Business Management Research and Applications: A Cross Disciplinary Journal

Well–being as a Predictor of Turnover Intention: A Quantitative Study of Occupational Safety and Health Professionals in the U.S.

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ABSTRACT

This quantitative correlational regression study examines the relationship between employee well–being and turnover intention among occupational safety and health (OSH) professionals in the United States. Previous research highlights a decline in well-being and an increase in turnover intention among OSH professionals. This study focuses on how well-being predicts turnover intention, utilizing simple linear regression data analysis from two surveys. Results show a weak to moderate predictive relationship between affective well–being and turnover intention. The sample consists of U.S. OSH professionals, predominantly from the Western region. The findings align with self–determination theory (SDT), suggesting that satisfying basic psychological needs—autonomy, competence, and relatedness—enhances well–being, influencing turnover intention. When individuals experience positive emotional states and their emotional needs are met, they exhibit higher well-being and job satisfaction. This study contributes to understanding the well–being–turnover intention dynamic in the OSH field, offering insights into organizational retention strategies and employee support programs.

Keywords: Affective well–being, autonomy, burnout, competency, job satisfaction, motivation, self–determination theory, relatedness, turnover intention, well–being

Introduction

Poor mental and physical health is linked to employees' intention to quit and voluntary turnover (Akosile & Ekemen, 2022). Since 2019, the turnover rate among occupational safety and health (OSH) professionals has increased (NSC, 2023). Burnout, decreased job satisfaction, diminished organizational commitment, and sub-optimal performance, all associated with poor well–being, can lead to an intention to quit (Davis, 2021). This turnover poses problems for companies, including increased costs, liabilities, lost production, and poor morale (NSC, 2023). This study examines whether well–being predicts OSH professionals' intention to quit.

While the negative impacts of OSH employee turnover are known, there is a lack of research on antecedent variables linked to the intention to quit among this group (Wang & Wang, 2021). Additionally, no studies have examined motivational connections with well-being that might predict turnover intention. This study will use a quantitative approach to establish the theoretical connection between eudaimonic well–being and turnover intention by interpreting individual experiences that might otherwise present confounding variables (Martela & Sheldon, 2019). It will contribute to the body of knowledge by measuring variables otherwise inferred logically.

Employee well–being has been studied under various theoretical frameworks, generally categorized by domains of influence (Heinitz et al., 2018). Martela and Sheldon (2019) found that job–related stressors and unmet human needs are related to poor well–being outcomes such as burnout. A logical approach to measuring well–being includes capturing the complete picture of employee well–being, including subjective aspects related to experiences of autonomy and relatedness.

Deci and Ryan's (2012) self–determination theory suggests that three innate psychological needs—autonomy, relatedness, and competence—contribute to well–being. Martela and Sheldon (2019) expanded the concept of a well–being by including both subjective and eudaimonic aspects. Heinitz et al. (2018) found that an organizational culture promoting self–efficacy and optimism can significantly increase employee well–being.

Research on the link between OSH employee turnover intention and well–being is sparse, creating a gap in the literature (Liu et al., 2018). While some studies have examined the relationship between turnover intention and work-related affective well–being (Van Katwyk et al., 2000; Yan et al., 2021) or intrinsic and extrinsic motivation (Deci, 1971; Deci & Ryan, 2012), there is a lack of research on the role well–being plays in OSH employees' intention to leave their jobs. Understanding how well–being interventions can help reduce burnout and turnover intention while improving workplace safety and health performance is crucial (Schwatka et al., 2022; Smith et al., 2020).

OSH employees are essential for ensuring a safe and healthy work environment (Stout & Linn, 2002). Organizations should focus on strategies that support OSH employees' well–being (Board on Health Sciences Policy Institute of Medicine, 2000). Studies indicate a relationship between well–being and emotional responses such as organizational commitment, job satisfaction, burnout, and turnover intention among OSH employees (Liu et al., 2018, 2019; Rifin & Danaee, 2022). Strategies like Total Worker Health (Schwatka et al., 2022), the inclusive talent development model (Fang et al., 2020), and positive organizational behavior (POB) (Guslina, 2023) influence employee well–being and reduce turnover intention. Thus, studying aspects of well–being in a predictive manner might clarify antecedents of intention to quit.

Occupational safety and health (OSH) professionals are experiencing diminished well–being, influenced by factors such as autonomy, competency, and relatedness, which in turn leads to increased turnover intention (Wang & Wang, 2021). From 2020 to 2022, the turnover rate for OSH employees rose from 30% to 41% (Ferguson, 2022), significantly impacting organizational costs related to recruitment,

onboarding, and training (Lauby, 2016). Voluntary turnover, a growing challenge for businesses, is directly predicted by turnover intention (Yan et al., 2021).

This turnover introduces administrative disruptions and increases the workload on other departments (Ferguson, 2022). Cultural generational shifts have also been linked to higher employee turnover (Fang et al., 2020). Poor employee well–being, associated with burnout, emotional exhaustion, and social loafing, contributes to the intention to quit (Wang & Wang, 2021). Job burnout negatively affects job satisfaction, employee engagement, and performance and is positively related to voluntary turnover (Liu et al., 2018).

The OSH field is inherently stressful, with job demands exacerbating stress levels (Board on Health Sciences Policy [BHSP], 2000). Stressors in this field include long working hours, ethical conflicts, lack of personal accomplishment, and work-life balance issues, all contributing to increased turnover intention (Corso et al., 2019). These stressors vary across different sectors within the OSH field, including private and public sectors and specific areas such as general industry, construction, enforcement, and consultative roles (BHSP, 2000).

This quantitative correlational regression study examines the relationship between employee well–being and turnover intention among OSH professionals in the United States. Well–being, the independent variable, is the degree to which human needs are met (Martela & Sheldon, 2019) and will be measured using Paul Spector's General Affective Well-being Survey (Van Katwyk et al., 2000). The dependent variable, turnover intention, ranges from the thought of leaving to the initial actions of voluntarily exiting a position and will be measured with Paul Spector's (1982) Turnover Intention Survey. The study population includes safety specialists and technicians, safety managers, and industrial hygienists currently working in the OSH field in the United States. Participants were identified through LinkedIn and Facebook, utilizing professional associations such as the American Society of Safety Professionals (ASSP) and the American Industrial Hygiene Association (AIHA). The research question and corresponding hypotheses that framed this study were:

R.Q.: To what extent does employee well–being predict the turnover intention of occupational safety and health professionals?

Ho: Employee well–being does not predict the turnover intention of occupational safety and health professionals.

Ha: Employee well–being predicts the turnover intention of occupational safety and health professionals.

The theoretical framework for this study is the self–self-determination theory (SDT), created by Edward Deci and Richard Ryan in 1977, which was a derivative product of Deci's 1971 paper in which the authors examined motivations in conjunction with intrinsic and extrinsic rewards (O'Hara, 2017). Self-determination theory offers some explanation of measurable behavioral outcomes by examining antecedents of motivation. This theory provides a framework for understanding the relationships between people and their environment, their experiences of well–being, and their motivation, all of which are directly associated with positive attributes of organizational commitment (Akosile & Ekemen, 2022).

Literature Review

The various theories and variables related to well–being and turnover intention present complexities for research on this topic. Well–being has deep historical roots, dating back to ancient Greek philosophers. Crisp (2002) noted that Aristotle viewed well–being and friendship as mutually non–exclusive, stating that "a friend is a second self" or, in other words, another with reflective values (p. 133). Furthermore, the text of necomachean ethics explains that values are a core tenant of virtuous existence. A mid–20th–century take on Aristotilianism and objectivism posits that virtuous actions are linked to an individual's well–being through independent thinking and self–esteem (Rand, 1964). Deci and Ryan (2012) contemporarily argued that well–being is enhanced when the human needs of autonomy,

competency, and addition of relatedness are met. Aristotle's virtue characteristics historically align with these well–being components (Anderson & Fowers, 2019).

Extensive research has explored workers' well–being and associated factors. Rifin and Danaee's (2022) study found burnout among medical researchers significantly associated with diminished well–being and increased intention to leave. Research by Smith et al. (2020) and Schwatka et al. (2022) highlighted the importance of promoting well–being in occupational health and safety. Despite these advancements, NIOSH has faced challenges in applying these concepts due to the heterogeneity of factors surrounding wellness (Anger et al., 2019).

Motivational theory, rooted in organizational studies, has expanded our understanding of well–being. Maslow's hierarchy of needs (1943) proposes a hierarchical fulfillment of physiological, safety, belongingness, esteem, and self–actualization needs. Despite its influence, criticisms of its universal applicability suggest the need for further empirical research (Yurdakul & Arar, 2023). Discrepancy theory, introduced by Hackman (1980), posits that job satisfaction arises from aligning expectations with actual outcomes. Discrepancies lead to dissatisfaction, emphasizing the need for further empirical examination in different contexts (Jiang et al., 2012).

Locke's (1978) theory of job satisfaction builds on discrepancy theory, proposing that satisfaction depends on meeting or exceeding expectations. Some critics argue that Locke's (1978) theory of job satisfaction neglects specific job characteristics and emotional aspects (Tietjen & Myers, 1998). These theories converge on well-being, suggesting that fulfilling needs, aligning expectations, and meeting outcomes are crucial for well–being. Modern approaches like job demands-resources (JDR) theory, conservation of resources (COR) theory, and self–determination theory (SDT) offer precise means of quantitatively assessing worker well–being.

Poor employee well–being significantly impacts organizations, leading to increased turnover intentions, reduced job performance, and increased workplace accidents (Liu et al., 2018; Rifin & Danaee, 2022). Modern theoretical approaches like JDR, COR, and SDT emphasize providing necessary resources, support, and autonomy to foster well–being and job satisfaction (Bakker & Demerouti, 2014; Heinitz et al., 2018).

JDR theory identifies job demands and resources, suggesting that balancing these can reduce stress and enhance motivation (Bakker & Demerouti, 2014). COR theory emphasizes preserving and acquiring resources to cope with job demands (Hobfoll et al., 1992). SDT highlights the fulfillment of autonomy, competence, and relatedness needs for well-being and motivation (Deci & Ryan, 2012; Šakan et al., 2020).

Hobfoll's (1989) COR theory focuses on acquiring and preserving resources, with resource availability and loss significantly impacting well–being. Research shows that supportive leadership and coworker support mitigate the adverse effects of job demands, whereas the loss of resources leads to decreased well–being (Bakker & Demerouti, 2007; Hobfoll et al., 2018). COR theory recognizes the spillover effect, where resource loss in one domain affects other life areas. Applying COR theory in organizations involves promoting resource gain and minimizing resource loss through effective job design, workload management, and supportive organizational culture (Bakker et al., 2023).

Based on COR theory, the JD–R model explains the relationship between job characteristics, well–being, and performance (Bakker & Demerouti, 2007). Job demands require sustained effort and can lead to strain or burnout, while job resources help achieve work goals and reduce demands (Bakker et al., 2023). The JD–R model proposes two processes: the health impairment process, where high demands and low resources lead to strain, and the motivation process, where high resources and low demands foster positive outcomes. Research consistently shows that high demands increase burnout, while resources enhance engagement, well–being, and job satisfaction (Wu et al., 2019). The JD–R model has been validated in various contexts, including teaching, healthcare, and telework during the COVID–19 pandemic, highlighting its relevance in understanding well–being and performance (Dolce et al., 2020; Jyoti & Rani, 2019; Meyer et al., 2021).

SDT, developed by Deci and Ryan, posits that fulfilling the needs of autonomy, competence, and relatedness enhances well–being and motivation (Ryan & Deci, 2012). Research shows that supportive work environments increase intrinsic motivation and employee engagement (Gagné & Deci, 2005). Burnout is influenced by motivational factors, with studies showing that unmet psychological needs lead to higher burnout rates (Wu et al., 2019). Addressing these needs can mitigate burnout and promote well–being (Heinitz et al., 2018).

In the context of employee well–being, SDT has been applied to understand the relationship between motivation, turnover intention, and burnout (Teixeira et al., 2020). Research by Gagné and Deci (2005) found that when employees perceive their work environment as supportive of autonomy, competence, and relatedness, they experience higher levels of intrinsic motivation and employee engagement.

Concerning the building blocks of SDT, Akosile and Ekemen (2022) examined the impact of core self–evaluations (an individual's fundamental beliefs about themselves) on job satisfaction and turnover intention among academic staff in higher education. They found that intrinsic and extrinsic motivation mediated the relationship between core self–evaluations and turnover intention, resulting in a connection between values and the antecedents of optimal well–being. SDT and basic needs being met have been further supported in a meta-study, including 44 quantitative studies, finding that optimizing self–determined motivation and need satisfaction to enhance well–being further impacts work outcomes (Nunes et al., 2023).

This study uses a quantitative methodology to examine the relationship between turnover intention and well–being among OSH professionals. SDT, emphasizing autonomy, competence, and relatedness, serves as the framework (Lubbadeh, 2020). Simple linear regression analysis, a statistical technique for examining predictive relationships, was conducted on collected data to determine whether well–being predicts turnover intention. Surveys were used to collect data. The independent variable, well–being, was measured using Paul Spector's (2021) General Affective Well–Being Scale (GAWS), while the turnover intention was measured using Michaels and Spector's (1982) Three–Item Turnover Intention Scale. The GAWS assesses subjective well–being and emotional experiences, aligning with SDT principles (Van Katwyk et al., 2000). The Turnover Intention Scale captures employees' thoughts and plans about leaving their organization. Both instruments are reliable and valid for measuring the target population's well–being and turnover intention (Spector & Jex, 1991).

Motivation and human capacity theories have advanced our understanding of employee performance and behavioral variables. COR, JD–R, and SDT theories emphasize psychological needs and well–being, with factors like job satisfaction, emotional exhaustion, and burnout linked to subjective well–being. Applying these theories in organizations can enhance employee well–being, reduce turnover intentions, and create positive work environments. A linear regression analysis was used to investigate the relationship between well–being and turnover intention. The GAWS and Turnover Intention Scale are appropriate instruments for measuring these variables in OSH professionals.

Methods

This correlational study examines the relationship between turnover intentions and the well–being of occupational safety and health (OSH) employees. This study aimed to determine relational qualities between employee well–being (the independent variable) and turnover intention (the dependent variable). For this study, employee well-being is aligned with the self-determination theory (SDT) and is characterized by optimizing autonomy, competency, and relatedness (Deci & Ryan, 2012). Paul Spector's (2021) General Affective Well–Being Scale (GAWS) was used to measure positive and negative affective factors that OSH professionals experience. The Michaels and Spector (1982) Turnover Intention Scale measured turnover intention. A regression research design was established to ascertain the predictability of the relationship between the independent variable (IV) and dependent variable (DV). The instrument

used to measure the dependent variable is Paul Spector's Turnover Intention Survey (Spector, 1982). The survey contains three items and measures a person's thoughts and actions, spanning from the consideration of a transition to their final steps of job transition. Each item is rated using a 6–6-point Likert scale from 1 (Strongly Disagree) to 6 (Strongly Agree). The independent variable is well–being, which was measured using the Paul Spector General Affective Well–Being Survey (GAWS). This survey measures positive and negative emotional responses (i.e., autonomy, competence, and relatedness) and contains 20 items rated on a 5–5-point Likert–type scale from 1 (Never) to 5 (Every day). The surveys are presented in Appendix A.

Respondents in this study were those who worked in the safety and health field, commonly under the titles of safety professional or industrial hygienist. The target population was comprised of management or technicians within their respective trades. The study's results may be utilized by businesses to aid in retaining OSH employees, thereby reducing operational losses. Additional demographic data was collected for descriptive statistics and potential inferences that may lead to future studies. These data points include age, U.S. region, gender, and experience (years). The survey was compiled in Survey Monkey in compliance with the instrumentation requirements. Alternative findings, such as the number of discrepancies in data, such as, but not limited to outliers or inconsistencies in reporting, are reported.

Purposive sampling was used to identify research participants using social media groups like LinkedIn and Facebook and through industry professional associations such as the American Society of Safety Professionals (ASSP) and the American Industrial Hygiene Association (AIHA). Qualifying respondents were provided with the link to a survey on the SurveyMonkey website. Outreach also occurred in person through speaking engagements at professional conferences. A quick response Q.R. code system was utilized for candidates to access the survey.

The survey began with informed consent, which elaborated on protecting personal data. The information gathered consisted of basic demographic details while precluding identification or place of work. Once the data was collected from Survey Monkey, it was exported into R Commander for analysis. The required sample size was determined using G*Power Software to avoid type I and II errors. Type I error occurs when the null hypothesis is wrongfully rejected, and a type II error happens when the null hypothesis is erroneously not rejected (Senn, 2021). The calculations are based on the inputs of one independent variable (well–being) and one dependent variable (turnover intention). Input parameters within the software include hypothesis testing, effect size, and power. Since the purpose of the study is to reject or fail to reject the null hypothesis, a two-tailed test was selected (Senn, 2021). Effect size refers to the magnitude and direction of the relationship between variables in a linear regression model with log-transformed variables and is represented as Cohen's (f^2). For this study, the sample size was calculated with a medium Cohen's effect size (f^2=0.15), which allows a researcher to evaluate the significance of an association under moderate conditions. The selection and implementation of effect size mitigates the potential for type II errors (Sullivan & Feinn, 2012). A sample size of 60 was needed with a medium effect size of Cohen's (f^2=0.15), $\alpha = .05$, and $\beta = 0.8$.

The GAWS is a transformed version of the JAWS and shares its reputation (Van Katwyk et al., 2000). Questions are identical in intent, and scoring is equivalent. Van Katwyk et al. (2000) publication demonstrated that measuring emotional states yields accurate results in repetition. The usefulness of the JAWS survey is supported by its utilization in two studies on character strengths (Weziak–Bialowolska et al., 2021) and work-related positive effects (Armon et al., 2014). These studies support the validity and reliability of the survey in assessing constructs related to health, well–being, and work outcomes. The GAWS was selected for this study because of the robust findings and reliability among diverse participants.

The GAWS uses a five-point scale. The scale has specific time anchors that can be adjusted based on the assessed timeframe. The options for the response scale are: (1) never, (2) once or twice, (3) once or twice per month, (4) once or twice per week, or (5) every day (Van Katwyk et al., 2000). The GAWS covers a wide range of negative and positive emotional experiences. These emotions can be categorized

into four subtopics or subscales, which fall along two dimensions: pleasurableness (negative vs positive emotion) and arousal (low vs high intensity).

The Michaels and Spector (1982) Turnover Intention Scale is an effective tool in gauging the prediction towards voluntary turnover of employees (Spector, 1991). The instrument has a good reputation, as demonstrated through a meta-analysis of the relationship between unemployment, job satisfaction, and employee turnover (Carsten & Spector, 1987). Obeng et al. (2021) further recognized the effectiveness of measuring turnover intention related to employee experience variables. The Turnover Intention Scale has shown significant results relating to workplace psychological constructs (Batura et al., 2016).

Research Question and Hypotheses

RQ1: To what extent does employee well–being predict the turnover intention of occupational safety and health professionals?

H1o: Employee well–being does not predict the turnover intention of occupational safety and health professionals.

H1a: Employee well–being predicts the turnover intention of occupational safety and health professionals.

Validity and Reliability

Validity determines how well a measurement tool captures the construct it is intended to measure (Creswell, 2014). It encompasses both internal and external components. Internal validity concerns establishing a causal relationship within the study's context and ensuring correct inference about causation (Duckett, 2021). External validity pertains to the generalizability of the study's findings across various settings or populations (Bo & Galiani, 2021).

Ensuring Internal and External Validity

This study reinforced internal validity through precise definitions of well–being and turnover intention, uniform data collection processes, including pertinent demographic controls, and timing of the data collection to factor in temporal dynamics. External validity was enhanced by selecting a diverse sample of OSH professionals and structuring the study to allow precise, relatable participant interactions.

Instrument–Specific Validity

Prior research has validated the General Affective Well-being scale (GAWS). The GAWS demonstrates robust construct, convergent, and discriminant validity, making it suitable for assessing the positive and negative emotional states proposed by the self–determination theory (Van Katwyk et al., 2000). Similarly, the Turnover Intention Scale's validity is well established, effectively measuring the cognitions associated with voluntary job turnover. It exhibits strong face and content validity, consistently capturing essential turnover intention elements across studies (Carsten & Spector, 1987; Michaels & Spector, 1982).

Validation Metrics

Validation of these tools is reflected in their application and supported by empirical evidence, as shown in Table 1, detailing the correlation (r2) and Cronbach's alpha values, affirming reliability and validity (Van Katwyk et al., 2000).

Table 1

Instrument Validity and Reliability Coefficients

Variables	Affect variable r^2	Coefficient α
GAWS	–.6***	.89
Quit		0.77

Specific note. ***p<.001. Turnover intention is represented as "quit."

Reliability is the consistency and stability of a measurement instrument (Creswell, 2014). Internal consistency reliability can be assessed using Cronbach's alpha. Van Katwyk et al. (2000) reported that the survey produced reliable findings (Cronbach's alpha =0.89). Basińska et al. (2014) indicated that the GAWS reported a satisfactory Cronbach's alpha value, indicating high internal consistency among both scaled versions. Similarly, the Turnover Intention Scale has also demonstrated good reliability, though not reported in the seminal research (Michaels & Spector, 1982; Spector et al., 1988). A study by Hu et al. (2022) identified a derivative instrument as having acceptable conditions of construct reliability (Cronbach's alpha = 0.77), content correlative validity (.68), and a high degree of internal reliability (Cronbach's alpha = 0.83).

Two strategies were implemented to ensure the reliability and validity of the data collected in this study. First, the survey instruments were administered consistently and standardized, ensuring all participants received the same questions. This helped minimize potential measurement bias and increase the reliability of the data. Second, the participants were selected using a purposive sampling strategy to include individuals with relevant experience and knowledge related to the research topic. This enhanced the credibility and transferability of the findings because the participants shared similar work experiences.

Data Collection and Analysis

Data for this study were gathered using SurveyMonkey, adhering to established survey integrity and layout guidelines. The survey was launched upon the approval of the Columbia Southern University Institutional Review Board. SurveyMonkey's contingency offerings, such as Market Research Solutions for inadequate responses, were prepped but ultimately not used.

Participant Recruitment and Survey Implementation

Target OSH professionals were identified via LinkedIn and professional groups, with permissions coordinated through direct communications with organizational leaders. A requisite sample of at least 55 participants was confirmed before survey distribution, ensuring a representative demographic and geographic spread. Participants engaged with the survey via a secure link, initiating an informed consent notice that underscored the voluntary nature of participation, confidentiality, and data protection measures.

Data Management and Security

SurveyMonkey automatically organized and monitored responses collected until the study's conclusion, excluding any incomplete submissions from the analysis. The data were then exported to Microsoft Excel for preliminary cleaning and subsequently to R Commander for detailed analysis.

Measures to maintain data confidentiality included password–protected and encrypted files and stripping datasets of direct identifiers like IP addresses to ensure participant anonymity.

Ethical Adherence and Data Retention

In keeping with the Belmont Report's ethical guidelines, data collection was conducted with utmost respect for participant rights, ensuring informed consent and provisions for withdrawal without detriment. Data security protocols were rigorously followed, with all information securely stored on controlled-access cloud systems. Per Spector's (2022) requirements, data is retained for three years post-study before secure eradication, except for essential aggregated data maintained for analysis continuity.

Coding

Coding for the delivered instrumentation aligned with specific guidelines, establishing a standardized system to capture and categorize participant responses efficiently. SurveyMonkey was utilized to assign numerical codes or labels to responses, and participants were given I.D. numbers to facilitate data removal requests if needed. According to Van Katwyk et al. (2000), scoring the General Affective Well–being Scale (GAWS) involved numerically coding responses from 1 to 5, reversing codes for negative emotions for accurate affect measurement, and handling missing items by either averaging or substituting central values. Scoring could aggregate all items or differentiate between positive and negative responses across subscales of positive and negative arousal states. The three-item Turnover Intention Scale by Michaels and Spector (1982) uses a nominal scale to gauge intentions of leaving current employment quickly, with no specific coding requirements due to its straightforward design. Both instruments, including their scoring guidelines, are available from author Paul Spector.

Reliability Analysis

Following the data summaries, a further analysis of the data's reliability was performed. In this study, measuring reliability is crucial to ensure the collected data's consistency and accuracy (García–Lirios et al., 2022). It indicates the stability and dependability of the measurements and ensures an assessment of the degree of measured error present in the data.

Reliability was measured with Cronbach's alpha, one of the most common methods (Amirrudin et al., 2021). Cronbach's alpha calculates the internal consistency reliability of a set of items or variables by assessing the degree to which they correlate. The formula for calculating Cronbach's alpha coefficient ($\alpha = (k / (k – 1)) * [1 – (\Sigma\sigma^2 i / \sigma^2 X)]$) was utilized, yielding coefficient scores of .91 (GAWS) and .89 (T.I.).

Outlier Identification and Examination

Outlier identification and examination in a study can be conducted using various techniques, including box plots, quantile–qualile plotting (Q.Q. plots), and residual analysis (Uba et al., 2021). Box plots provide a visual representation of the distribution of the data, allowing for the identification of extreme values as points located outside the whiskers of the plot. Q.Q. Plots compare data quantiles against expected quantiles from a theoretical distribution, enabling the detection of deviations from normality and potential outliers. All calculations were performed in the R Commander program.

Test of Normality

Regression analysis allows the researcher to demonstrate the relationship between independent and dependent variables by estimating the independent variables' coefficients for their statistical significance (Rajalaxmi et al., 2019). Contrary to common belief, normality tests on the broad dataset are

unnecessary, as the focus should be on the residuals' distribution rather than the independent variables (Knief & Forstmeier, 2021). Residuals representing differences between observed and predicted values should ideally follow a normal distribution, confirming the regression model's assumptions (Godfrey, 2019). Deviations in this distribution, such as issues with homoscedasticity, would require adjustments to the model. In linear regression, a "best–fit" line is calculated to minimize the squared differences between the observed data and the predicted outcomes (Lee, 2022), where the slope coefficient indicates the unit change in the dependent variable to the independent variable. The intercept represents the anticipated value of the dependent variable when the independent variables are zero.

The regression line is determined by calculating the slope coefficient (β_1) and the intercept term (β_0) (Godfrey, 2019). The slope coefficient is computed ($\beta_1 = \Sigma((x_i - \bar{x})(y_i - \bar{y})) / \Sigma((x_i - \bar{x})^2)$) and signifies the rate or extent of change in the dependent variable per unit change in the independent variable. The intercept term is derived by subtracting the product of the slope coefficient and the mean of the independent variable from the mean of the dependent variable ($\beta_0 = \bar{y} - \beta_1\bar{x}$). Computation of these factors was done in R Commander. The software further calculated the reportable F–statistic and R^2 value [(F=mean square regression (MSR) / mean square regression (MSE)); (R^2 = regression sums of squares (SSR) / total sums of squares (SST))] as a primary relationship indication. Additional statistical measures were considered to assess the measured relationship and conduct a hypothesis test on the regression coefficient in the regression analysis. This included determining the t–t–score, degrees of freedom, and the p-value. The t–t–score is calculated by dividing the estimated coefficient by its standard error. Degrees of freedom are obtained by subtracting the number of predictors from the sample size minus one. Finally, the p–p–value is obtained by comparing the calculated t–t–score to the critical t–t–value from the t–t–distribution table at a specified significance level. If the p-value is less than the chosen significance level ($p<0.05$), the null hypothesis is rejected; otherwise, it will fail to be rejected. The formulas for the t are $t = (\beta_1 - \hat{\beta}_1) / se(\beta_1)$, $df = n - k - 1$. Calculations for statistical values were performed in the R Commander program.

Last, the Breusch–Pagan test for heteroscedasticity (homoscedasticity) and variance inflation factor (VIF) analysis was conducted in R Commander. According to Đalić and Terzić (2021), homoscedasticity refers to the assumption in regression analysis that the variability of the residuals is constant across different independent variable levels, indicating equal variance. Multicollinearity is a high correlation between independent variables in a regression model, which can lead to issues in the estimation and relational interpretation of the coefficients.

Results and Discussion

This data set reflects the results of 90 individual responses to the employee well–being (IV) and turnover intention (DV) surveys. In total, 95 surveys were distributed, of which 90 were valid, yielding a response rate of 94.7%. Upon careful examination of each survey, five were excluded because the respondents had not answered all the questions or were disqualified. Accordingly, a subset of 90 surveys was considered for this analysis. R and R Commander software were used for descriptive statistical analysis and outlier analysis. A post–hoc analysis of the sample power was calculated at 0.94.

Cronbach's alpha (α) assesses the extent to which test items are internally consistent or interconnected. The potential range of this measure is from zero to one. All dimensions and sub-dimensions displayed satisfactory internal reliability (with a Cronbach α value equal to or greater than 0.70) (Tavakol & Dennick, 2011). A numeric summary breakdown of the target well–being variables, including positive and negative emotions and turnover intention, was performed. In this case, turnover intention stands as the dependent variable. This included standard deviation (S.D.) measurements, skew, and kurtosis with accompanying count. The mean score for the well–being variable was 68.6, with a standard deviation of 13.9, a skewness of –0.34, and a kurtosis of –1.35, based on a sample of 90 participants. Similarly, the mean score for the turnover intention variable was 3.1, with a standard

deviation of 1.72, a skewness of 0.29, and a kurtosis of –0.87, based on a sample of 90 participants. These results suggest that both categories are normally distributed.

Table 2

Numeric Summaries of the well–being and Turnover intention (T.I.) variables

	M	SD	Skew	Kurt	*n*
Well–being	68.6	13.9	–0.34	–1.35	90
TI	3.1	1.72	0.29	–0.87	90

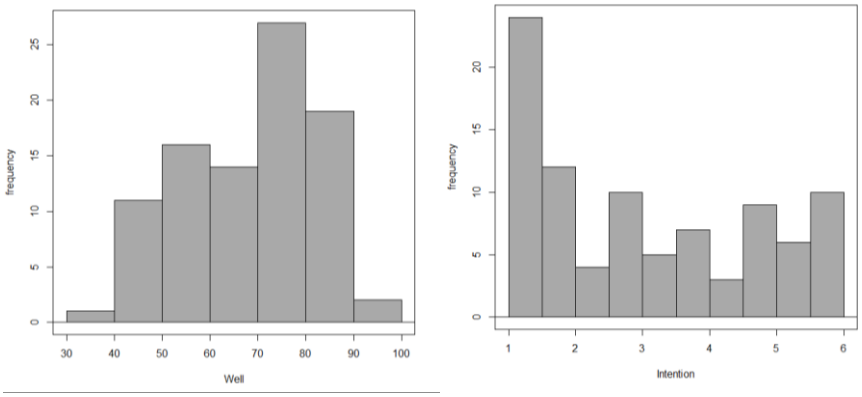
Note. The total for the GAWS is calculated in reverse coding (R.C.).

Exploratory Data Analysis

The subsequent step involved reviewing each variable for any potential outliers and determining the distribution of each variable by subjecting it to standard tests for normal distribution. These tests include histograms, boxplots, and Q–Q plotting. Figure 1 illustrates the distribution of data for the well–being and turnover intention variables. The boxplots showing no outliers are presented in Figure 2, and Q–Q plots indicating normal distribution are presented in Figure 3.

Figure 1

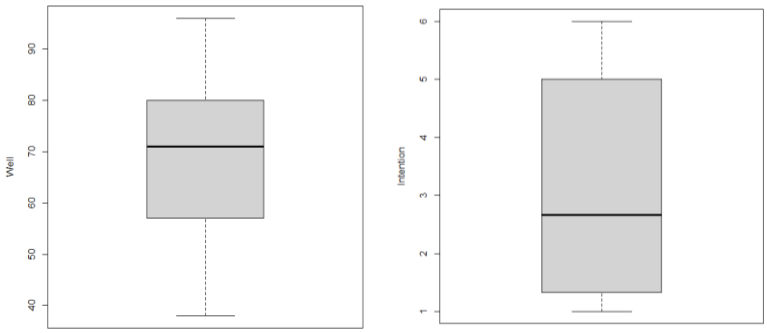
Graphical Summaries of Data Distribution for the Well–being and Turnover Intention Variables



Note. Data appears normally distributed.

Figure 2

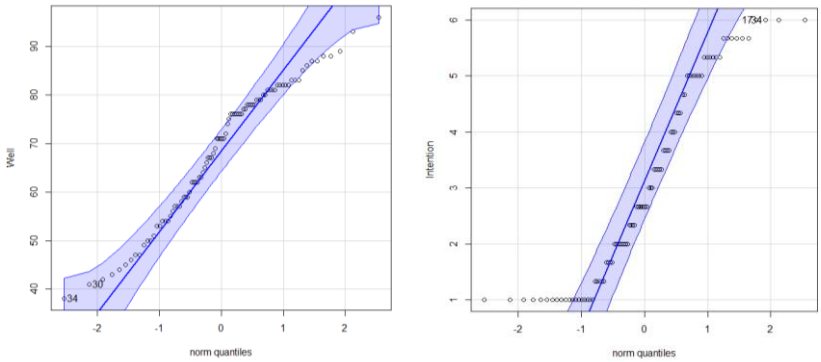
Boxplots of the Well–being and Turnover Intention Variables



Note. The Boxplot of the variables shows no outliers.

Figure 3

Q–Q Plotting of the Well–being and Turnover Intent Variables

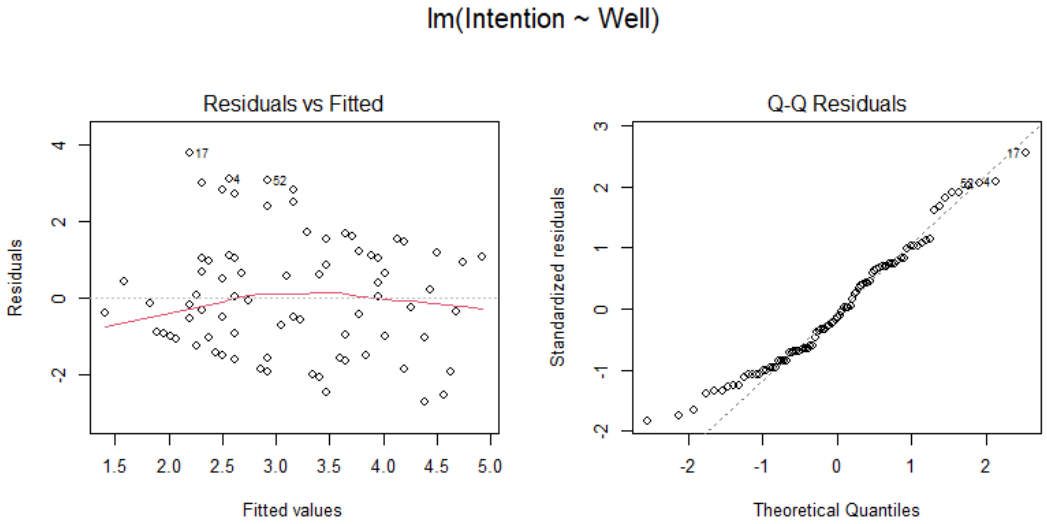


Note. Frequency scores for the well–being and turnover intent variable. Data within the shaded area is within the 95% confidence interval (p>0.05) and is considered normally distributed.

A simple regression analysis examined whether a person's job satisfaction predicts their organizational commitment. The results of the test were significant: $F(28.04, 88) = 29.92$, $p = < 0.001$, $R^2 = 0.24$). This can be interpreted as 24% of the change in turnover intention being attributable to a person's affective well–being, indicating weak to moderate predictability. The Breusch–Pagan test is used to examine if the variances of the error terms in a regression model are constant or vary across different levels of independent variables, otherwise referred to as heteroscedasticity (Astivia & Zumbo, 2019). It involves regressing the squared residuals from the original regression onto the independent variables. If the coefficients of this auxiliary regression are statistically significant, it suggests the presence of heteroscedasticity. Homoscedasticity refers to the assumption in a regression analysis where the variances of the error terms are constant across all levels of the independent variables. At the same time, heteroscedasticity indicates that error term variances vary across independent variables. The Breusch–Pagan test helps researchers determine if their regression model violates the assumption of constant variances and enables them to make appropriate adjustments. Figure 4 illustrates that the residuals do not show problematic patterns, while Q.Q. Plotting indicates acceptable heteroscedasticity. Table 3 shows that the data was found to be homoscedastic.

Figure 4

Residual Analysis of Dependent and Independent Variables



Note. Residuals vs. fitted indicate no pattern, while Q–Q plotting indicates normal distribution.

Table 3

Breusch–Pegan Test for Homoscedasticity

Variables	***p–value***	**B.P.**
Well–being (IV)	0.83	0.04
TI (DV)		

Note. Where applicable, each numerical value is rounded to the second decimal place.

The Breusch–Pegan test results show a *p-value* greater than 0.05, indicating that the data is homoscedastic.

Recommendations and Conclusions

The analysis of online survey data shows a weak to moderate predictive relationship (r^2=0.24) between affective well–being and turnover intention, aligning with Deci and Ryan's (2012) self–self-determination theory (SDT) that emphasizes autonomy, competence, and relatedness. Low pleasure and low arousal emotions (e.g., boredom and discouragement) are strongly associated with quitting. Emotional exhaustion and cultural factors also influence turnover intentions, with men experiencing higher burnout due to less emotional communication. Turnover intention is linked to job satisfaction, autonomy, and other factors, suggesting the need for comprehensive evaluation in future studies.

The findings highlight the importance of emotional well–being in predicting turnover intention and suggest that improving affective well–being through targeted interventions can reduce turnover rates. To mitigate negative emotions and support employee retention, business leaders should enhance job satisfaction, promote autonomy, and foster positive work environments. Future research should explore mediating factors, cultural influences, and longitudinal impacts to deepen understanding of these dynamics.

Notably, this study measured well-being in terms of affectation of emotional response. Under SDT, well–being is emphasized by eudemonic qualities; however, the physical characteristics of vitality are also interconnected (Ryan & Frederick, 1997). This study focused on the affective state of well–being,

which refers to an individual's emotional experiences and positive affect, which, Deci and Ryan (2012) explain, can serve as a reliable indicator of overall well–being, without the need to measure aspects of physical vitality directly. However, it should be noted that physical vitality is associated with emotional states; thus, it is crucial to acknowledge this as a potential study limitation.

According to self-determination theory (SDT), the theoretical implications of these findings are significant. SDT posits that psychological well–being is influenced by the satisfaction of three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2012). In this study, affective well–being, which encompasses emotional experiences, both positive and negative, was found to have a moderately predictive relationship with turnover intention. This finding fits with SDT because it suggests that when individuals experience positive emotions and meet their emotional needs, they are more likely to have higher levels of well-being, job satisfaction, and autonomy. Furthermore, these findings imply that aspects of competency and relatedness are interconnected with arousal states of emotion.

The study found that low–pleasure and low–arousal emotions, such as boredom, discouragement, and depression, were more strongly associated with turnover intention. This finding implies that negative emotional experiences can substantially impact an individual's intention to leave their job. SDT emphasizes the importance of positive affect and emotional well–being in promoting the optimization of motivation, engagement, and persistence in goal-directed behavior (Deci & Ryan, 2012).

The results of this study highlight the importance of considering emotional experiences to understand turnover intention. This suggests that businesses need to go beyond traditional measures of job satisfaction and consider employees' emotional well–being when designing policies and practices. By addressing the emotional needs of employees, organizations can create a more positive and engaging work environment that promotes retention and productivity. Subsequently, this study provides insights into negative emotions, such as boredom and discouragement, that influence turnover intention. Businesses can use this information to identify potential risk factors for turnover intent and develop proactive strategies to mitigate negative emotional experiences. Organizations can develop targeted interventions and strategies to improve employee satisfaction, engagement, and retention by analyzing affective well–being and understanding its relationship with turnover intention.

Future research should explore the mediating and moderating factors that may influence the relationship between affective well–being and turnover intention. This study identified a moderately predictive relationship between these variables, but other variables may strengthen or weaken this relationship. For example, job satisfaction, perceived organizational support, and work-life balance could act as mediators or moderators in this relationship (Wood et al., 2020). Investigating these factors will provide a deeper understanding of the complex dynamics between affective well–being and turnover intention. Future researchers should consider longitudinal studies to examine the relationship between affective well–being and turnover intention. While this study identified a moderately significant relationship, it cannot establish temporal associations. Longitudinal research designs would allow for examining how changes in affective well–being over time or season predict changes in turnover intention (Madigan & Kim, 2021). This would provide stronger evidence for the impact of affective well–being on turnover intention and inform the development of interventions aimed at improving affective well–being and reducing turnover intention.

These findings have significant implications for organizations and managers. By understanding the impact of affective well–being on turnover intention, businesses can develop targeted strategies and interventions to enhance employees' emotional experiences and job satisfaction. This includes promoting autonomy, providing opportunities for growth and development, and fostering positive workplace relationships. Such efforts can reduce turnover rates, create a more positive and productive work environment, and contribute to successful business outcomes.

In conclusion, this study highlights the critical role of emotional well–being in predicting turnover intention among occupational safety and health professionals. The findings suggest that organizations can significantly benefit from prioritizing their employees' emotional and psychological

needs. By fostering an environment that supports autonomy, competence, and relatedness, businesses can enhance job satisfaction while reducing turnover rates and building a more engaged and resilient workforce. Future research should continue to explore the intricate relationships between emotional well–being and turnover intention, considering various mediating and moderating factors and adopting longitudinal approaches to capture temporal dynamics. Addressing these aspects will also provide a better understanding of how to effectively promote employee well–being and retention in diverse organizational contexts, further contributing to the growing body of employee research well–being and work-related motivational expressions.

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APPENDIX A

Survey Instrument

General Affective Well-Being Scale

How often have you felt the following emotions over the past 30 days?	Never	Once or twice	Once or twice/month	Once or twice/week	Every day
1. Angry	1	2	3	4	5
2. Anxious	1	2	3	4	5
3. At ease	1	2	3	4	5
4. Bored	1	2	3	4	5
5. Calm	1	2	3	4	5
6. Content	1	2	3	4	5
7. Depressed	1	2	3	4	5
8. Discouraged	1	2	3	4	5
9. Disgusted	1	2	3	4	5
10. Ecstatic	1	2	3	4	5
11. Energetic	1	2	3	4	5
12. Enthusiastic	1	2	3	4	5
13. Excited	1	2	3	4	5
14. Fatigued	1	2	3	4	5
15. Frightened	1	2	3	4	5
16. Furious	1	2	3	4	5
17. Gloomy	1	2	3	4	5
18. Inspired	1	2	3	4	5
19. Relaxed	1	2	3	4	5
20. Satisfied	1	2	3	4	5

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I often seriously consider leaving my current job.						
I intend to quit my current job.						
I have started to look for other jobs.						