International Academic Institute for Science and Technology

International Academic Journal of Organizational Behavior and Human Resource Management
Vol. 12, No. 4, 2025, pp. 18-26.

ISSN 2454-2210

International Academic Journal of Organizational Behavior and Human Resource Management

www.iaiest.com

Exploring the Relationship Between Work-Life Balance and Employee Productivity Through the Spillover-Crossover Model

Zhiyi Chen [a]

[a] *The Third Affiliated Hospital of Guangzhou Medical University, Guangzhou, China.*
E-mail: winchen@vip.126.com

Abstract

In the modern-day workplace, more complexities in the workplace and flexibility in work schedules have put more focus on the role of work-life balance (WLB) in order to enhance the outcomes of employees. Although extensive studies have been done, there has been a dearth of studies examining the combined impact of spillover and crossover processes in determining the influence of WLB on employee productivity. The current study aims at exploring the direct and indirect effect of WLB on productivity through spillover and crossover. Quantitative method was a survey-based (n = 172) one that involved employees who worked in different industries. Data analysis was conducted using structural equation modeling (SEM), which involved scrutinizing the hypothesized relationships. Findings indicate that WLB has a positive effect on productivity (β = 0.32) and a positive effect on spillover (β = 0.45), which in turn has a positive effect on crossover (β = 0.51). The positive effect of crossover extends to productivity (β = 0.29), which implies the mediating effect of spillover and crossover. The results emphasize the significance of intra-individual (within the person) and interpersonal (between people) processes in the determination of productivity. This study contributes to the literature on organizational behavior as it expands upon the Spillover-Crossover Model and provides suggestions on human resource policies and practices to improve the well-being and productivity of employees.

Keywords: Work-Life Balance, Spillover Effect, Crossover Effect, Employee Productivity, Structural Equation Modeling, Organizational Behavior.

DOI:10.71086/IAJOBHRM/V12I4/IAJOBHRM1215
Received: 18 September 2025/Revised: 09 October 2025/Accepted: 25 November 2025/Published: 29 December 2025

Introduction

Technological change, globalization, and the introduction of flexible work arrangements (telework/hybrid) have significantly transformed the modern work environment. Such changes have resulted in a higher level of work-non-work overlap that may cause higher work stress and the inability to balance work and non-work life. The increased boundary permeability has intensified issues of concern regarding the complexities in the handling of various demands by employees, thus making work-life balance (WLB) a relevant research question in the study of organizational behavior (Mordi et al., 2024).

Productivity has never been left behind as one of the success drivers that have influenced the competitiveness, efficiency, and sustainability of organizations. Now it is clear that productivity depends not only on technical knowledge or the resources that are offered by the organization but also on the psychological well-being and work-life balance of workers (Haar et al., 2024). In this respect, work-life balance has become one of the essential elements that boost the well-being of employees, job satisfaction, and performance.

Work-life balance is explained as the level of how well work and personal spheres of life can be maintained. It deals with reducing the work-family conflict as well as maximizing the positive work-family interactions. According to the recent studies, it is essential to emphasize that positive emotions are more likely to be felt by balanced employees, and this fact predetermines their increased engagement and performance (García-Salirrosas et al., 2023). Conversely, imbalance is linked to stress and burnout and low productivity.

Although the number of studies on work-life balance has increased, there is a gap in research. Most of the studies primarily focus on the direct relationship between work-life balance and work performance, but do not take into consideration the psychological and social mechanisms that underlie this relationship. In particular, there is a dearth of empirical research that centers on the Spillover-Crossover Model that provides a comprehensive perspective on spillover in individuals (spillover) and between individuals (crossover) (Reiche et al., 2023).

The spillover effect explains the effect of an experience in one role (e.g., work) on an outcome in another role (e.g., family) in a particular individual, and the crossover effect is the transfer of an experience between individuals (e.g., between one spouse and another) (Ratnaningsih et al., 2023). Combining the two mechanisms, will be able to explain better the direct and indirect impacts (via interpersonal and intrapersonal mechanisms) of work-life balance on employee productivity.

Accordingly, this study aims to:

- Explore the impact of the work-life balance on productivity.
- Investigate spillover effects as in-person processes.
- Discover crossover effects as between-individual effects.

Paper Organization

The paper is divided into the following sections: Section 1 deals with introduction; Section 2 deals with literature review and formulation of hypotheses; Section 3 deals with methodology; Section 4 deals with results and analyses; Section 5 deals with discussion; and Section 6 deals with conclusion.

Literature Review

"Work-life balance" refers to the ability of an individual to cope with various roles of work and personal life. It is a multi-dimensional construct, which consists of time balance, involvement balance, and satisfaction balance. It is based on role theory, according to which individuals have a number of roles, which may be conflicting or complementary, and boundary theory, which is devoted to the boundaries people create between their working and family roles (Mordi et al., 2024).

Recent studies indicate that work-life balance mediates the increased well-being and satisfaction. Indicatively, research indicates that work-life balance is a factor that is significant in life satisfaction and family well-being (Schnettler et al., 2025). Moreover, work-life balance has been reported to increase job satisfaction through mechanisms including positive emotional spillovers and stress alleviation (García-Salirrosas et al., 2023).

Employee productivity is the degree of efficiency and effectiveness of the employee's work performance that is typically quantified in terms of quality of the output, performance, and achievement. Organizational and psychological processes can impact it.

Studies have indicated that the better the work-life balance, the more the employees are in a better state of personal well-being that reflects improved productivity. However, the imbalance would lead to stress and exhaustion, which are detrimental to the performance (Haar et al., 2024). What is more, productivity is not only dependent on the person but can also be influenced by interpersonal aspects both within and outside of the workplace (Sanz-Vergel et al., 2025).

Spillover theory explains the spillover of experiences, feelings, and behaviors of one situation or role of an individual to another situation or role. The spillovers may be either positive or negative.

Positive spillover refers to the positive experience in one area spilling into another, e.g., in the case of work skills and positive moods at work spilling over into family life. Job satisfaction and well-being are positively linked with positive spillover of work to family (García-Salirrosas et al., 2023). And constructive in-job experiences may also help to reduce conflict and enhance balance in domains (Sahay & Wei, 2023).

Negative spillover, on the other hand, is the situation when the stress, tension, or conflict in one area affects another negatively. As an illustration, more work-life conflict is caused by high work demands and time pressures, leading to lower levels of satisfaction and performance (Lott & Wöhrmann, 2023). Negative spillover is also brought about by the invasion of technology as a result of boundary blurring and stress (Mordi et al., 2024).

The crossover theory goes beyond this by considering the sharing of experiences between people, i.e., between spouses or co-workers or team members. The well-being, stress, and emotions of a person can be passed on to another and influence the moods and behaviors.

Studies have indicated that a work-family conflict by one partner may transpire to affect the other partner negatively, and the other partner may experience the spillover effects (Ratnaningsih et al., 2023). Similarly, communication and support between spouses are essential in generating positive crossover effects that are helpful to individuals and families (Matei & Vîrgă, 2023). Social interactions within the workplace also have crossover effects on creativity, engagement, and performance (Wang et al., 2024).

The Spillover-Crossover Model is a model that incorporates both the intra-individual (spillover) and inter-individual (crossover) in explaining the impacts of work-life experiences. In this approach, it is suggested that work experiences initially spill over to the individual and subsequently to others.

The current studies emphasize the importance of considering both to explain complexities in work-family relations. As an example, research on expatriates has revealed the extent to which the engagement and work-family interactions take place through spillover and crossover (Reiche et al., 2023). Similarly, work-to-life spillover has been observed to influence organizational commitment mostly in flexible work schedules (Kim & Oh, 2025).

Research Gap

Although a considerable amount of research has been undertaken on work-life balance, spillover, and crossover effects, there has been a gap in integrated empirical studies on the whole chain of work-life balance → spillover → crossover → productivity. Existing studies seem to focus on either intrapersonal or interpersonal impacts but not on the productivity impact. This impedes a holistic picture of the work-life balance phenomenon both in social and organizational worlds.

Hypotheses Development

The hypothesis above is as a result of the literature above:

H1: Work-life balance positively influences the performance of the employees. (On evidence of WLB and well-being/performance)

H2: Positive spillover is positively influenced by work-life balance. (Balanced people interact more with the positive domains.)

H3: Negative spillover reduces performance. (Decreased productivity)

H4: Spillover is a strong influence over crossover effects. (Individual events have spillovers to others.)

H5: Crossover effects are important in employee productivity. (Effects on productivity being interpersonal)

H6: WLB has an effect on productivity through the influence of spillover and crossover. (Indirect effects are explained by related mechanisms.)

Methodology

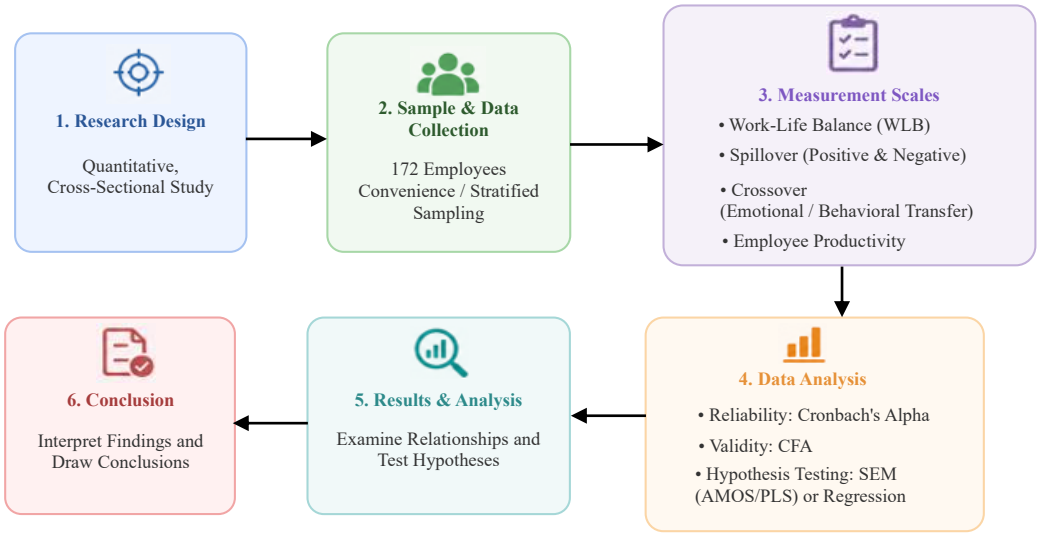


Fig. 1: Research Methodology Flow Diagram

This study has adopted a general research methodology as shown in fig. 1. It starts with a quantitative, cross-sectional research design, sample selection, and data collection of 172 employees with a structured questionnaire. It is then followed by the measurement of key constructs of work-life balance, spillover, crossover, and employee productivity through Likert-scale items. The data obtained are then examined in terms of reliability and validity tests as well as testing of the hypotheses by use of structural equation modeling or regression. Lastly, the interpretation of results and drawing of conclusions are the final steps in the process of research as offer a methodical way of exploring the relationships between the variables under study.

Research Design

This research will use a quantitative, cross-sectional study design to test the correlation between work-life balance and employee productivity using the spillover crossover model. The quantitative method is the right one because it allows testing relationships between variables with the help of statistical methods and testing hypotheses. Cross-sectional design is the approach, which presupposes gathering information about the respondents at one point in time to be able to evaluate the relations between work-life balance, spillover, crossover, and productivity in a specific population.

Sample and Data Collection

The study sample will be limited to those employees who work in the IT, corporate, and mixed-sector organizations, with work-life balance issues being of special concern in such circumstances because of the dynamic nature of work and flexible work schedules.

One hundred and seventy-two respondents took part in the research. The sample size is believed to be sufficient to perform the multivariate statistical analysis, including structural equation modeling.

The structured questionnaire was chosen as the mode of data collection to enhance the accessibility and participation of more individuals by distributing the questionnaire online and offline. The research used a convenience method of sampling, whereby the respondents were sampled depending on the availability and readiness to participate. In others, aspects of stratification were taken into account to make sure that there was a representation of various job positions and sectors.

The purpose of the study was explained to all the respondents, and it was voluntary. Anonymity and confidentiality were observed so as to make responses unbiased.

Measurement Scales

The measurement constructs in the study were in the form of standardized measurements that were modified into a structured questionnaire on a five-point Likert scale (1 strongly disagree-5 strongly agree).

Work-Life Balance (WLB)

Measured in terms of items that reflect perceptions of the ability of individuals to handle work and personal roles in an effective manner.

Spillover Effects

Assessed through two dimensions:

- *Positive spillover* (e.g., transfer of skills, positive mood)
- *Negative spillover* (e.g., stress, fatigue, role conflict)

Crossover Effects:

Quantified through the assessment of the level of impact of employees' experiences, emotions, and level of stress on other people, including colleagues or family members.

- Employee Productivity

Measured through self-reported instruments that dwelled on performance of the tasks, efficiency, and perceived work outcome.

Each of the measurement items was made as clear, relevant, and in line with the objectives of the study.

Data Analysis

The data obtained were evaluated with the help of the statistical software to prove the hypotheses suggested and justify the research model.

Reliability Analysis

The measurement scales were also evaluated on internal consistency based on Cronbach's Alpha, and acceptable threshold values were considered to be reliable constructs.

Validity Analysis

Construct validity, such as convergent and discriminant validity of the measurement model, was assessed by Confirmatory Factor Analysis (CFA).

Hypothesis Testing

Structural Equation Modeling (SEM) was used to analyze the relationships between variables in their structure. This will enable several relationships to be analyzed simultaneously, such as direct and indirect effects. Alternatively, the relationships may be validated by means of regression analysis where necessary.

The purpose of the analysis was to find out the strength and significance of the relationship between work-life balance, spillover, crossover, and employee productivity and test the mediating effects hypothesized in the study.

Structural Model Equations

To empirically test the hypothesis of relationships between work-life balance, spillover, crossover, and employee productivity, the following are the structural equations.

The former equation is the impact that work-life balance has on spillover. The work-life balance is modeled to have a spillover as seen in equation (1):

$$SP = \beta_1 WLB + \epsilon_1 \qquad (1)$$

Equation (1) suggests that the changes in the $spillover$ (SP) are attributed to $work - life\ balance$ (WLB) as well as an error term ϵ_1.

The second equation is used to describe the correlation between spillover and crossover. The spillover effects affect crossover as shown in equation (2):

$$CR = \beta_2 SP + \epsilon_2 \qquad (2)$$

As indicated in equation (2), $crossover$ (CR) was calculated using $spillover$ (SP), which implies that the transmission of experiences of the individual level to other people is calculated.

Work-life balance, spillover, and crossover are combined into a single equation to determine their effects on employee productivity. This is a relationship as given in equation (3):

$$PR = \beta_3 WLB + \beta_4 SP + \beta_5 CR + \epsilon_3 \qquad (3)$$

Equation (3) shows that work-life balance has a direct effect on employee $productivity$ (PR) and an indirect effect via spillover and crossover.

Last but not least, the total mediation form of the model is in the functional form in equation (4):

$$PR = f(WLB \rightarrow SP \rightarrow CR) \qquad (4)$$

The entire mediation process is shown in equation (4), where work-life balance influences productivity through sequential spillover and crossover effects.

Results & Analysis

Descriptive Statistics and Reliability Analysis

Table 1 gives descriptive statistics and reliability results of the key constructs. The average scores reveal that the respondents have moderate-to-high work-life balance, spillover, crossover, and employee productivity. The standard deviation values imply reasonable variability in the data.

Cronbach's Alpha was used to assess reliability, and all constructs had values above the suggested 0.70, indicating good internal consistency. These findings confirm that the measurement scales employed in the study are sound and can be used in the analysis to yield further results.

Table 1: Descriptive Statistics and Reliability Analysis

Variables	Mean	Std. Deviation	Cronbach's Alpha
Work-Life Balance (WLB)	3.78	0.64	0.86
Spillover (SP)	3.65	0.71	0.83
Crossover (CR)	3.59	0.68	0.81
Productivity (PR)	3.82	0.62	0.88

Validity and Structural Model Analysis

Confirmatory Factor Analysis (CFA) was done to determine construct validity. Good convergent and discriminant validity was indicated by the model's fit indices (e.g., CFI > 0.90, RMSEA < 0.08).

SEM was used to test the model to provide answers to the hypothesized relationships. Fig. 2 shows the standardized path coefficients for the variables and presents the results of the structural model.

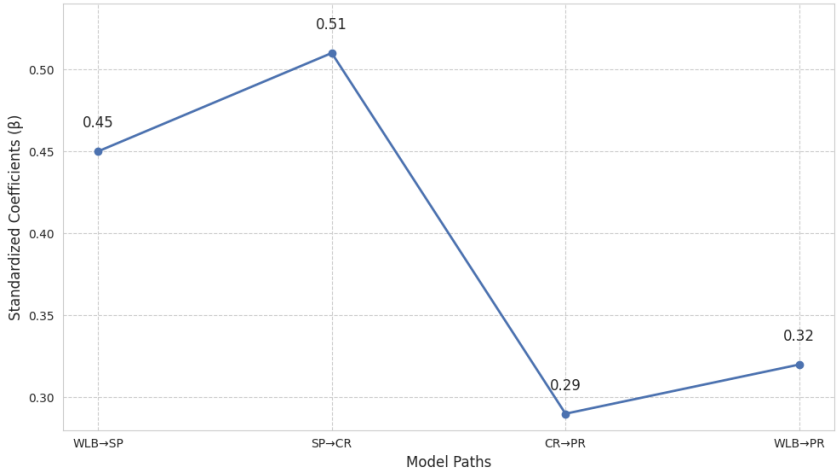


Fig. 2: Structural Equation Model Results

Fig. 2 shows the path coefficients of the structural model (standardized) in the form of a line graph, which shows the strength and direction of the relationships between the study variables. As fig. 2 indicates, work-life balance positively affects both spillover and employee productivity, whereas spillover negatively affects productivity but strongly positively affects crossover. Moreover, crossover has been proven to have a positive effect on employee productivity. The graphical analysis has clearly shown differences in the path coefficients across the hypothesized relationships, thus illustrating the importance of both the direct and the indirect effects in the spillover-crossover model.

Hypothesis Testing

Table 2 summarizes the results of hypothesis testing. All hypothesized relationships were found to be statistically significant, supporting the proposed research model.

Table 2: Hypothesis Testing Results

Hypothesis	Relationship	Path Coefficient (β)	Result
H1	WLB → PR	0.32	Supported
H2	WLB → SP	0.45	Supported
H3	SP → PR (Negative effect)	-0.28	Supported
H4	SP → CR	0.51	Supported
H5	CR → PR	0.29	Supported
H6	Mediation (WLB → SP → CR → PR)	Significant	Supported

On the whole, the findings suggest that work-life balance has a significant impact on employee productivity and exerts both direct and indirect effects through spillover and crossover. The structural associations supported by SEM demonstrate the strength of the suggested model and the significance of both individual- and interpersonal processes in influencing productivity outcomes.

Discussion

This research provides strong empirical evidence for the hypothesized relationships among work-life balance, spillover, crossover, and employee productivity. The findings suggest that work-life balance impacts employee productivity directly and indirectly, underscoring its importance in determining personal performance outcomes. When employees are well balanced between work and family life, likely to have better well-being, which reflects positively in increased productivity.

The analysis also indicates that the spillover is a major mediating variable between the work-life balance and productivity. Positive spillover is beneficial. It cross-domain positive feelings and abilities, whereas negative spillover is detrimental because it causes stress and fatigue. This duality of spillover underscores the importance of controlling both positive and negative experiences in individuals.

These findings indicate that crossover effects significantly impact employee productivity. Such experiences and emotional states do not just pertain to individuals but tend to transcend to others in their social and professional lives. This observation highlights the interpersonal aspect of productivity, whereby colleagues' and family members' experiences can indirectly contribute to work outcomes.

Compared to the prior research, the findings are consistent with the current research, highlighting the relevance of work-life balance in enhancing well-being and performance. Nevertheless, this research empirically validates the integrated spillover-crossover construct, providing a more detailed explanation of how work-life balance affects productivity in both intra-individual and inter-individual processes. The addition of spillover and crossover effects provides a better understanding of the multifaceted mechanisms underlying work-life balance and performance.

In general, the research indicates that productivity is not only a personal but also a complex process, influenced by intertwined psychological and social mechanisms. The integration of spillover and crossover mechanisms provides an integrated view of employee performance in the modern work environment.

Implications

The study serves to advance the literature on organizational behavior and human resource management by enhancing the spillover-crossover model of employee productivity. It brings together processes at the individual and interpersonal levels into a single framework, thereby adding depth to theoretical knowledge of how work-life balance functions within complex organizational systems.

In practice, the results indicate that companies should emphasize strategies that promote work-life balance to boost employee productivity. Flexible work policies, including remote work and flexible hours, should be encouraged, as would allow employees to better balance work and life.

Organizations are also advised to focus on reducing negative spillover by ensuring that workloads are not too heavy, burnout is avoided, and work and life boundaries are clearly set. Also, positive workplace interactions can be promoted by supporting a positive organizational culture, which allows crossover effects to be beneficial and, therefore, boost the overall team's performance. Employee well-being training programs and initiatives can also support these goals.

Limitations and Future Research

Although it has contributed, this study has some limitations. To begin with, the research design adopted is cross-sectional, limiting the ability to develop causal relationships between the variables. Future studies may adopt longitudinal designs, which are more effective at capturing temporal changes and making strong causal inferences.

Second, the research uses self-reported data that can bring bias in responding to the research and can compromise the accuracy of results. Multi-source data, e.g., supervisor ratings or objective performance indicators, could be added to future research to improve the validity.

Lastly, other variables that might be investigated in future research include employee engagement, organizational culture, and leadership styles as moderators or mediators in the model. Generalizing the study to other industries and cultural settings would enhance the results' generalizability.

Conclusion

This study has explored the interrelationships between work-life balance and employee productivity based on the spillover-crossover model, both theoretically and empirically. The results indicate that work-life balance is a very important factor in improving employee productivity, both directly ($\beta = 0.32$) and indirectly (through spillover and crossover). It was discovered that spillover is a vital mediating factor, with work-life balance positively affecting spillover ($\beta = 0.45$), which, in turn, affects crossover ($\beta = 0.51$). Crossover was found to be a strong predictor of employee productivity ($\beta = 0.29$), indicating that the role of interpersonal dynamics in organizational performance is important. The findings highlight that employee productivity is not a purely individual-level phenomenon but is influenced by interrelated social and psychological processes. The research supports promoting work-life balance to minimize negative spillover, increase positive experiences, and foster conducive interpersonal conditions. In a broader sense, the results highlight how organizations should adopt holistic human resource approaches to address not only individual welfare but also social dynamics in the workplace. The current study can be enhanced in future research by using longitudinal designs, utilizing multi-source data, and investigating other moderating factors, such as leadership styles, organizational culture, and remote work dynamics, to further clarify the associations between work-life balance and productivity.

References

Lott, Y., & Wöhrmann, A. M. (2023). Spillover and crossover effects of working time demand on work–life balance satisfaction among dual-earner couples: The mediating role of work–life conflict. *Current Psychology*, *42*(15), 12957-12973. https://doi.org/10.1007/s12144-022-03850-0

Ratnaningsih, I. Z., Idris, M. A., & Yulita. (2023). Testing spillover-crossover effects of work-family conflict and family-work conflict on Indonesian spouses. *Cross Cultural & Strategic Management*, *30*(2), 197-218. https://doi.org/10.1108/CCSM-01-2022-0015

Reiche, B. S., Dimitrova, M., Westman, M., Chen, S., Wurtz, O., Lazarova, M., & Shaffer, M. A. (2023). Expatriate work role engagement and the work–family interface: A conditional crossover and spillover perspective. *Human Relations*, *76*(3), 452-482. https://doi.org/10.1177/00187267211046816

Sahay, S., & Wei, W. (2023). Work-family balance and managing spillover effects communicatively during COVID-19: nurses' perspectives. *Health Communication*, *38*(1), 1-10. https://doi.org/10.1080/10410236.2021.1923155

García-Salirrosas, E. E., Rondon-Eusebio, R. F., Geraldo-Campos, L. A., & Acevedo-Duque, Á. (2023). Job satisfaction in remote work: The role of positive spillover from work to family and work–life balance. *Behavioral Sciences*, *13*(11), 916. https://doi.org/10.3390/bs13110916

Wang, S., Rofcanin, Y., Las Heras, M., & Yalabik, Z. (2024). The more you connect, the less you connect: An examination of the role of phubbing at home and job crafting in the crossover and spillover effects of work–family spousal support on employee creativity. *Journal of Occupational and Organizational Psychology*, *97*(3), 1100-1128. https://doi.org/10.1111/joop.12503

Mordi, C., Ajonbadi, H. A., & Adekoya, O. D. (2024). Technology infiltration: Permeable boundaries and work–life spillover experiences among academics in the United Kingdom during the COVID-19 pandemic. *Personnel Review*, *53*(5), 1269-1288. https://doi.org/10.1108/PR-10-2022-0693

Matei, A., & Vîrgă, D. (2023). From family to work: The mediating role of family-work enrichment and conflict between communication and well-being for dual-earner couples. *Current Psychology*, *42*(17), 14555-14568. https://doi.org/10.1007/s12144-022-02747-2

Schnettler, B., Concha-Salgado, A., Grunert, K. G., Orellana, L., Saracostti, M., Beroiza, K., ... & Thomas, E. (2025). The mediating role of work–life balance between perceived partner support and satisfaction with food-related life in dual-earning parents and their adolescents. *Nutrients*, *17*(6), 1018. https://doi.org/10.3390/nu17061018

Kim, T., & Oh, M. (2025). Work-to-Life Spillover and Organizational Commitment: The Moderating Role of Flextime and Sectoral Differences Between Public and Non-Public Organizations. *Public Personnel Management*, *54*(4), 521-556. https://doi.org/10.1177/00910260251319817

Haar, J., Harris, C., & Myers, B. (2024). The effects of work-life balance on the well-being of older workers: same-same or same-different? *International Journal of Manpower*, *45*(3), 484-499. https://doi.org/10.1108/IJM-04-2022-0181

Sanz-Vergel, A. I., Rodríguez-Muñoz, A., & Antino, M. (2025). Work–family conflict and spouse's job performance: when detaching from home is key. *Work & Stress*, *39*(1), 66-82. https://doi.org/10.1080/02678373.2024.2332170