, .61]       |
| Affective Commitment → Turnover (cont.) | -.19     | .06       | -3.32    | .001     | [-.31, -.08]     |
| Satisfaction → Turnover (c)             | -.18     | .03       | -5.49    | <.001    | [-.24, -.12]     |
| Satisfaction → Turnover (c')            | -.09     | .04       | -2.12    | .037     | [-.18, -.01]     |
| Indirect effect (a × b)                 | -.09     | .03       | —        | —        | [-.16, -.04]     |

Note. Indirect effect estimated with 5,000 bootstrapped samples.

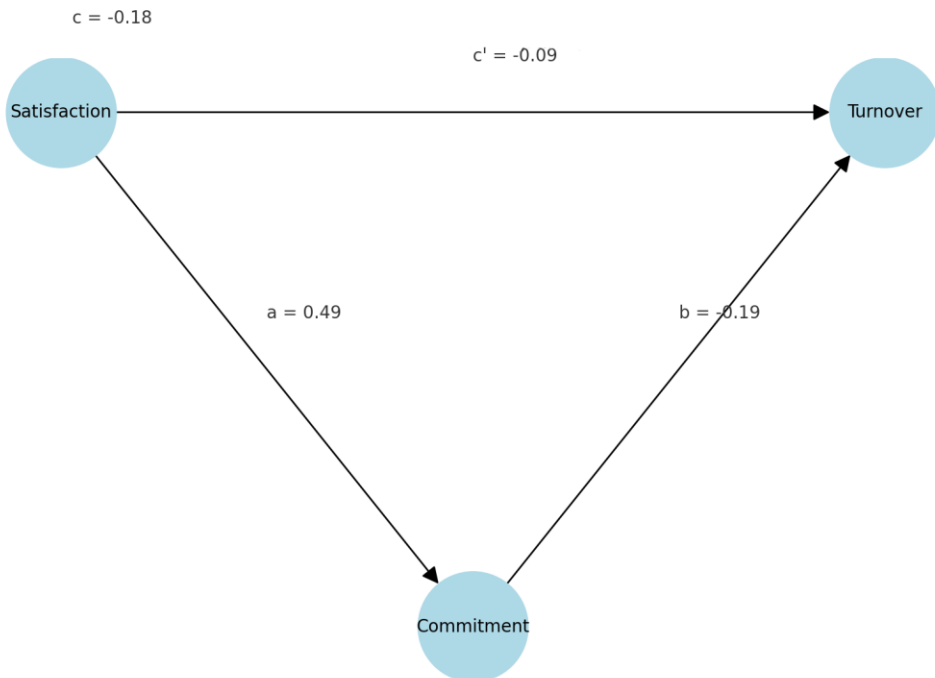


Figure 10. Mediation diagram (Model 4)

Moderated mediation (Model 59) indirect effect was significant for all groups (Figure 11) showed no generational (Gen Z, Gen Y, Gen X) (Table 10). moderation on either the a- or b-paths. The

Table 10. Conditional indirect effects by Generation (Model 59, PROCESS, N = 95)

| Generation | Indirect Effect (a × b) | Boot SE | 95% CI (LL – UL) | Sig. |
|------------|-------------------------|---------|------------------|------|
| Gen Z      | -.15                    | .06     | [-.26, -.02]     | ✓    |
| Gen Y      | -.10                    | .03     | [-.17, -.03]     | ✓    |
| Gen X      | -.06                    | .04     | [-.16, -.01]     | ✓    |
| Boomers    | — (n too small)         | —       | —                | —    |

Note. Effects estimated with 5,000 bootstrapped samples. ✓ = confidence interval does not include 0 (significant).

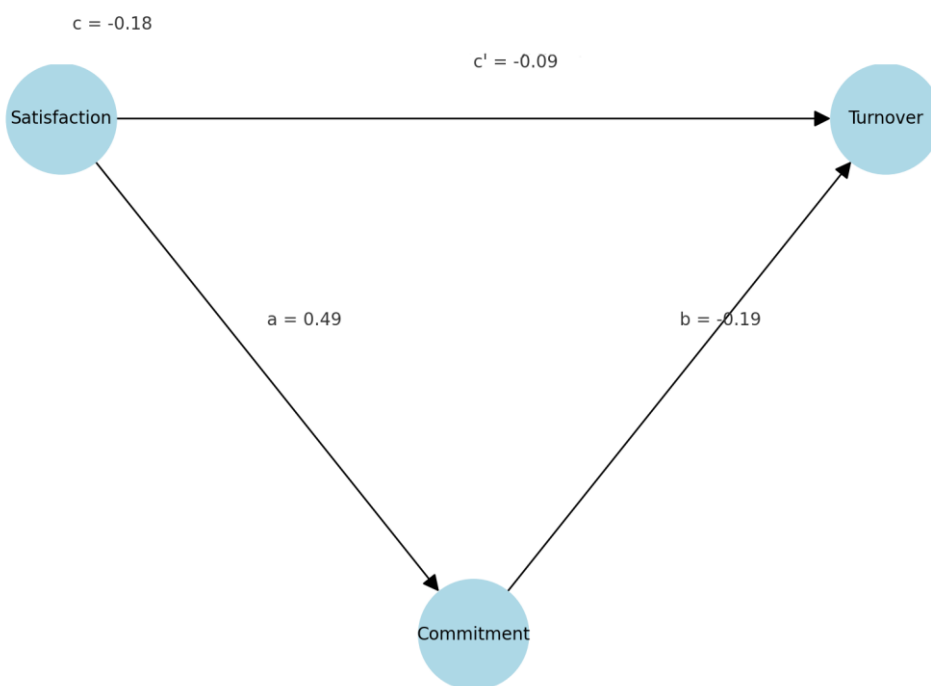


Figure 11. Conditional indirect effects (Model 59) – stress-affective commitment-turnover - by generation, with 95% bootstrap confidence intervals (error bars)

Interpretation: H6 is supported, since affective commitment partially mediates the satisfaction–turnover intention relationship, and this pattern holds consistently across generational groups.

## DISCUSSION AND CONCLUSIONS

### Summary of Main Findings

This study examined how perceived stress relates to emotional exhaustion, job

satisfaction, affective organizational commitment, and turnover intention, and whether these processes vary across age and generational groups in a Romanian industrial engineering company. Grounded in the Job Demands–Resources (JD-R) model (Bakker & Demerouti, 2007) and Conservation of Resources (COR) theory (Hobfoll, 1989), and complemented generational and by lifespan perspectives, we tested a stress–strain–

attitude–turnover sequence using survey data from 95 employees.

Across analyses, higher perceived stress, conceptualized as a subjective appraisal of unpredictability and lack of control (Cohen et al., 1983; Lazarus & Folkman, 1984) was consistently associated with greater emotional exhaustion, lower job satisfaction, lower affective commitment, and higher turnover intention. Emotional exhaustion fully mediated the relationship between perceived stress and turnover intention, and affective commitment partially mediated the link between job satisfaction and turnover intention. These findings align with established evidence that emotional exhaustion is a central mechanism connecting stress to withdrawal intentions (Maslach et al., 2001; Schaufeli & Bakker, 2004).

At the generational level, ANOVA showed that Gen Z reported higher perceived stress than Gen X. However, once age was included as a continuous covariate, generational differences became non-significant, and a negative linear association between age and perceived stress emerged. This echoes critiques that generational effects often reflect age-related developmental processes rather than true cohort effects (Costanza et al., 2012; Lyons & Kuron, 2014; Rudolph et al., 2018).

Overall, the findings suggest that while descriptive generational patterns exist, age rather than generation offers a more parsimonious explanation for variability in stress, strain, job attitudes, and turnover intentions.

### **Theoretical Implications**

This study contributes to theory in three main ways. First, by reinforcing JD-R and COR as the primary explanatory frameworks. The strong stress-exhaustion link confirms JD-R's health impairment pathway (Demerouti et al., 2001) and COR's predictions that perceived resource loss fuels strain and intensifies withdrawal tendencies (Hobfoll, 1989). Emotional exhaustion, a core burnout component (Maslach & Leiter, 2008), fully mediated the relationship between perceived stress and turnover intention, echoing prior findings that exhaustion is one of the strongest

predictors of turnover intentions (Schaufeli & Bakker, 2004; Taris, 2006).

Second, it contributes to theory by clarifying the role of job attitudes in the stress–turnover process. Consistent with meta-analytic evidence (Meyer et al., 2002; Tett & Meyer, 1993), job satisfaction predicted affective commitment, which, in turn, predicted turnover intention. The partial mediation of the satisfaction–turnover link by affective commitment underscores the distinction between evaluative job attitudes and deeper emotional bonds to the organization (Meyer & Allen, 1991). Our results thus reinforce the JD-R/COR argument that strain erodes attitudes, which then shape withdrawal cognitions.

Third, our research contributes to theory by providing a refined, methodologically cautious contribution to the age vs. generation debate. By modeling generation as a categorical predictor while retaining age as a continuous covariate, we followed the approach recommended by Costanza et al. (2012). The finding that perceived stress differences did not persist once age was controlled aligns with critiques that generational research often confounds age, cohort, and career stage (Rudolph et al., 2018). The results support the view that generational categories may describe cohort-mean patterns, but these remain deeply intertwined with age-related developmental trajectories, particularly regarding coping resources, emotional regulation, and perceived control (Baltes, 1987; Scheibe et al., 2015).

Finally, by focusing on a Romanian engineering and automation context, rarely examined in stress or generational research, the study expands evidence from underrepresented Eastern European settings (Marcus et al., 2024).

### **Practical Implications**

A first practical implication is the need to treat perceived stress and emotional exhaustion as key intervention targets. Given their strong associations with turnover intention, organizations should redesign workloads, clarify roles, strengthen supervisor support, and foster recovery opportunities, consistent

with JD-R and COR recommendations (Bakker & Demerouti, 2007; Hobfoll, 1989).

A second practical implication is to prioritize age-sensitive interventions over generational stereotypes. Because age explained perceived stress more consistently than generation, interventions should support early-career employees, who typically have fewer coping resources and higher volatility in career expectations (Lyons & Kuron, 2014). Mentoring, structured onboarding, and developmental feedback may help buffer stress and exhaustion.

Another implication is to strengthen job satisfaction and affective commitment as retention levers. Affective commitment emerged as a key predictor of turnover intention. Organizations should foster fairness, recognition, promotion opportunities, and supportive team climates, factors known to increase satisfaction and commitment (Meyer et al., 2002; Schaufeli & Bakker, 2004).

Last, but not least, HR practitioners should use generational categories cautiously in their practice. Generational narratives may oversimplify and reify stereotypes (e.g., “Gen Z is less resilient”), which can transform into self-fulfilling prophecies. Our results suggest focusing on structural and age-related factors, such as insecurity, skill development needs, and changing work-life boundaries.

### **Limitations and Future Research**

A first limitation of our study is that it focused on a cross-sectional design. Although mediation analyses were theory-driven, causal relations cannot be inferred. Longitudinal and multi-wave designs are necessary to test temporal ordering (Ployhart & Vandenberg, 2010).

A second limitation is the single-company and single-country context. The study took place in one Romanian engineering firm with specific structural characteristics. Although this reduces contextual noise, it limits generalizability. Future research should examine diverse industries and cultural settings. Moreover, the research context implied a limited sample size and uneven cohort representation. The presence of only

two Baby Boomers prevented meaningful generational comparisons. Small subgroup sizes also increase the risk of inflated moderation effects (Aguinis, 1995). Larger and cross-organizational samples are needed.

A third limitation refers to the inherent confounding of age and generation. As emphasized by Costanza et al. (2012), generational membership is defined by age and thus, age and generation cannot be disentangled in cross-sectional data. Our generational effects must therefore be interpreted as cohort-mean patterns that remain intertwined with age.

A fourth limitation refers to the exclusive reliance on self-report data. Although reliabilities were high, shared method variance may have influenced the associations (P. M. Podsakoff et al., 2003). Future studies should incorporate behavioral turnover data, supervisor ratings, and objective stressors.

A final limitation refers to the use of the PSS-10 (general perceived stress). Because the PSS-10 measures general rather than occupational stress (Cohen et al., 1983), interpretations must remain within the domain of perceived stress broadly construed. Future research could compare general and work-specific stress measures.

### **General Conclusions**

This study demonstrates that perceived stress undermines emotional well-being, job satisfaction, affective commitment, and retention-related intentions, with emotional exhaustion playing a critical mediating role. Although cohort-mean differences appeared descriptively, linear age trends offered a more parsimonious explanation for variability in perceived stress and strain. The results caution against over-reliance on generational labels and instead support age-sensitive strategies that build coping resources, role clarity, and supportive leadership environments.

By integrating JD-R and COR with a precise and cautious use of generational theory, and by offering evidence from an under-researched Eastern European industrial context, the study advances understanding of how perceived stress shapes critical employee outcomes in contemporary organizations.

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