Personality Traits and Employee Health Behavior: The Sequential Mediating Role of Exercise Motivation and Self-Efficacy

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Employee health and well-being pose a significant problem in the harsh and stressful environment of the manufacturing sector, resulting in concerns such as poor productivity. However, the literature suggests a direct link between personality and health behavior; research into the psychological processes and environmental elements that translate this association into practical behavior is lacking. The purpose of this research was to investigate the association between personality traits (Extraversion, Agreeableness, and Conscientiousness) and health behavior. This research looked specifically at the direct effect of serial mediation of exercise motivation and self-efficacy, as well as the moderating influence of quality of life. To gather data, a survey was sent to 392 employees participating in manufacturing organizations' wellness initiatives using stratified random sampling. The hypotheses were tested using the PLS-SEM approach and Smart PLS 4.0. The findings demonstrate that all three personality traits have a favorable impact on exercise motivation. Exercise motivation has a positive and significant influence on self-efficacy, and in turn, self-efficacy has a positive effect on health behavior. Furthermore, quality of life positively moderates the link between self-efficacy and health behaviors. This research shows that managers and governments should tailor wellness initiatives to workers' personalities and highlight psychological elements. In theory, this research contributes significantly to the literature by including quality of life as a resource in SCT.

Keywords: Social Cognitive theory, Personality traits, Motivation, Self-efficacy,

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Health behavior.

Introduction

The health and well-being of employees in manufacturing sectors across the globe remains a significant concern for enterprises (Tabala et al., 2024). Although several health programs and wellness efforts have been implemented at the corporate level, ground realities show that the rate of adopting a healthy lifestyle among manufacturing employees is frighteningly low, and unhealthy habits continue. This paradox poses an important question: why do employees fail to adopt healthy practices despite the availability of resources? The answer to this issue may lie not only in exterior amenities, but also in the psychological composition of employees. Previous research has thoroughly explored the impact of the work environment on employee health (Eng et al., 2024; Mahasneh et al., 2024), but the importance of individual personality has often been overlooked (Di Fabio et al., 2020), particularly in the complicated process of shaping personality into tangible actions via psychological stimuli. There is a gap in the available knowledge about how distinct personality traits impact health habits via serial paths.

Although the "Big Five" concept is well-known (Lee et al., 2024), this research purposely concentrates on just three characteristics: agreeableness, conscientiousness, and extraversion. The rationale for this choice is that these three traits are directly related to social interaction, discipline, and energy, all of which are essential for maintaining exercise and healthy routines, whereas other traits (such as Neuroticism) are more related to emotional instability and do not directly correspond to the motivational pathway of this study (Daniel et al., 2024). In the framework of Social Cognitive Theory (SCT), this study provides a novel theoretical model that uses a "serial mediation" approach rather than directly tying personality to behavior. Our theory is that personality does not create healthy behavior on its own (Pletzer et al., 2024); rather, it promotes exercise motivation, which enhances exercise self-efficacy, and this self-efficacy is eventually turned into health behavior. The primary goal of this research is to determine if personality qualities (sociability, conscientiousness, and extraversion) influence health behaviors in manufacturing sector employees via the sequential process of exercise motivation and self-efficacy.

Literature Review and Hypotheses Development

Theoretical Framework

This study is based on Bandura (2001) and Social Cognitive Theory

(SCT). According to this theory, human behavior is the outcome of a triadic reciprocal determinism including personal, environmental, and behavioral elements. In this research, personality traits are seen as personal factors that activate cognitive processes, such as exercise motivation and self-efficacy, in order to adopt the ultimate healthy behavior.

Personality Traits and Exercise Motivation

Research suggests that personality traits, including the Big Five, have a significant impact on an individual's behavior and motivation (Buijs, 2022). According to research, people with Extraversion like social interaction and excitement (Kroencke et al., 2023). Thus, they regard exercise as a joyful and sociable activity that boosts their Intrinsic motivation (Macali et al., 2025). In contrast, conscientiousness has been proven to be the highest predictor of health behaviors in the research (Thomas et al., 2022). Because they are used to discipline and planning, their desire to exercise is linked to achieving goals and feeling responsible. Similarly, people with Agreeableness are cooperative and may be motivated to exercise due to social pressure or recommendations from others (Cook et al., 2020). A thorough examination of the available research on the link between personality and psychological motivations for health reveals that human actions are not arbitrary, but rather are founded in the individual's basic personality traits. Recent advances in the literature have acknowledged the Big Five Model as a basic paradigm for understanding human motivation (Pincus, 2024). In this context, studies have related three specific personality traits—extraversion, conscientiousness, and agreeableness—to various elements of exercise motivation. A thorough summary of these topics is provided below:

Extraversion and Motivation

According to a substantial body of evidence, people with extraversion (sociability/outgoingness) crave excitement and stimulation on a biological and psychological level (Pavani et al., 2021). According to research, such persons' primary motivations for exercise are fun and social interaction rather than health (Engels et al., 2022). Critically, research indicates that extroverts are more likely to participate in social activities (such as team sports or gym courses) rather than solitary exercise (such as jogging alone) (Engels et al., 2022). As a result, their motivation is based on the exterior environment and social rewards, rather than internal discipline. In manufacturing contexts where labor is sometimes repetitive, exercise arises as a mental escape and a form of social interaction for such people. Thus,

H1.   Extraversion has a significant influence on motivation.

Conscientiousness and Motivation

The most constant and strong predictor of health-related behavior is conscientiousness, according to the research (Thomas et al., 2022). A comparison of several schools of thought reveals that these people's desire to exercise is focused on cognition and planning, rather than emotions (Han, 2021). These people exercise not because they like it, but because it is part of their long-term health plan (Wong et al., 2022). According to the research, people with Conscientiousness have a greater ability for self-regulation (Barros et al., 2022), which pushes them to create time for exercise and persevere in the face of hurdles. Critically, these traits foster a feeling of internal responsibility, which is more lasting than external incentives. Hence,

H2.   Conscientiousness has a significant influence on motivation.

Agreeableness and Motivation

The literature on agreeableness has competing perspectives that must be harmonized (Fong et al., 2021), for eg. On the one hand, some experts argue that since more Agreeable individuals tend to avoid confrontation and obey others (Yang & Tu, 2021), they are more likely to exercise by following the advice of a doctor or trainer. Their motive is focused on social compliance. However, another school of thought believes that these people often prioritize others above themselves (selfless character) (Wilmot & Ones, 2022), which may lead to their neglecting their own health and exercise to serve others. As a result, whether their social group values exercise influences their drive to exercise (Mema et al., 2022). If their peers exercise, they will follow suit. The key takeaway from the available evidence is that, although these three attributes motivate people to exercise, their mechanism differs. Extraversion promotes motivation via Enjoyment, Conscientiousness through Duty, and Agreeability through Relationships (Carlo et al., 2005).

However, there is a considerable void in past research since these features have mostly been investigated in the general population or among students. In the fatiguing and high-stress setting of the manufacturing business, when mental and physical resources are already spent, it remains to be determined which personality feature is most beneficial in preserving exercise motivation (Wang & Mao, 2024). Does conscientiousness outweigh exhaustion or a need for social interaction (Hagen et al., 2023)? This is the scholarly discussion that this study will further. In the framework of SCT, personality is a key personal factor that influences how a person thinks. According to the theory, a person's genetic and psychological composition (also known as personality) impacts how they acquire information from their surroundings and what motivates

them. As a result, personality engages an individual's motivational processes before directly impacting behavior.

Despite extensive research on the association between personality and health, there remains a conceptual gap. Most research has directly connected personality to health outcomes while ignoring the mechanism by which personality generates the specific notion of exercise motivation. Furthermore, this research will address an empirical vacuum by investigating the influence of these specific personality traits on motivation in the tough industrial environment, when workers are physically exhausted. Therefore,

H3. Agreeableness has a significant influence on motivation.

Exercise Motivation and Exercise Self-Efficacy

A thorough literature review demonstrates that having a desire (Motivation) alone is insufficient; it must also be translated into a belief. One school of thinking among researchers is that once a person acquires a strong drive (whether intrinsic or extrinsic) to exercise, he or she will continue to do so (Morris et al., 2022). This repetition and involvement improve his or her mastery, which in turn boosts self-efficacy. According to the research, self-efficacy is difficult to build when a person is not motivated to attempt (Schunk & DiBenedetto, 2021). The concept of self-efficacy is important to the Social Cognitive Theory Wu et al. (2021) justification. Bandura (2001) defines self-efficacy as mastery experiences. Exercise motivation encourages individuals to take action, and when they do, they receive a feeling of their own skills, which boosts their self-esteem. This relationship corroborates the SCT premise that cognitive variables (motivation) determine behavioral capacities (Wu et al., 2021). There is a potential connection gap. Previous research has often examined self-esteem as a predictor of motivation (i.e., if I believe it, I want to do it). However, this research takes a contrary stance, claiming that motivation leads to self-esteem. Examining this directionality in the context of manufacturing employees will provide a fresh perspective to the literature. So,

H4. The motivation has a significant influence on self-efficacy.

Exercise Self-Efficacy and Health Behavior

There is widespread agreement in the research that self-efficacy is the most potent predictor of human behavior (Meng & Zhang, 2023). A comparative examination of many health belief models Firouzbakht et al. (2021) finds that persons who have a strong belief in exercising despite barriers (e.g., exhaustion, lack of time) engage in healthy activities. The evidence indicates that those with low self-efficacy quit up after experiencing failure or difficulties, while those with high self-efficacy see

it as a challenge (Gale et al., 2021).

The fundamental concept of SCT is that human behavior is not only determined by results (Scott et al., 2022), but rather by the conviction that one is capable of doing the desired behavior. According to the theory, self-efficacy serves as an intermediary between knowledge and action (Chuang et al., 2021). If the employee is confident (Efficacy), he will make time to exercise (Behavior) even after completing his manufacturing chores. The study's methodological shortcoming is the use of Task-Specific Efficacy instead of General Self-Efficacy, despite the documented link. Furthermore, this research is testing this relationship as the last component of a Serial Mediation Model, which is not widely accessible in the literature. Hence,

H5.   The self-efficacy has significantly increased the health behavior.

The Moderator Role of Quality of Life

Modern literature stresses contextual issues in addition to psychological considerations. Quality of life has generally been considered as a health consequence (Kaplan & Hays, 2022), but in recent talks, it has been referred to as a resource . According to the synthesized research, it will be simpler for a person to convert his self-esteem into practical behavior if he has a higher quality of life (financial, social, and mental well-being) (Barbalat et al., 2022). In contrast, among those with a bad quality of life despite strong self-esteem, a lack of resources might be a barrier to behavior (Pinquart, 2023). Social Cognitive Theory (SCT) posits that the environment significantly impacts behavior (Farrukh et al., 2022). Quality of life refers to environmental and personal resources that make behavior easier or more difficult (Rock et al., 2024). This theory acknowledges that behavior is impacted not just by internal desires, but also by environmental obstacles and facilitators. Here, quality of life serves as a catalyst, strengthening the link between self-esteem and behavior (Barbalat et al., 2022). Identifying research gaps is a crucial aspect of this study. In past research, quality of life was generally used as a dependent variable. Using it as a moderator and observing how it affects the link between self-esteem and health behavior (border condition) adds a new and significant contribution to the current body of information. This method explains why even devoted employees do not adopt healthy practices. Hence,

H6.   The quality of life moderates the relationship between self-efficacy and health behavior.
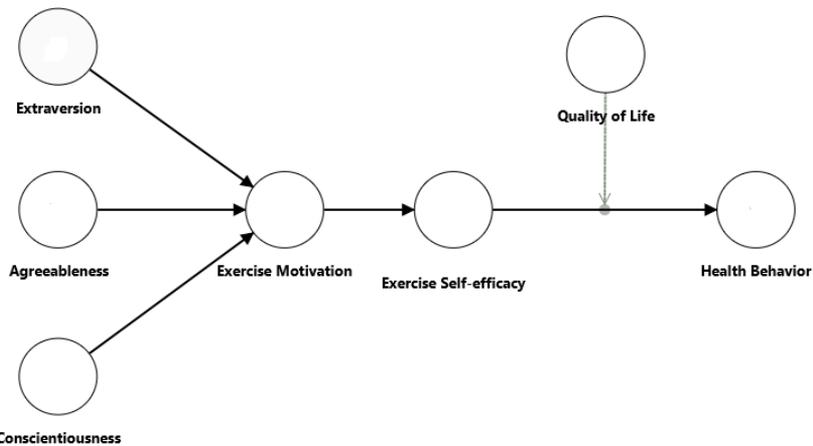
The research framework (Figure 1) is as follows:

Figure 1: Theoretical Framework

Methodology

Sampling procedure and Participants

This study's target audience is the workforce of different manufacturing organizations (including textile, automobile, and pharmaceutical companies). We employed the Stratified Purposive Sampling approach to guarantee data quality and minimize bias. This method enabled us to select individuals from diverse industrial sectors who possessed specific traits. Participants were chosen using the tight inclusion criteria. Firstly, to satisfy legal and ethical criteria, all participants had to be at least 18 years old. Secondly, only workers who actively participated in their organization's Employee Wellbeing Programs were chosen. This criterion was necessary to ensure that participants were closely connected to the subject of study (healthy habits). Thirdly, only workers who had been employed by their current company for more than two years were included in the research. This is because new workers are generally in a honeymoon period or are still learning about the culture, but senior employees are better able to characterize the impacts of the organizational environment and stress. Before data collection, all participants gave informed permission and were assured of their privacy.

Data Collection

This cross-sectional research included on-site and online investigations. On-site, professional investigators provided an overview of the survey's goal, importance, and guidelines. Quick response codes were then linked. Participants were given an online questionnaire to fill out using the social media site. To avoid duplication, each IP address was only

allowed one entry. Although there was no time limit for completing the questionnaire, all parts must be completed before submission. On-site researchers checked the instruments of the questionnaires and gave credit to the participants. The questionnaire included a middle section item asking participants for the truthfulness of their answers. Data cleaning procedures removed responses that were coded 'No.' A three month period in mixed mode of data collection was adopted to help improve the accuracy and accessibility of the data. An online survey was sent out to gather responses from administrative workers and office workers, white-collar professionals that have access to computers. Hard copy data was gathered in field visits to blue-collar workers on the manufacturing floor with limited internet connectivity. A pilot study involving thirty workers was conducted before the full survey was let loose, in order to test the linguistic clearness and comprehensibility of the questions and the results were promising. Some five hundred surveys were distributed. Upon return, the data were screened to remove incomplete forms, disengaged responses and statistical outliers. Following this stringent screening, 392 legitimate replies were received, forming the final sample for analysis.

Measures

All constructs were assessed using validated multi-item reflecting scales modified from prior research. Items measuring personality traits were derived from the agreeableness, conscientiousness, and extraversion scales (Kang et al., 2023), while exercise (health) motivation items were adapted from Sheng et al. (2025) research. Self-Efficacy Scale for Exercise, adapted from Sheng et al. (2025). The quality of life was derived from previous studies (Liu et al., 2024). Health behavior was assessed using five items from Liu et al. (2024) study. Items were shown on seven-point Likert scales, with anchors from "strongly disagree" (1) to "strongly agree" (7).

Statistical Analysis and Justification for PLS-SEM

The data in this research was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) using Smart PLS 4.0 software. The following are strong reasons to use PLS-SEM over classic approaches (such as SPSS or CB-SEM): Our research model is multidimensional and includes serial mediation and moderation (Dash & Paul, 2021). PLS-SEM is best suited for concurrently testing such complicated interactions. The primary purpose of this study is to explain and forecast healthy behaviors rather than just verifying the theory (Predictive Relevance). PLS-SEM beats CB-SEM (like AMOS) in predictive analysis. In the social sciences, it is rare to find data that is totally normal (normal distribution). PLS-SEM is a non-parametric method that produces reliable findings even when the data is not normal. Two-step analysis PLS-SEM enables us to separate the

analysis into two sections. The scales' reliability and validity (convergent and discriminant) will be assessed. This model is used to assess hypothesis testing, R-Square, and Effect Size (f2).

Data Analysis

Variance-based structural equation modeling (PLS-SEM) was used in SmartPLS to examine the data. The measuring model was evaluated for reliability (Cronbach's alpha, rho_A, and composite reliability), convergent validity (AVE > 0.50) (Kamis et al., 2020), discriminant validity (HTMT and Fornell-Larcker criteria), and collinearity (VIF < 5). Once satisfied, the structural model was assessed for model fit using standardized path coefficients, coefficients of determination (R2), effect sizes (f2), predictive validity (Q2, PLSpredict), and the SRMR index. With exercise motivation modeled as a mediator and quality of life using latent interaction model terms with bootstrapping, mediation and moderation were explored within the same PLS framework. Using complete collinearity VIFs, common method variance was evaluated, and no significant bias was found.

Multicollinearity

A comprehensive collinearity test was performed to ensure that common method variance (CMB) did not affect the findings. CMB is the false inflated of correlations among variables caused by measurement artifacts, such as respondents supplying data for both independent and dependent variables in the same survey. To test for this, compute complete collinearity variance inflation factors (VIFs), which reveal whether a single latent factor is driving correlations across constructs.

Table 1 shows that the variance inflation factor (VIF) values varied from 1.02 to 1.21. These results fall below the cautious threshold of 5 (Kalnins & Praitis Hill, 2025), which is typically used to indicate bias in variance-based structural models. This shows that no single latent factor is influencing the relationships among the constructs. The correlations between personality traits, exercise motivation, exercise self-efficacy, quality of life, and health behavior are real, not due to method bias.

Table 1

Multicollinearity

	VIF
Agreeableness	1.130
Conscientiousness	1.023
Extraversion	1.141
Exercise Motivation	1.000
Exercise Self-efficacy	1.210
Quality of Life	1.052

Model Measurement

The measurement model underwent internal reliability, convergent validity, and discriminant validity tests. Cronbach's alpha, with a minimum value of 0.70, was used to assess internal reliability (Risher & Hair Jr, 2017). Indicator loadings were used to investigate causal relationships. Aguirre-Urreta et al. (2013) employed composite reliability to assess causation. Cronbach's alpha values of all constructs above 0.7, indicating internal consistency. According to Fornell and Larcker (1981), AVE > 0.50 is an acceptable result for assessing convergent validity. Table 2 displays the constructs' item loads, Cronbach's alpha, and AVE values. Cronbach's alpha values varied from 0.810 to 0.904, above the acceptable standard of 0.70. This suggests great internal reliability for the constructs. The composite reliability varied between 0.915 and 0.884, and the AVE ranged between 0.605 and 0.838, above suggested standards. The convergent validity criteria were satisfied. To determine discriminant validity, the square root of the AVE and cross-loading matrix were used.

Table 2

Outer Loadings

	Outer Loadings	Cronbach's alpha	CR	AVE
AG1	0.787			
AG2	0.872			
AG3	0.906	0.825	0.892	0.734
CON1	0.883			
CON2	0.830			
CON3	0.852	0.818	0.891	0.732
EXT1	0.921			
EXT2	0.907			
EXT3	0.918	0.904	0.939	0.838
EM1	0.856			
EM2	0.880			
EM3	0.815	0.810	0.887	0.724
ESE1	0.825			
ESE2	0.854			
ESE3	0.835			
ESE4	0.871	0.869	0.910	0.717
QOL2	0.722			
QOL3	0.856			
QOL4	0.925			
QOL5	0.904	0.878	0.915	0.731
HB1	0.766			
HB2	0.790			
HB3	0.706			
HB4	0.845			
HB5	0.778	0.838	0.884	0.605

According to Fornell and Larcker (1981), discriminant validity requires the square root of a construct's AVE to be larger than its correlation with other constructs (Table 03). The researchers used simulation experiments to show that the heterotraitmonotrait ratio (HTMT) is more effective in

detecting a lack of discriminant validity. This approach was previously found. The HTMT ratios for all pairs of variables were less than 0.90 (Table 03).

Table 3
Discriminant Validity

			HTMT							Fornell and Larcker				
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
1	-							0.86						
2	0.13	-						0.10	0.86					
3	0.30	0.19	-					0.27	0.16	0.85				
4	0.49	0.27	0.54	-				0.42	0.23	0.46	0.85			
5	0.38	0.16	0.43	0.45	-			0.34	0.14	0.37	0.40	0.92		
6	0.37	0.45	0.37	0.45	0.53	-		0.32	0.38	0.32	0.40	0.47	0.78	
7	0.12	0.08	0.26	0.22	0.33	0.23	-	-0.11	0.03	-0.23	-0.20	-0.30	-0.22	0.86

Note: 1= Agreeableness, 2=Conscientiousness, 3=Exercise Motivation, 4=Exercise Self-efficacy, 5=Extraversion, 6=Health Behavior, 7=Quality of Life

Structural Paths

The structural model was based on the connections between constructs. To evaluate the study's hypotheses, direct links between constructs in the model were analyzed first. The second step examines the moderate impact, and the third phase examines the indirect effects that are not predicted findings. Agreeableness significantly boosts exercise motivation ($\beta = 0.153$, p < 0.005). Consciousness significantly boosts exercise motivation ($\beta = 0.100$, p < 0.014). Exercise motivation is significantly positively influenced by extraversion ($\beta = 0.307$, P= 0.000). This suggests that all personality traits boost workers' motivation to exercise. Extraversion is the strongest predictor of exercise motivation. The self-efficacy of workers is positively ($\beta = 0.459$, P= 0.000) and significantly impacted by exercise motivation. Self-efficacy has a favorable impact ($\beta = 0.324$, P= 0.000) on the health behavior of industrial personnel. The details of results are present in Table 04 and Figure 02.

Table 4
Moderation and Direct Paths

|	Coefficient	STDEV	T values	P values
Agreeableness -> Exercise Motivation	0.153	0.059	2.603	0.005
Conscientiousness -> Exercise Motivation	0.100	0.046	2.191	0.014
Exercise Motivation -> Exercise Self-efficacy	0.459	0.065	7.065	0.000
Exercise Self-efficacy -> Health Behavior	0.324	0.053	6.127	0.000
Extraversion -> Exercise Motivation	0.307	0.062	4.926	0.000
Quality of Life x Exercise Self-efficacy -> Health Behavior	0.104	0.060	1.734	0.041
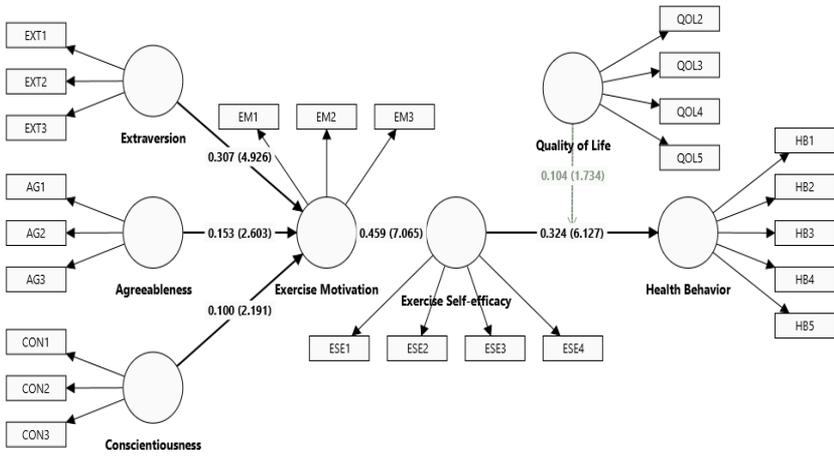
Figure 2: Path coefficient

The moderating influence (β = 0.104, P= 0.041) of quality of life enhances the link between self-efficacy and health behavior as shown in Table 04 and Figure 3. All of the particular indirect impacts on health behavior are good, as shown by both the indirect paths of motivation and self-efficacy. Extraversion is the strongest path to health behavior via motivation and self-efficacy. The hypotheses were tested using the bootstrap method. Table 5 highlights the full data, including path coefficient, b, and t-statistics.
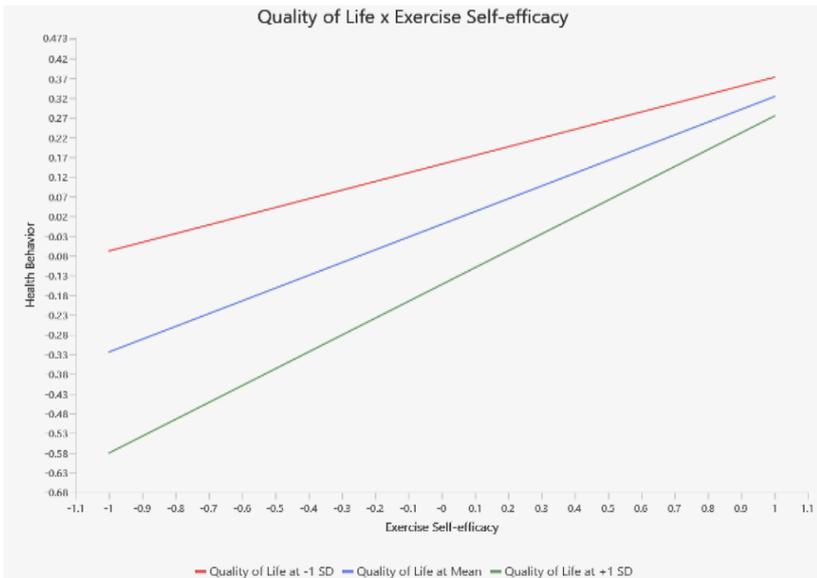

Figure 3: Interaction effect of Quality of Life

Table 5

Specific indirect effects: Un hypothesized paths

	Coefficient	STDEV	T values	P values
Agreeableness -> Exercise Motivation -> Exercise Self-efficacy	0.070	0.030	2.318	0.010
Conscientiousness -> Exercise Motivation -> Exercise Self-efficacy	0.046	0.024	1.949	0.026
Exercise Motivation -> Exercise Self-efficacy -> Health Behavior	0.149	0.037	4.034	0.000
Extraversion -> Exercise Motivation -> Exercise Self-efficacy	0.141	0.042	3.322	0.000
Conscientiousness -> Exercise Motivation -> Exercise Self-efficacy -> Health Behavior	0.015	0.008	1.787	0.037
Agreeableness -> Exercise Motivation -> Exercise Self-efficacy -> Health Behavior	0.023	0.012	1.970	0.024
Extraversion -> Exercise Motivation -> Exercise Self-efficacy -> Health Behavior	0.046	0.018	2.549	0.005

Model fit

Rights and Sterba (2019) demonstrated that reflective indicators of constructs account for variance. R2 values were calculated to determine the amount of variance for the construct in the model. The Standardized Root Mean Square Residual (SRMR) value (Wong, 2013), which calculates the difference between the observed correlation matrix and the implied correlation matrix of the model, provides the measurements for approximating adjustments of the model. SRMR indicates the average magnitude of differences. A low SRMR number indicates a better fit. Our SRMR of 0.057 was within the recommended range for a good fit model, as shown in Table 06.

Table 6

Model Fit

	Saturated Model	Estimated Model
SRMR	0.057	0.118
d_ULS	1.063	4.562
d_G	0.430	0.537
Chi-square	1049.085	1201.240
NFI	0.806	0.778

Wong (2013) defines a good fit as an SRMR value of < 0.08. Hair et al. (2019) R2 results indicate that 0.171 = weak, 0.211 = Average, and 0.187 =average. The model's major dependent variable, health behavior (R2 = 18.7%), was weak, whereas exercise motivation (R2 = 17.1%) and self-efficacy (R2 = 21.1%) were stronger constructs. This number indicates that the model is "substantially" relevant to employee health behaviors as shown in Table 07.

Table 7

R Square

	R-square	R-square adjusted
Exercise Motivation	0.171	0.164
Exercise Self-efficacy	0.211	0.209
Health Behavior	0.187	0.180

Discussion

The objective of this section is to evaluate the present study's empirical results and place them in the context of existing research and social cognitive theory (SCT). Overall, the findings of this investigation provide good support for our suggested model. According to data research, personality features influence health habits via a series of exercise motivation and self-esteem. The following is a full description of each hypothesis.

Our findings indicate that all three personality traits Extraversion (beta=0.307, p<0.01), Agreeableness (beta=0.153, p<0.01), and Conscientiousness (beta=0.100, p<0.05) have a favorable and significant influence on exercise motivation among manufacturing workers. Extraversion was identified as the strongest predictor. Previous study by Davis et al. (1995) suggests that extraverted persons see exercise as a social activity and entertainment, leading to increased motivation. Similarly, people with Conscientiousness are more devoted to their health objectives because they prepare ahead of time and discipline themselves (O'Connor et al., 2009). These results back with the SCT theory that personal factors drive human motivation.

However, some earlier research Lewis and Sutton (2011) found no significant link between Agreeableness and Exercise Motivation. They contended that more Agreeable persons often prioritize the needs of others above their own, which has an impact on their drive for health. In contrast, the positive connection in our research might be attributed to the manufacturing industry's team culture, in which employees are driven to engage in health programs by collaborating with coworkers or following management directions.

The study hypothesis that exercise motivation promotes exercise self-efficacy was shown to be statistically extremely strong (beta=0.459, p<0.001). This is the most powerful route in the model. This conclusion aligns with both the Self-Determination Theory and Bandura (2001)'s ideas. According to the literature, when a person is intrinsically or extrinsically motivated to accomplish something, he or she repeats that behavior. This participation gives him or her a mastery experience, which boosts self-efficacy. Some classic frameworks, such the Health Belief Model, claim that self-efficacy comes first and then motivation. However,

this is contradictory. That is, if a person thinks, they are more likely to desire to work. Our findings, on the other hand, corroborate the motivation-to-self-efficacy route, which states that manufacturing personnel must first be motivated before they can believe.

The study found that exercise self-efficacy had a favorable and substantial impact on health habits (beta=0.324, p<0.001). This study supports the wide literature in Health Psychology (e.g., McAuley et al.). Self-confidence is regarded as the gold standard for behavioral change. Employees who feel they can exercise despite exhaustion and a lack of time are more likely to do so. Stone (1994) offered a paradoxical theory that suggests overconfidence might lead to complacency and decreased effort. Our findings, however, contradict this negative feedback loop and instead confirm the typical positive link.

Our investigation revealed that the three personality traits (Extraversion, Agreeableness, and Conscientiousness) indirectly impact health behavior via incentive and self-confidence. All pathways show statistical significance (p-values < 0.05). These results provide a significant theoretical addition to this work. Previous studies have often focused on the direct association between personality and health, with sometimes inconsistent findings. Our study shows that personality does not work in a vacuum. Extraversion, for example, does not contribute to health merely because a person is social, but rather because being social encourages them (Costa & McCrae, 1980), which in turn makes them confident, and that confidence inspires them to exercise. This sequential method is a significant contribution to the literature.

The study found that Quality of Life had a positive moderating effect on the connection between exercise self-esteem and health habits (p=0.041). This study emphasizes the relevance of the Conservation of Resources (COR) Theory and the social environment. According to the literature, resources (such as a decent quality of life) help people modify their behavior. When an employee has high self-esteem and a decent quality of life (financial and mental well-being), he or she is more likely to engage in healthy behaviors. Surprisingly, quality of life had a direct negative impact on health behaviors (beta=-0.153, p=0.002). According to Whitsel et al. (2023) studies, a sedentary lifestyle or workplace amenities might divert individuals from physical activity. However, as a moderator (interaction term), its influence is positive, which indicates that in the presence of self-esteem, quality of life becomes a resource, but in the absence of self-esteem, it may lead to complacency. The research concludes that improving health behavior in the manufacturing business requires more than just personality traits. Employee motivation and self-esteem must also be improved, and quality of life plays a crucial part in this process.

Contributions

This work adds significant theoretical, empirical, and practical contributions to the fields of Organizational Behavior and Health Psychology.

Theoretical Contributions

This research expands the scope of SCT. Traditionally, SCT has focused on environmental and cognitive aspects (Carillo, 2010). This research incorporates the Big Five Personality Traits into the SCT framework to demonstrate how inherent traits activate cognitive aspects (Motivation & Self-efficacy - Cognitive). This integration introduces a new theoretical dimension to literature. Most earlier research looked at the direct association between personality and health habits, which was often vague, akin to a black box. This research uses a sequential mediation model (Personality to Motivation to Self-efficacy to Health Behavior) to identify the psychological pathway that connects personality to behavior. It explains why and how some workers are healthier than others. Quality of Life has mostly been regarded as an outcome in the current research. This work provides a significant conceptual contribution by framing it as a contextual resource and boundary condition. This viewpoint shows how the influence of self-efficacy might vary depending on individual life situations.

Empirical and Practical Contributions

From a manufacturing sector perspective, research on health habits has mostly focused on Western nations or the general public. Testing this concept in the hard and demanding environment of developing nations' manufacturing sector is a valuable empirical supplement. According to this research, HR managers should consider personality traits (particularly Conscientiousness and Extraversion) when hiring personnel in addition to technical abilities. Furthermore, wellness programs should not be restricted to gym facilities but rather concentrate on developing workers' self-efficacy via psychological training.

Limitations & Future Directions

As with all scientific investigations, this study has a number of limitations which highlight areas for future research. The most salient limitation is the cross-sectional design, which collects data at one point in time. Although the statistical analysis showed evidence of causality, it cannot conclusively show whether behavior change occurred over time. To further well-ground causation, future researchers can use a longitudinal study comparing workers' pre- and post-training interventions. Data

collection was based on self-reports and those are prone to the problem of social desirability (for example, the participant may respond in a way that portrays themselves in a positive way). To present a more reliable picture of health behaviors, future studies should include some objective measures, for example, data from wearable devices, from gym records or from medical records. This research was restricted to the industrial sector; therefore, the results of the research might not be completely universal with respect to other sectors (such as services, information technology or education). To further explain sectoral differences, investigators may be able to do a comparative analysis of health motivations between blue (manufacturing) and white (services) collar workers. While the current analysis focused on the effect of quality of life as a moderator, organizational variables such as supervisor support or workload might also have important effects. Including such factors as moderators in the model would increase the understanding of the effects of organizational culture.

Conclusion

The main aim of the existing research was to clarify the psychological determinants of health-related behaviors for the employees in the industry of manufacturing. Conducted within the framework of the social cognitive theory, the empirical analysis found that personality dimensions (extraversion, agreeableness, and conscientiousness) represent the antecedents of health practices by employees. However, it is not just personality, but motivational states engendered by personality, which further foster self-efficacy, which, in turn, predisposes individuals to engage in salutary activities. Moreover, the data suggest that Quality of Life behaves as a salient proximal catalyst object whereby employees having higher self-esteem and life quality bigger propensity to adopt health-promoting habits.

In summary, the findings suggest that industrial firms wishing to improve the health and productivity of their human resources allocate their resources to psychological training, personal development diversification, and quality-of-life provision enrichment, as a complement to the use of traditional interventions. Consequently, this study creates a bridge between the theoretical propositions and the application practice, providing the basis for the development of a strong and dynamic corporate culture.

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