



Research Articles

Artificial Intelligence - AI-Driven Psychological Analytics in Unveiling the Quality of Work Life Among the Thai Working Population

Supakorn Tunvaravuttichai^{1*}, Tappawan Preedagasemzin², Monchai Sripetchnai³,
Piched Girdwichai⁴, Anek Phanturat⁵

1. College of Innovation and Management, Suan Sunandha Rajabhat University, Thailand. **E-mail:** supakorn.tu@ssru.ac.th

2. College of Innovation and Management, Suan Sunandha Rajabhat University, Thailand. **E-mail:** tappawan.pr@ssru.ac.th

3. College of Innovation and Management, Suan Sunandha Rajabhat University, Thailand. **E-mail:** monchai.sr@ssru.ac.th

4. College of Innovation and Management, Suan Sunandha Rajabhat University, Thailand. **E-mail:** piched.gi@ssru.ac.th

5. Faculty of Management, Shinawatra University, Thailand. **E-mail:** anlawoe@gmail.com

***Corresponding Author E-mail:** supakorn.tu@ssru.ac.th

Received: February 20, 2026; Revised: March 25, 2026; Accepted: April 23, 2026

Abstract

This survey research explores the intricate relationship between the Quality of Working Life (QWL) and the overall quality of life among the working-age population in Samut Songkhram province, with a particular focus on the impact of evolving workplace challenges. The study utilizes a questionnaire-based approach and involves a sample of 399 individuals. The analysis reveals that under standard conditions, the participants reported an excellent quality of working life, with notable strengths in areas such as a proper and safe work environment and substantial development potential. However, amidst shifting occupational landscapes, the overall QWL dropped to a moderate level. Notably, factors such as nutritional responsibility, physical activity, and stress management showed significant correlations with the quality of working life, emphasizing the importance of holistic well-being in the workplace. The findings highlight the need for targeted interventions and support mechanisms, including workplace activities and counseling services, to enhance the working quality and ultimately contribute to a better quality of life for the working-age population in the modern era. Further research is recommended to investigate the long-term effects and extend the study to other populations.

Keywords: Artificial Intelligence, Quality of Working life, QWL, Nutritional

Introduction



The concept of Quality of Work Life (QWL) has increasingly gained scholarly attention as a multidimensional framework for evaluating employees' overall well-being within organizational contexts (Sirgy et al., 2001). QWL encompasses not only tangible aspects such as compensation and job security but also psychological and social dimensions, including job satisfaction, autonomy, and interpersonal relationships. In recent years, the global workforce has undergone profound transformations driven by rapid digitalization and evolving economic conditions. These developments have significantly altered traditional work patterns, organizational structures, and employee experiences, thereby intensifying the need to reassess QWL from a psychological perspective (Guest, 2017). Within the Thai context, the quality of work life has historically been shaped by a complex interplay of cultural values, economic conditions, and organizational practices. Prior to the acceleration of digital transformation, Thai employees' perceptions of QWL were largely influenced by factors such as job satisfaction, work-life balance, career advancement opportunities, and organizational support (Kittiprapas & Suthiphand, 2019). Additionally, Thai cultural norms—emphasizing collectivism, respect for hierarchy, and social harmony—have played a significant role in shaping workplace relationships and employee well-being. These contextual characteristics provided a foundational understanding of QWL before the emergence of large-scale workplace disruptions. However, the rapid shift toward digital and flexible work arrangements—accelerated by the COVID-19 pandemic—has fundamentally transformed the nature of work in Thailand and globally. Organizations have increasingly adopted remote and hybrid work models, supported by advanced digital communication technologies, to maintain operational continuity (Kniffin et al., 2021). While these changes have enhanced flexibility and efficiency, they have also introduced new challenges, including blurred boundaries between work and personal life, increased job demands, and technology-induced stress. Employees are now required to navigate complex work environments characterized by reduced face-to-face interaction, potential social isolation, and heightened expectations for productivity. From a psychological standpoint, these transformations underscore the importance of examining QWL beyond traditional structural factors. Psychological dimensions such as work engagement, perceived autonomy, emotional well-being, and social connectedness have become critical determinants of employees' overall work life quality (Bakker & Demerouti, 2017). In the contemporary work environment, where uncertainty and rapid change prevail, these factors significantly influence how employees interpret and respond to their work experiences. Despite the growing body of literature on QWL, a critical research gap remains. Existing studies have predominantly focused on either structural determinant of QWL or general employee well-being, with limited attention to the integrated psychological dimensions of QWL within the Thai context, particularly in the post-pandemic era.

Moreover, there is a lack of empirical research employing comprehensive methodological approaches to capture both subjective experiences and measurable outcomes of QWL among Thai employees.

Therefore, this study aims to address this gap by examining the psychological dimensions influencing QWL among the Thai working population in the contemporary work environment. By adopting a mixed-methods approach, combining qualitative interviews and quantitative surveys, this research seeks to provide a holistic understanding of how psychological factors interact to shape employees' perceptions of their work life quality. This approach enables a more nuanced exploration of employees lived experiences while also offering generalizable insights. In light of the lasting impact of the COVID-19 pandemic, it is essential to reassess how QWL has evolved and to identify the key psychological factors that contribute to employee well-being in the current context. The findings of this study are expected to provide valuable implications for organizational leaders and policymakers in Thailand, supporting the development of strategies that promote sustainable work environments. Ultimately, this research contributes to the advancement of knowledge by integrating psychological perspectives into the study of QWL and offering practical recommendations to enhance both employee well-being and organizational effectiveness.

Research of Objective

1. To assess the level of Quality of Working Life (QWL) among working-age individuals under standard working conditions.
2. To evaluate changes in QWL under shifting occupational and workplace environments.
3. To investigate the relationship between health-related factors—namely nutritional responsibility, physical activity, and stress management—and QWL.

Literature Review

Concept of Quality of Working Life (QWL)

Quality of Working Life (QWL) is a multidimensional construct reflecting employees' well-being, job satisfaction, and overall experience within the workplace. It encompasses physical, psychological, and social aspects of work that contribute to individual fulfillment and organizational effectiveness. According to Walton (1975), QWL includes key dimensions such as adequate compensation, safe working conditions, opportunities for growth, social integration, and work-life balance. Subsequent studies have expanded the concept by emphasizing

employee engagement, organizational support, and perceived fairness (Sirgy et al., 2001). In the Thai context, QWL is often examined in relation to socio-cultural values, job security, and organizational hierarchy, which influence employees' perceptions of well-being and satisfaction (Koonmee et al., 2010). Thus, QWL can be operationalized as a composite indicator reflecting employees' physical health, mental well-being, job satisfaction, and social relationships within the workplace.

QWL under Standard and Changing Work Environments

Under standard working conditions, QWL is influenced by stable factors such as workload, compensation, and organizational policies. Research indicates that supportive management, clear job roles, and safe environments contribute positively to QWL (Cascio, 2016). However, contemporary workplaces are increasingly characterized by rapid changes, including technological advancement, flexible work arrangements, and organizational restructuring. These shifts significantly affect employees' QWL. For example, remote work and digital transformation may enhance flexibility but also introduce challenges such as work-life imbalance and increased stress (Carayon & Smith, 2000). In Thailand, changes in occupational structures—particularly in urban and industrial sectors—have altered employees' expectations and experiences. Studies suggest that adaptability and organizational support are critical factors in maintaining QWL during transitions (Siengthai & Pila-Ngarm, 2016). Therefore, assessing QWL requires consideration of both stable working conditions and dynamic workplace changes.

Health-Related Factors and QWL

Health-related behaviors play a significant role in shaping QWL. The present study focuses on three key factors: nutritional responsibility, physical activity, and stress management.

1. Nutritional Responsibility refers to individuals' awareness and practice of maintaining a healthy diet. Proper nutrition contributes to physical health, energy levels, and productivity, which in turn influence work performance and satisfaction (World Health Organization [WHO], 2020). Employees with balanced diets tend to report higher levels of well-being and QWL.

2. Physical Activity Regular physical activity is associated with improved physical and mental health outcomes, including reduced risk of chronic diseases and enhanced mood (Warburton & Bredin, 2017). In the workplace context, physically active employees often demonstrate higher productivity and lower absenteeism, contributing positively to QWL.

3. Stress management involves individuals' ability to cope with work-related pressures. High stress levels negatively impact both mental health and job satisfaction, thereby reducing

QWL (Lazarus & Folkman, 1984). Effective stress management strategies, such as relaxation techniques and organizational support, are essential for maintaining employee well-being.

Theoretical Framework

This study integrates the concept of QWL with health behavior theory to explain how individual and environmental factors interact to influence well-being at work. The framework is grounded in the Health Promotion Model (HPM), which posits that health behaviors are influenced by individual characteristics and experiences, as well as behavioral-specific cognitions. In this study, nutritional responsibility, physical activity, and stress management are conceptualized as health-promoting behaviors that directly affect QWL. Additionally, the study considers elements of Work Environment Theory, which emphasizes the role of organizational and environmental factors in shaping employee experiences and outcomes

Research Methodology

Study Design

This research encompasses a survey study conducted through a carefully crafted questionnaire, drawing inspiration from the life pathway concept proposed by Pender (2002) and the QWL framework outlined by Richard E. Walton (1973). Prior to its implementation, the questionnaire underwent a rigorous validation process guided by the insights of three esteemed professors. This validation procedure ensured the content's accuracy and alignment with the research's objectives. Subsequently, the questionnaire underwent a trial phase, during which its reliability was established with a satisfactory relative confidence level of .70 and an impressive Cronbach's Coefficient Alpha of .92. These findings collectively affirm the questionnaire's efficacy and suitability for integration into this research endeavor

Sample and Data Collection

The target population for this study comprised individuals in Samut Songkram province, totaling 101,807 individuals as reported by the Department of Statistics (Samut Songkram province, 2022). Employing Taro Yamane's methodology (1973), the sample size was determined, considering a confidence level of 95% and a permissible deviation of 5%. Consequently, the calculated sample size was 399 participants. The sampling process was executed using a probability-based approach, specifically employing stratified sampling techniques to ensure representation across different strata. Subsequently, data collection was undertaken. Data collection took place between the months of February and April in the year 2023. The mean duration for each data collection session spanned from 15 to 30 minutes per participant. Notably, participants were accorded the liberty to withdraw from the research at their discretion and convenience. Ultimately, a total of 399 complete datasets were successfully gathered.

Research Results

The meticulous data analysis conducted in the context of this study unveiled participants' overall way of life to be remarkably elevated, evidenced by mean score of $3.47 \pm .47$. This observation carries significant relevance within the current era, where individuals' well-being has been a central concern. Upon delving into specific dimensions, the assessment demonstrated the commendable state of spiritual development, achieving an impressive mean

score of $3.72 \pm .66$, signifying a excellent level. Moreover, stress management, a topic closely tied to coping mechanisms during challenging times like the pandemic, garnered a similarly high assessment with mean score of $3.47 \pm .73$. While health exhibited a more moderate level with mean score of $3.36 \pm .72$, it remains a vital dimension in light of the global health crisis. Additionally, given the significance of maintaining interpersonal relationships amidst social disruptions, it's notable that this aspect achieved a moderate level, denoted by a mean score of $3.25 \pm .53$. Interestingly, physical activity, which is pivotal for holistic well-being, obtained the lowest mean score of $3.34 \pm .42$, positioning it within the Moderate level of evaluation. These findings, intricately related to the study's exploration of the psychological perspective on assessing the QWL among the Thai working population in the current era environment, underscore the multifaceted interplay between well-being dimensions and the evolving professional landscape, shedding light on areas of potential focus for enhancing the quality of working life.

Table 1 Mean and standard deviation (S.D.) of the QWL

Variable (n=399)	Mean	S.D.	Level
Personal responsibility for one's health	3.42	.78	Moderate
Nutrition	3.45	.90	Moderate
Physical exercise	3.40	.48	Moderate
Stress control	3.65	.89	Excellent
Interpersonal connection	3.31	.59	Moderate
Spiritual advancement	3.80	.72	Excellent
Mean	3.53	.53	Excellent

The QWL assessment included a thorough examination of participants' job experiences, reflecting the changing situation in the aftermath of the current era epidemic. Notable features, such as a right and safe workplace, possibilities for capacity development, social integration, and job description democracy, were rated extremely favorably, earning "Excellent" ratings. However, the evaluation drew attention to areas that need focused improvements, such as fair and suitable compensation, advancement and stability, work-life balance, and relevance and benefits to society, all of which were rated "Moderate." These observations emphasize the crucial role of organizations in focusing on areas such as compensation, work-life balance, and societal contributions to cultivate improved working conditions and bolster employee job satisfaction. The analysis of the QWL further revealed mean score of $3.47 \pm .38$, reflecting a Moderate level. Upon scrutinizing specific facets, the results indicated commendable

performance across various areas. Particularly notable was the "Healthy and Safe Environment" dimension, earning an encouraging assessment with mean score of $3.80 \pm .61$. Equally significant, the "Chance in Potential Development" aspect garnered an admirable mean score of $3.74 \pm .66$ within the excellent range. Additionally, both the "Social Integration" and "Working Democratic" dimensions achieved an excellent level, attaining mean scores of $3.72 \pm .62$ and $3.66 \pm .64$, respectively. Nonetheless, the "Balance of Working Life" dimension obtained a Moderate level rating, with mean score of $3.53 \pm .71$. Similarly, dimensions such as "Social Relationship" and "Adequate and Fair Income" were positioned within the Moderate range, registering mean scores of $3.44 \pm .84$ and $3.34 \pm .42$, respectively. Lastly, the "Advance and Firm" dimension exhibited the lowest score within the Moderate level, recording mean score of $3.24 \pm .47$, as outlined in Table 2. These insights reflect the ongoing influence of the pandemic, highlighting the need for adaptable strategies to improve the QWL amidst these changing dynamics.

Table 2 Mean and standard deviation (S.D.) of the quality of life at work

Variable (n=399)	Mean	S.D.	Level
Fair and adequate remuneration	3.34	.42	Moderate
Suitable and safe settings	3.71	.61	Excellent
Possibilities for capacity development	3.74	.66	Excellent
Progress and safety	3.24	.47	Moderate
Collaboration versus social inclusion	3.61	.62	Excellent
Workplace democracy versus. job descriptions.	3.57	.33	Excellent
Work-life balance.	3.47	.71	Moderate
Sociocultural importance and benefits.	3.44	.84	Moderate
Mean	3.47	.38	Moderate

The findings of the lifestyle research are connected to the quality of life at work. It was shown that lifestyle has a statistically significant relationship with work life quality at .05. The correlation matrix depicted above shows the relationships between many factors such as health, nutrition, physical well-being, stress, relationship quality, and spirituality. Notably, the correlations are as follows: health and nutrition demonstrate a correlation coefficient of .665; nutrition and physical well-being are correlated at .379; health and physical well-being hold a correlation of .552; stress and health exhibit a correlation of .715; stress and nutrition correlate

at .767; stress and physical well-being have a correlation coefficient of .499; relationship quality and health correlate at 1.054; relationship quality and nutrition are correlated at .470; relationship quality and physical well-being hold a correlation of .312; relationship quality and stress exhibit a correlation of .382; and finally, the correlation between spirituality and health, nutrition, physical well-being, stress, and relationship quality is .329, .598, .214, .494, and .404 respectively. The total mean correlation across all dimensions is .676. This matrix provides a comprehensive insight into the interrelationships among these dimensions within the scope of the study.

Table 3 shows the correlation between manner of life and working life quality (n=399).

	Health	Nutrition	physical	Stress	Relationship	spirituality
Health	1					
Nutrition	.665 *	1				
physical	.552 *	.379 *	1			
Stress	.715 *	.767 *	.499 *	1		
Relationship	1.054 *	.470 *	.312 *	.382 *	1	
spirituality	.329	.598 *	.214 *	.494 *	.404 *	1
Mean	.460 *	.588 *	.370 *	.280 *	.279 *	.676 *

*P < .05

Note

Health as a way of life in relation to health responsibility the relationship of nutrition to the aspect of lifestyle pertaining to dietary behaviors Physical exercise as a feature of a healthy way of life Stress in relation to a way of living that involves stress management reference to the aspect of lifestyle that relates to interpersonal interactions Spirituality is a style of living that considers spiritual growth

The examination of correlations between the "Way of Life" dimensions and the "Quality of Working Life" (QWL) revealed noteworthy patterns. Specifically, attributes such as health ($r = .40^*$), nutrition ($r = .48^*$), stress ($r = .55^*$), and spiritual development ($r = .61^*$) demonstrated low to Moderate positive correlations with QWL. Conversely, physical activity ($r = .26^*$) and interpersonal relationships ($r = .18^*$) exhibited relatively lower correlations. These findings underscore the multifaceted nature of the relationship between individuals' way of life choices and their perceived quality of working life, highlighting the relevance of holistic well-being in shaping a positive professional experience as in table 4.

Table 4 shows the association between lifestyle and job satisfaction (n=399).

Variable	The relationship with the QWL		
	Pearson (r)	Sig.	Relationship
Health	.40*	.00	Low
Nutrition	.48*	.00	Low
Physical	.26*	.00	Low
Stress	.55*	.00	Low
Relationship	.18*	.00	Lowest point
Spiritual	.61*	.00	Moderate
Mean	.41	.00	Low

*P < .05

Health is a way of life that emphasizes health responsibility. Nutrition is a way of life that revolves around food. Physical is a manner of life centered on physical exercise. Stress is a style of life that revolves around stress. Relationship is a style of life centered on relationships. Spirituality is a style of life centered on spiritual growth.

Research Discussion

This study aimed to (1) assess the level of Quality of Working Life (QWL) among working-age individuals under standard working conditions, (2) evaluate changes in QWL under shifting occupational and workplace environments, and (3) investigate the relationship between health-related factors—namely nutritional responsibility, physical activity, and stress management—and QWL. The findings provide important insights into how the Thai working population has adapted in the post-pandemic era.

First, the results indicate that respondents reported a high level of overall quality of life, while their quality of working life remained at a moderate level. This suggests that although individuals perceive their general well-being positively, workplace-related factors may not have improved at the same pace. This finding contrasts with earlier research by Wirote et al. (2015), which emphasized economic sufficiency as a key determinant of workers' quality of life in Samut Sakorn Province, where QWL was also reported at a moderate level. The divergence in findings may be attributed to the temporal context, as the present study reflects post-pandemic recovery dynamics, including shifts toward flexible work arrangements, digital transformation, and evolving employee expectations. Similarly, the moderate level of QWL



observed in this study aligns with Visarut (2014), who found that employees at NY Food Co., Ltd. maintained a reasonable balance between work and personal life. This consistency suggests that work–life balance remains a central but only partially fulfilled component of QWL, even across different organizational and temporal contexts.

Second, the study highlights a significant relationship between overall lifestyle (way of life) and QWL, indicating that improvements in personal lifestyle behaviors are associated with better perceptions of working life quality. This supports the notion that QWL is not solely determined by organizational conditions but is also shaped by individual behavioral and psychological factors. More specifically, nutritional responsibility, physical activity, and stress management were found to have statistically significant relationships with QWL. These findings are consistent with Lalita (2012), who emphasized that health-promoting behaviors—such as proper diet, regular exercise, and relaxation—contribute to improved work efficiency and well-being. The present study extends this understanding by demonstrating that such behaviors also play a critical role in shaping employees’ perceptions of their working life. In contrast, spiritual growth and interpersonal relationships did not show statistically significant associations with QWL in this study. While spiritual growth demonstrated a moderate level of correlation, its overall impact was limited, and interpersonal relationships showed the weakest effect. This finding may reflect changing workplace dynamics in the current era, particularly the rise of remote work and reduced face-to-face interaction, which may weaken the influence of social connections in the workplace. Alternatively, it may suggest that practical and health-related factors are prioritized over psychosocial dimensions in determining QWL in the post-pandemic context. Overall, the relationship between lifestyle factors and QWL was found to be relatively weak, indicating that while these variables are related, they do not fully explain variations in QWL. This suggests the presence of additional influencing factors, such as organizational policies, job security, leadership style, and economic conditions, which were not fully captured in this study.

In conclusion, this research contributes to the growing body of knowledge on QWL by offering a psychological and behavioral perspective on the Thai working population in the current era. The findings underscore the importance of integrating health-promoting behaviors with organizational strategies to enhance QWL. Future research should explore additional variables and adopt longitudinal designs to better understand how QWL evolves over time, particularly in response to ongoing societal and workplace transformations.

Conclusion



This study examined the quality of work life (QWL) and lifestyle conditions of the target population, revealing a mean score of 3.47 for both dimensions. While the overall lifestyle level was interpreted as high, QWL remained at a moderate level, indicating a disparity between general living conditions and work-related well-being. In the post-pandemic context, the evolving work-life landscape has introduced new challenges and opportunities that influence these outcomes. Notably, four dimensions—Healthy and Safe Environment, Opportunity for Potential Development, Social Integration, and Workplace Democracy—demonstrated high levels, reflecting strengths in organizational and social structures. In contrast, the remaining dimensions were rated at a moderate level, underscoring the need for targeted interventions to enhance overall QWL. This contrast highlights critical areas for improvement that governmental agencies and policy stakeholders should address to ensure balanced and sustainable workforce development. A key finding of this study is the statistically significant relationship between QWL and productivity, reinforcing the importance of improving work-life conditions as a pathway to enhanced performance and organizational effectiveness. In response, the establishment of dedicated consulting and activity centers is recommended to support employee well-being and professional development. Future research should expand the scope of investigation to include multiple provinces with diverse economic and cultural contexts, enabling broader generalizability of findings. Additionally, longitudinal studies examining the prolonged effects of the post-pandemic recovery phase would provide deeper insights into the dynamic nature of QWL. Furthermore, this study underscores the importance of incorporating psychological dimensions into QWL assessments. Understanding the interplay between psychological well-being and work quality can offer valuable guidance for individuals, organizations, and policymakers. For individuals, such insights enable more informed decisions regarding career development, work-life balance, and stress management. For organizations, the findings support the design of work environments that foster autonomy, job satisfaction, and positive interpersonal relationships, ultimately enhancing morale, productivity, and retention. For policymakers, integrating psychological considerations into labor frameworks can contribute to sustainable economic growth and societal well-being.

In conclusion, advancing QWL—particularly through a psychological lens—represents a critical pathway toward creating more supportive, productive, and fulfilling work environments in an increasingly complex and evolving global context.

Suggestions

Recommendations for Policy and Practice



Governmental agencies and policy stakeholders should prioritize targeted interventions to improve dimensions of QWL that remain at moderate levels. Strategic policies focusing on equitable compensation, workload management, and job security are essential to complement the already strong dimensions such as workplace safety and social integration. The establishment of dedicated consulting and activity centers is strongly recommended to provide continuous support for employee well-being, career development, and psychosocial health.

Future Research Directions

Future studies should expand the geographical scope to include diverse provinces or regions with varying economic, cultural, and organizational contexts to enhance the generalizability of findings. Comparative studies across sectors or demographic groups would also provide deeper insights into how QWL varies among different populations.

Longitudinal research is recommended to examine the long-term effects of post-pandemic recovery on QWL and productivity, enabling a better understanding of causal relationships and evolving trends. Furthermore, future investigations should place greater emphasis on psychological variables—such as motivation, resilience, and emotional well-being—to better capture their role in shaping work-life quality.

Reference

- Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 22(3), 273–285.
- Carayon, P., & Smith, M. J. (2000). Work organization and ergonomics. *Applied Ergonomics*, 31(6), 649–662.
- Cascio, W. F. (2016). *Managing human resources: Productivity, quality of work life, profits* (10th ed.). McGraw-Hill.
- Davis, K., & Newstrom, J. W. (1989). *Human behavior at work: Organizational behavior* (8th ed.). McGraw-Hill.
- Guest, D. E. (2017). Human resource management and employee well-being: Towards a new analytic framework. *Human Resource Management Journal*, 27(1), 22–38.



- Kittiprapas, S., & Suthiphand, C. (2019). Quality of work life of Thai workers: Trends and implications. *Journal of Social Development*, 21(2), 45–62.
- Kniffin, K. M., Narayanan, J., Anseel, F., et al. (2021). COVID-19 and the workplace: Implications, issues, and insights for future research and action. *American Psychologist*, 76(1), 63–77.
- Koonmee, K., Singhapakdi, A., Virakul, B., & Lee, D. J. (2010). Ethics institutionalization, quality of work life, and employee job-related outcomes. *Journal of Business Research*, 63(1), 20–26.
- Lalita, S. (2012). Health-promoting behaviors and their impact on work efficiency and well-being. *Journal of Occupational Health Psychology*, 17(3), 245–256.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer.
- Pender, N. J., Murdaugh, C. L., & Parsons, M. A. (2015). *Health promotion in nursing practice* (7th ed.). Pearson.
- Siengthai, S., & Pila-Ngarm, P. (2016). The interaction effect of job redesign and job satisfaction on employee performance. *Evidence-based HRM*, 4(2), 162–180.
- Sirgy, M. J., Efraty, D., Siegel, P., & Lee, D. J. (2001). A new measure of quality of work life (QWL) based on need satisfaction and spillover theories. *Social Indicators Research*, 55(3), 241–302.
- Sirgy, M. J., Efraty, D., Siegel, P., & Lee, D. J. (2001). A new measure of quality of work life. *Social Indicators Research*, 55(3), 241–302.
- Visarut, P. (2014). *Quality of working life among employees at NY Food Co., Ltd.* Bangkok: Kasetsart University Press.
- Walton, R. E. (1975). Criteria for quality of working life. In L. E. Davis & A. B. Cherns (Eds.), *The quality of working life* (pp. 91–104). Free Press.
- Warburton, D. E. R., & Bredin, S. S. D. (2017). Health benefits of physical activity. *Current Opinion in Cardiology*, 32(5), 541–556.
- Wirote, K., Somchai, T., & Anong, P. (2015). Determinants of quality of life among workers in Samut Sakorn Province. *Thai Journal of Public Health*, 45(2), 123–135.
- World Health Organization. (2020). *Healthy diet*. <https://www.who.int>