




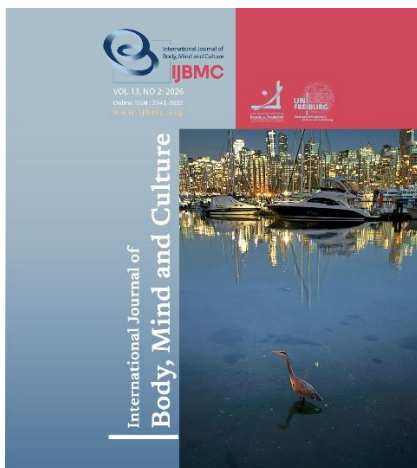
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A Grounded-Theory Model of Work–Life Balance for Knowledge Workers in Post-Pandemic Remote Work in Iran

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ABSTRACT

Objective: This study aimed to develop a qualitative, grounded-theory model of work–life balance (WLB) for knowledge workers engaged in remote work in Iran during the post-pandemic period.

Methods and Materials: Using a qualitative design within the interpretive paradigm, semi-structured interviews were conducted with 16 knowledge workers and academic experts selected through purposive snowball sampling—inclusion required at least 6 months of remote work experience during or after the pandemic. Interviews were transcribed verbatim and analyzed using Strauss and Corbin’s grounded-theory approach (open, axial, and selective coding)—constant comparison and memoing guided the analysis. Credibility was ensured through investigator triangulation, member checking, and peer debriefing. Reliability was established through double coding of transcripts, resulting in high inter-coder agreement. The institutional review board granted ethical approval, and informed consent was obtained from all participants.

Findings: The coding process generated 304 initial open codes, which were consolidated into 71 axial codes and 24 selective codes. These codes were synthesized into a paradigm model that included causal conditions, contextual factors, intervening conditions, the core phenomenon, strategies, and consequences. Strategies such as flexible scheduling, boundary setting, and technology adaptation were identified as central mechanisms, with consequences including enhanced well-being, job satisfaction, and organizational commitment.

Conclusion: The study provides a contextualized model of WLB among knowledge workers in post-pandemic Iran. The findings emphasize the importance of both individual coping strategies and organizational policies in maintaining balance during remote work.

Keywords: Work–life balance, remote work, knowledge, grounded theory, post-pandemic, Iran.

Introduction

The global outbreak of the novel coronavirus (COVID-19) has created one of the most critical crises in modern history, profoundly affecting lifestyles and work patterns worldwide. This crisis has introduced a highly unstable and hazardous condition for societies, requiring fundamental and innovative responses (Knapp, 2024). The pandemic disrupted labor markets and initiated a widespread and urgent experiment with flexible work arrangements and new relationships with centralized workplaces. In the post-COVID era, the lifestyles of people across age groups have shifted significantly, leading to new ways of living. Consequently, many organizations have started to redefine the concept of work to adapt effectively to these changes (Camilleri, 2021).

Amid these transformations, work-life balance has become a major concern for individuals, organizations, and societies. The degree of this balance varies with factors such as technological advancement, cultural and social values, organizational and governmental policies, and individual characteristics (Ramezan, 2012; Zaitouni et al., 2024). Achieving a healthy work-life balance can improve performance in both professional and personal domains. Organizations that support such balance inadvertently foster employee growth and synergy (Morrissey & Warner, 2011).

Research shows that work-life balance significantly influences employee satisfaction and motivation. Noda & Ito (2016) found that increasing time allocated to leisure and self-care, as indicators of work-life balance, positively affects life satisfaction for both men and women. Similarly, Wilkinson (2013) reported a meaningful correlation between family satisfaction and work-life balance, as well as the impact of overwork. Shujat & Bhutto (2011) demonstrated that well-implemented work-life balance practices improve employee performance and enhance organizational productivity. Kazemi & Rashidi Toghraejardi (2022) highlighted the critical role of all dimensions of work-life balance in shaping both professional and family life.

During the COVID-19 pandemic, knowledge-based organizations with knowledge workers suffered fewer losses and adapted more quickly and effectively to the imposed remote-work conditions. As a result, work-life balance among knowledge workers proved more

manageable—albeit different—than among other employee groups (Knapp, 2024; Dong et al., 2025). Knowledge workers are professionals employed in knowledge-based economies and were first categorized by Peter Drucker as engineers, consultants, computer experts, teachers, nurses, accountants, social workers, and researchers who contribute services and capabilities through their expertise (DĂNILOAIA & TURTUREAN, 2024). These individuals possess high-level cognitive skills such as abstract reasoning, data interpretation, and the ability to synthesize new insights and perspectives. Any employee with specialized knowledge or involved in skill-based consulting or research and development activities may be considered a knowledge worker (Knapp, 2024).

Given the crucial role of work-life balance in promoting physical and psychological well-being, it is an essential and vital issue (Vatharkar, 2017). In recent years, this concern has gained attention in Iran as well. Notably, Article 9 of the General Policies of the National Administrative System (2010) emphasizes the need to maintain a work-life balance, recognizing it as vital to family cohesion. Since work-life balance is a key factor in mitigating the effects of stressful conditions, developed societies have adopted various initiatives to promote it, including job enrichment strategies (Leovaridis & Vătămănescu, 2015). Therefore, it is essential to investigate the enablers of work-life balance specifically for knowledge workers.

Moreover, promoting a culture of work-life balance through the efforts of HR professionals, managers, and social media is a foundational and necessary action. Such initiatives can raise awareness of the issue's sensitivity and impact, particularly among decision-makers and organizational leaders. This study contributes significantly to the development of a theoretical framework for understanding and expanding the body of knowledge on work-life balance in organizations (Battur & Kandagal, 2022).

Between 2016 and 2017, the rate of remote work increased by 7.9%. Compared to the past five years, this growth reached 44%, and over the past decade, it amounted to 91%. From 2005 to 2017, the total increase was 159%. Given this trend and the lack of research specifically addressing work-life balance among knowledge workers in the remote work conditions of the post-pandemic era, the current study is of particular

significance in three key areas. This study aims to develop a conceptual model of work-life balance for knowledge workers working remotely in the post-pandemic era and to propose testable hypotheses regarding its constructs. It seeks to provide actionable strategies and solutions for improving work-life balance among knowledge workers in the post-COVID context. By offering a tailored model, this study aims to advance organizational practices and workforce well-being meaningfully.

Methods and Materials

Study Design

This study adopted a qualitative design within the interpretive paradigm, using the grounded theory approach of [Strauss & Corbin \(1998\)](#). This methodological choice was appropriate for exploring the complex, context-dependent phenomenon of work-life balance (WLB) in the evolving conditions of remote work following the COVID-19 pandemic. The aim was to generate a data-driven conceptual model that captures causal conditions, intervening factors, strategies, and consequences relevant to knowledge workers.

The research population consisted of knowledge workers in Iran who had direct experience with remote work during or after the pandemic, as well as academic experts in organizational behavior and human resource management. Participants were selected through purposive sampling to ensure diversity in age, gender, and organizational sector, and additional participants were recruited via snowball sampling until theoretical saturation was reached. Inclusion criteria required participants to have at least six months of remote work experience after March 2020, to be engaged in knowledge-intensive occupations (e.g., IT, education, consulting, research), and to be willing to participate in an in-depth interview. Ultimately, 16 participants (10 practitioners and 6 academic experts) were interviewed. Demographic details such as age, gender, education, professional role, and years of teleworking were collected to contextualize responses.

Semi-structured interviews were the primary method of data collection. An interview guide was developed and refined through piloting with three knowledge workers. The guide covered perceptions of work-life balance, organizational support, personal coping strategies, and

the broader contextual influences of remote work. Interviews lasted between 45 and 75 minutes, were conducted either in person or via secure online platforms, and were audio-recorded with participant consent. All recordings were transcribed verbatim, and participants were allowed to review transcripts for accuracy.

Data analysis followed Strauss and Corbin's systematic coding procedures. During open coding, 304 discrete concepts were identified from the transcripts. These were then clustered into 71 axial codes by identifying relationships among categories. Finally, 24 selective codes were synthesized into higher-level themes that were integrated into the paradigm model. Throughout the process, constant comparison and memo-writing were employed to refine categories and ensure analytical rigor. To enhance credibility and dependability, two researchers independently coded a subset of transcripts and subsequently reconciled discrepancies. Inter-coder reliability was calculated using Cohen's kappa, which yielded values above 0.80, indicating substantial agreement.

Trustworthiness was further addressed through several strategies. Member checking was conducted by sharing preliminary findings with five participants to verify the accuracy of interpretations. Peer debriefing sessions with two external qualitative researchers provided additional critical feedback. Triangulation was achieved by incorporating perspectives from both practitioners and academic experts, thereby enhancing the model's depth and applicability. An audit trail documenting coding decisions, memos, and theme development was maintained to ensure transparency.

Ethical considerations were strictly observed. Approval for the study was obtained from the institutional ethics committee of the host university (approval code and date available upon request). All participants were provided with an information sheet outlining the study's objectives, procedures, and confidentiality safeguards, and each signed a written informed consent form before participating. Pseudonyms were assigned to protect identities, and all data were stored securely on password-protected devices accessible only to the research team.

Findings and Results

Participant Characteristics

Table 1 presents the demographic profile of the 16 participants, including knowledge workers from diverse

sectors and academic experts. Participants varied in gender, age, educational level, occupational role, and duration of remote work experience. This diversity ensured the inclusion of multiple perspectives on work–life balance in remote work settings.

Table 1

Demographic characteristics of participants (n = 16)

Participant ID	Gender	Age (years)	Education Level	Occupational Role	Remote Work Experience (months)
P1	Male	34	Master's	IT Specialist	18
P2	Female	29	Bachelor's	Administrative Officer	12
P3	Male	41	PhD	University Faculty Member	24
P4	Female	36	Master's	HR Consultant	20
P5	Male	39	PhD	Researcher	30
P6	Female	32	Bachelor's	Project Coordinator	15
P7	Male	45	PhD	University Faculty Member	28
P8	Female	27	Bachelor's	Graphic Designer	10
P9	Male	33	Master's	Data Analyst	16
P10	Female	38	Master's	Marketing Specialist	18
P11	Male	44	PhD	University Faculty Member	25
P12	Female	30	Master's	Teacher (Elementary School)	14
P13	Male	37	PhD	University Faculty Member	22
P14	Female	35	Master's	Software Developer	20
P15	Male	42	PhD	Academic Expert (Management)	26
P16	Female	31	Master's	Financial Analyst	17

Note: Participant IDs are pseudonyms. Exact ages and durations are reported as approximate ranges by participants to preserve confidentiality.

During open coding, 304 initial codes were extracted from interview transcripts. These were then integrated and summarized into 71 axial codes in the axial coding stage. In the selective coding stage, these axial codes were synthesized into 24 selective codes. These selective codes were classified according to Strauss and Corbin's paradigm model into six components: causal conditions, contextual conditions, intervening conditions, the core phenomenon, strategies, and consequences. Tables 2 to

5 illustrate the coding structure and thematic integration.

Causal conditions are shown in Table 2. They included four selective codes, nine axial codes, and thirty-two open codes. These reflected individual, family, organizational, and managerial orientations that directly shaped how knowledge workers experienced remote work and work–life balance.

Table 2

Open, axial, and selective codes for causal conditions

Selective Code	Axial Code	Open Code
Individual-oriented Factors	Ethical Orientation	Work conscience; Respect for others' rights; Commitment and trust; Avoidance of nepotism
	Perfectionism	Attention to human dignity; Smart pursuit of opportunities; Perfectionism; Prudence
Family-oriented Factors	Individualism by teleworking knowledge workers	Having teleworking experience, interest in working alone, and interest in solving problems independently.
	Belief in parenting	Attending to children's issues; Spending leisure time with children; Attention to children's mental and psychological issues
Organization-oriented Factors	Patience in family matters	Spiritual strengthening; Exercise and health improvement; Endurance and resilience
	Responsibility of teleworking knowledge workers	Ethical and social responsibility; Accountability; Honesty and trustworthiness; Confidentiality
Management-oriented Factors	Organizational citizenship behavior	Proper behavior; Civic virtues; Duty consciousness; Altruism
	Balancing capability	Work–life interaction skills; Managing demands; Managing emotions
	Resource management ability	Problem-solving; Time management; Resource management; Technology management

Contextual conditions are summarized in Table 3. They included one selective code, four axial codes, and

fifteen open codes, capturing macro-level supports such as legal, social, economic, and technological frameworks.

Table 3

Open, axial, and selective codes for contextual conditions

Selective Code	Axial Code	Open Code
Macro-level factors supporting teleworking	Social support	Social acceptance of teleworking organizations; Social acceptance of workers; General acceptance of telework; Government support
	Legal support	Legal support for organizations; Legal support for workers; Special legal protections; E-government legislation
	Economic support	Support for a knowledge-based economy; Stock market incentives; Bank loans for teleworking organizations
	Technological support	Strengthening technology infrastructure; Adoption of new technologies (AI, blockchain); Transparency and digital governance

Intervening conditions are displayed in Table 4. They included one selective code, two axial codes, and nine

open codes, emphasizing individual and organizational acceptance of teleworking platforms.

Table 4

Open, axial, and selective codes for intervening conditions

Selective Code	Axial Code	Open Code
Individual and organizational acceptance of teleworking platforms	Individual acceptance	Perceived usefulness; Perceived ease of use; Perceived trust; Perceived risks
	Organizational acceptance	Compatibility; Competitive pressure; Organizational readiness; Top management commitment; Cost-benefit analysis

Consequences of work-life balance efforts are presented in Table 5. They included four selective codes, thirteen axial codes, and fifty open codes. These

consequences ranged from organizational sustainability to individual well-being.

Table 5

Open, axial, and selective codes for consequences

Selective Code	Axial Code	Open Code
Support for Sustainable Development	Organization-based support	Reducing fossil fuel use, reducing material consumption, remote service delivery, and access to goods and services.
	Employee-based support	Reduced commuting; Improved traffic; Customer time-saving; Air pollution reduction
Productivity Enhancement	Customer productivity	Increased customer share; Wider sales; Greater access; Loyal customers
	Financial productivity	Profitability; Market share; ROI; Lower administrative costs; Side service profits
	Cost productivity	Reduced operational costs; Lower marketing and HR costs; Reduced overhead
Sustainable Development	Sustainable value creation	Value addition; Higher GDP; Digital employment; Entrepreneurship
	Sustainable competitive advantage	Market positioning; Social media advertising; Tech-based competitiveness; Customer loyalty
Employee Development & Well-being	Satisfaction improvement	Job, personal, and family satisfaction
	Work-life interaction enhancement	Role interaction; Standard of living improvements
	Knowledge workers' expertise improvement	Better teleworking ability; Knowledge improvement; Technical skills
	Security improvement	Physical, mental, and intellectual security
	Self-leadership development	Self-belief; Self-efficacy; Self-control; Self-management
	Health improvement	Improved physical, mental, and intellectual health

Together, these findings demonstrate that work–life balance in remote work is shaped by a set of causal and contextual factors, moderated by intervening conditions, and enacted through multiple strategies. The outcomes highlight both individual-level improvements and organizational- and societal-level benefits when balance is achieved. The selective codes and their integration across Tables 2 to 5 provide the empirical foundation for the paradigm model presented in this study.

Discussion and Conclusion

The main goal of this research was to design a model of work-life balance for knowledge workers in remote working conditions during the post-COVID-19 pandemic era. To extract the dimensions, components, and variables of the phenomenon of work-life balance from the aforementioned texts, the qualitative grounded theory approach was used. Using this qualitative technique, 304 open codes (statements), 71 axial codes (components), and 26 selective (core) codes (variables) were identified.

The components and variables of the phenomenon of work-life balance, which were placed within each part of the Strauss and Corbin paradigm model, are as follows: The causal conditions include 4 selective codes: individual-oriented, family-oriented, organization-oriented, and management-oriented. These encompass 9 axial codes: ethical orientation, human excellence orientation, individualism among remote knowledge workers, belief in parenting by remote knowledge workers, patience in family matters by remote knowledge workers, responsibility of remote knowledge workers, organizational citizenship behavior, balancing capability of remote knowledge workers, and resource management ability — totaling 32 open codes.

The contextual conditions contain 1 selective code: macro-level supportive factors for knowledge-based remote work, which includes 4 axial codes: social support for knowledge workers, legal support for remote knowledge work, economic support, and technological support, with 15 open codes. The intervening conditions contain 1 selective code: individual and organizational acceptance of remote work platforms, and 2 axial codes: individual acceptance and organizational acceptance, comprising 9 open codes.

Strategies include 14 selective codes: boosting morale, self-leadership, mutual understanding between employee and family, building healthy family relationships, increasing knowledge and creativity, personalized treatment of employees, employee support, personal growth and excellence of knowledge workers, autonomy, justice- and merit-based systems, sensitivity to employee needs, efficient and knowledge-based management, occupational and psychological health, and seeking supra-organizational support.

Consequences include 4 selective codes: contributing to sustainable development, enhancing productivity, developing sustainable competitiveness, and improving and developing employees. These include 13 axial codes: organization-based contributions, employee-based contributions, customer productivity, financial productivity, cost productivity, sustainable value creation, sustainable competitive advantage, improved satisfaction, enhanced work-life interaction, improved skills of knowledge workers, enhanced employee security, development of self-direction, and improved employee health — totaling 50 open codes.

To improve causal conditions, the following are suggested: attention to human dignity, intelligent pursuit of opportunities, strengthening a sense of work conscience, respecting others' rights, reinforcing commitment and honesty, and avoiding nepotism. To improve contextual factors, it is recommended to attract public support and acceptance of remote knowledge organizations and remote knowledge workers, as well as societal support for remote knowledge-based work. To address intervening factors, it is suggested to increase perceived ease of use of remote work platforms, strengthen perceived trust in them, and reduce perceived risks associated with them. Limitations of the study included: geographical access restrictions to certain experts due to the wide scope of the research, inherent limitations in the understanding and interpretation of both the interviewer and interviewee, and a lack of cooperation from some experts and specialists in the field of work-life balance research.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Declaration of Helsinki, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contribute to this study.

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