Smart and Sustainable Built Environment

Managing WLB in the construction industry: a boundary theory approach

Suhair Alkilani and Martin Loosemore
Faculty of Design and Society, University of Technology Sydney, Sydney, Australia

Received 14 April 2025
Revised 17 June 2025
14 July 2025
Accepted 14 July 2025

Abstract

Purpose – There is international consensus that poor work–life balance (WLB) represents a significant health risk to many people who work in the construction industry. This study addresses the under-theorisation, methodological limitations, and lack of large-scale empirical research in this emerging field. The research aims to deepen understanding of WLB challenges faced by construction industry workers, with a focus on how they manage the boundaries between work and non-work domains.

Design/methodology/approach – The study draws on Boundary Theory as a conceptual framework and employs a mixed-methods design. It combines quantitative data from a large-scale survey ($N = 1{,}475$) and qualitative data from interviews ($N = 64$) with professionals and tradespeople across the Australian construction industry.

Findings – The findings reveal that workers in the construction industry face substantial challenges in managing the temporal, physical, and psychological boundaries between their work and non-work domains to achieve a healthy WLB and that there is a considerable degree of inequity in the resources available to enable them to do so. Young people working in junior on-site supervisory roles (especially on large commercial and infrastructure projects) appear to suffer the greatest boundary management challenges. It is also found that the very strong, impermeable and inflexible boundaries between work and non-work domains are nurtured and maintained by institutionalized workplace norms, practices and cultures which undermine the intent of formal initiatives to help people manage their temporal, physical and psychological boundaries to achieve a healthy WLB.

Originality/value – This study contributes to the limited empirical literature on work-life balance in the construction industry by applying Boundary Theory to a large and diverse sample. It contributes new insights into the institutional barriers to effective boundary management for workers across the construction industry and provides practical recommendations to help them manage the temporal, physical and psychological boundaries between their work and non-work domains more effectively to achieve a healthy and sustainable WLB.

Keywords Work-life balance, Construction industry, Boundaries, Health and wellbeing, WLB polices, WLB initiatives

Paper type Research article

Introduction

Many researchers have shown that the work-life balance (WLB) of people working in the construction industry is relatively poor compared to other sectors (Lingard and Francis, 2004; Turner *et al.*, 2009; Holden and Sunindijo, 2018; Kumar and Chaurvedi, 2018; Kotera *et al.*, 2019; Bowen and Zhang, 2020; Lingard and Turner, 2022; Tijani *et al.*, 2023; Sarhan *et al.*, 2024). However, there is little consensus on a definition of WLB both within and outside the construction industry (International Labour Organization, 2022; Sui *et al.*, 2019). Many current definitions were produced when workplace laws, regulations, technologies and community expectations about WLB differed from what they are today (Standing Committee on Economy and Gender and Economic Equality, 2021). Furthermore, researchers tend to use terms such as WLB, "work-life conflict", "work-family conflict" and "work-life alignment" interchangeably (Gragnano *et al.*, 2020). However, these terms have distinct meanings, and research shows that work and life are not always in conflict, do not always have to be aligned to be in balance and that family is only one of many non-work domains which people must

Funding: This research was funded by the NSW Master Builders Association. The research team retained full independence in conducting the study and reporting the findings.

Smart and Sustainable Built Environment
Emerald Publishing Limited
e-ISSN: 2046-6102
p-ISSN: 2046-6099
DOI 10.1108/SASBE-04-2025-0179

consider in achieving a healthy WLB (Brough *et al.*, 2020). To avoid confusion, this research defines WLB as "*The individual perception that work and non-work activities are compatible and promote growth in accordance with an individual's current life priorities*" (Kalliath and Brough, 2008, p. 324).

Numerous researchers within and outside the construction industry show that WLB is a complex and multidimensional construct influenced by a dynamic array of organisational, individual and societal factors. These include: access to flexible working opportunities; organisational cultures which encourage presenteeism; family and other caring responsibilities; community, religious and cultural commitments and expectations; personal life events; financial circumstances and cost of living pressures to name just a few (Lingard and Francis, 2009; Dinh *et al.*, 2017; Kotera *et al.*, 2019; Brauner *et al.*, 2019; Lingard *et al.*, 2021; Sarhan *et al.*, 2024; Firose *et al.*, 2025). Research within and outside construction also shows that WLB is a bi-directional concept in that work can affect life (work-to-life conflict), and life can affect work (life-to-work conflict) (Carlson *et al.*, 2000). While relatively few construction studies have considered life-to-work conflict, it has generally been found to be weak (Francis *et al.*, 2006; Lingard and Francis, 2007; Lingard *et al.*, 2010). The tendency in construction WLB research has therefore been to place responsibility for poor WLB at the employer's door and under-emphasize employee responsibilities to achieve a healthy WLB (Noon and Blyton, 2007; Kotera *et al.*, 2019). The positive impacts of work have also been largely ignored in the construction WLB literature (Lingard and Turner, 2023a, b). Yet research shows that work has many "enrichment" effects, and that people willingly work long hours for a whole host of positive reasons such as a sense of achievement, recognition, comradery and financial remuneration. To add further to the complexity, Carlson *et al.* (2000) describe WLB as an "orthogonal construct" where someone can simultaneously experience both positive and negative effects, although most WLB studies typically report one or the other. For example, a construction project manager may suffer high levels of stress and long work hours but also experience high levels of financial security and personal growth.

Despite a growing body of WLB research in the field of construction, Tijani *et al.*'s (2020) and Adah *et al.*'s (2025) recent systematic literature reviews conclude that it is under-theorized, embryonic and lacking large-scale empirical studies which reflect the individual and organisational diversity of the industry. Existing research has primarily focused on individual or organisational-level factors and interventions, while neglecting the wider structural and external environmental factors that shape workers' ability to achieve WLB. For example, while Tijani *et al.* (2023) reported the significant influence of external environmental pressures such as economic, legal, and social policy contexts on workplace mental health in the architecture, engineering, and construction (AEC) sector, their study did not specifically examine the impact of these factors on work-life balance. Moreover, persistent social inequities, particularly those experienced by underrepresented groups such as skilled female migrants, remain inadequately addressed in current WLB literature, despite their proven impact on wellbeing, inclusion, and career sustainability in construction (Alkilani and Loosemore, 2024). Addressing these broader contextual variables is essential to developing more inclusive, equitable, and effective WLB frameworks for the construction industry. The aim of this paper is to help address these gaps in research by presenting a novel application of Boundary Theory to explore the proposition that working in the construction industry does not allow people to manage the boundaries between work and non-work domains which are necessary to create a healthy WLB. The value of boundary theory is that it provides a well-established and widely tested conceptual framework to help explain how people manage the boundaries between work and personal life, leading to better understanding of WLB (Rincy and Panchanatham, 2014). Such insights are currently missing from construction industry-related WLB research, despite a number of researchers acknowledging the importance of boundary spanning initiatives to improve WLB (see Sui *et al.*, 2019). Importantly, boundary theory also provides insights into how individuals navigate transitions between roles and how

organisational practices such as those found in the construction industry and discussed in more detail below can shape these boundaries.

In exploring the above proposition, three core elements of Boundary Theory (temporal, physical and psychological boundaries) are mobilized to address the following research questions, drawing on a large-scale survey ($N = 1{,}475$) and qualitative data from interviews ($N = 64$) with professionals and tradespeople across the New South Wales (NSW) building and construction (B&C) industry in Australia.

(1) What is the current work-life balance of people working in the NSW B&C industry and how does this vary across the workforce?

(2) Does employment in the construction industry provide people with the resources necessary to create and maintain the temporal, physical, and psychological boundaries between work and non-work domains that support a healthy WLB?

(3) What types of strategies are perceived to be most effective by people working in the NSW B&C industry in supporting the management of boundaries between work and non-work domains to achieve a healthy WLB?

This paper proceeds with a discussion of boundary theory and its potential value in conceptualising WLB in the construction industry. Next, the research method is outlined and findings distilled and discussed to address the above research questions. Finally, the theoretical, empirical and practical implications and contributions of this research to the emerging field of WLB in construction internationally are discussed.

Literature review and theory

There has been a considerable amount of research into WLB in the construction industry going back over 2 decades – the majority having been undertaken in Australia (Tijani *et al.*, 2020). In reviewing this chronologically, one of the earliest research projects Lingard and Sublet (2002) found that the single most important determining factor in marital or relationship quality among Australian professional engineers was the number of hours they worked each week. Later, Lingard and Francis (2004) showed that the modal average number of hours worked per week across the Australia construction industry was 55.2 and that male employees in site-based roles reported especially high levels of work-to-family conflict. Francis *et al.*'s (2006) research into work-family conflict in the Australian construction industry showed that a culture of long working hours, total commitment to work at all costs and a lack of personal control over work arrangements contributed to high levels of employee burnout, work-to-family conflict and deterioration of personal relationships. Lingard and Francis' (2007) survey of Australian construction professionals argued that much more could be done by organisations at minimal cost to support WLB, with 20% of respondents unsure of what support their organisation had to offer. Young's (2016) study of construction workers in Hong Kong showed that they worked longer hours than many other industry sectors, although the association between long hours and poor WLB was weak. Similarly, Downey and Stough's (2018) survey of Australian construction professionals' mental health reported that 64% of respondents worked over 50 h per week (far higher than 19% for the "normal" working population). However, in contrast to Young (2016), levels of dissatisfaction with WLB exceeded normal working population values by 39%. Holden and Sunindijo's (2018) survey of 89 professional employees in a single medium-sized construction company in Australia, showed that WLB was adversely affected by being constantly available for work through workplace information and communication technologies and that there was a gap between "offered" and "practiced" flexibility arrangements. In South Africa, Bowen *et al.* (2018) reported a positive but complex inter-relationship between work hours and levels of work-family conflict, psychological distress and sleep problems among construction professionals. Kumar and Chaurvedi's (2018) interviews with 22 women in the Indian construction industry

found that the main organisational factors associated with poor WLB were in order of priority: long and unpredictable work hours; tight project deadlines and high workloads; low salary related to hours worked; harsh work environment; project-based nature of work; health and safety issues; organisational norms and culture; job insecurity; high levels of bullying and sexual harassment, disrespectful language, gender discrimination; and low levels of work-life quality. Sui *et al.* (2019) explored the work-life conflict of Millennials working in the Singaporean and Korean Construction industries, reporting a positive relationship between high work demands and work-life conflict. Work-life boundary- spanning initiatives such as family dance events and social events were found to be important in overcoming the negative effect of Work-Life Conflict. In the UK, Kotera *et al.* (2019) found that construction workers who worked in organisations that supported WLB felt more psychologically safe in the workplace and had better mental health. Bowen and Zhang (2020) reported that work-to-family conflict is directly linked to work pressure and lack of job autonomy and schedule control in the South African construction industry, highlighting the importance of designing jobs with WLB in mind and limiting boundary-spanning commitments, which can exacerbate excessive work-family conflict. In Australia, Holdsworth *et al.* (2020) showed that the likelihood of work-family conflict increased as work hours and shift work increased and that work-family conflict was higher for women who lived with their partner and children and for those who were single parents living with children. In Australia, Galea *et al.*'s (2020) ethnographic study found that men's and women's WLB and well-being are, at least in part, negatively affected by workplace characteristics frequently attributed to masculine workplace norms such as presenteeism, total availability, control, reliability and complete devotion to work, regardless of personal costs. Tijani *et al.*'s (2020) systematic literature review of 44 internationally peer-reviewed papers on construction WLB since 2001 identified numerous causes, consequences and potential solutions for poor WLB. More recently, Crook and Tessler (2021) linked the Australian construction industry's high levels of work-related injuries and fatalities to poor WLB and Lingard and Turner (2022) noted various causes of poor WLB and a difference in experience and preference for long work hours between blue-collared workers who are paid a weekly wage and white-collared workers who receive a monthly salary.

While the above research is interesting and valuable, it is fragmented, limited and embryonic and suffers numerous methodological limitations. For example, mixed method research is relatively rare and sample sizes are highly variable and typically very small. This means research results are often not representative of the building and construction industry's workforce diversity. Research is also biased towards people who live in traditional family-type structures and it often fails to account for the complexity of non-work factors that can cause poor work-life balance. The tendency is to therefore blame employers for poor WLB and most researchers also assume that work and life domains are in conflict and the positive aspects of work are often ignored. Research also tends to take the employees perspective and ignore the employer's perspective. Furthermore, the impact of potential WLB interventions (such as the shorter working week) tend to treat projects in isolation rather than consider implications across the industry as a whole. Finally, there is significant under-theorisation of the subject.

This is in contrast to research outside construction where numerous theories have been used to explore the concept of WLB. For example, "Conflict Theory" focuses on the bi-directional conflicts between work and family domains (Carlson *et al.*, 2000) and appears to have heavily influenced the work of WLB researchers in the construction industry – if not explicitly mobilised (see for example Francis *et al.*, 2006; Lingard and Francis, 2007; Bowen *et al.*, 2018). In contrast, "Enrichment Theory" explains how experiences in one life domain can positively affect another life domain in both directions (Carlson *et al.*, 2000). For example, success at work can enhance success in performing roles at home and vice versa. While enrichments effects have been recognised by several construction researchers (Lingard and Turner, 2023a, b), most construction research overly focuses on the negative impacts of work. There are also several resource-based theories which have been used to conceptualise WLB. For example, "Compensation Theory" explains how resources in one domain can support resources in another (for example through a

supportive spouse or workplace flexibility policies) (Lambert, 1990). "Conservation of Resources Theory" (Premeaux *et al.*, 2007) argues that WLB is achieved by anything that serves to replenish these resources to achieve a healthy WLB. "Sphere Theory" seeks to explain how societal expectations of men's and women's roles in society influence access to resources to secure a healthy WLB (Parsons, 1970). There is limited evidence in the literature of these resource-based theories being mobilised in construction research, the differential resources available to men and women working in construction and its impact on WLB have been highlighted by several researchers (Lingard and Francis, 2007; Galea *et al.*, 2015, 2020).

While valuable, one of the common limitations of the above theories is that they tend to treat the work-family interface as in conflict, which we know in construction is not always the case. For example, Sturges (2013) found that for many young people, work time has meanings strongly associated with enjoyment, being professional and being part of a work team and family. In contrast, Boundary Theory argues that people maintain a healthy WLB by creating and managing boundaries between their roles, responsibilities and aspirations in numerous domains such as work, family, caring, education, community, culture, socialising and recreation (Desrochers and Sargent, 2004; Clark, 2000). The value of boundary theory to understanding WLB in construction is that it offers a socio-cognitive framework for understanding how individuals navigate the complexities of work and personal life and how organisational factors, individual preferences, and other factors like technological advancements influence how people set and maintain boundaries between work and personal life (Mellner and Aronsson, 2014). Boundary theory suggests that individuals can either segment (separate) or integrate (blend) their roles in work and non-work domains (family, leisure, community work, religious activities, social life etc.), and this choice influences their WLB. According to Boundary Theory, a person's domain boundaries are "*permeable*" (allow people to merge both roles such as accepting work calls at home), "*flexible*" (they can expand and contract to accommodate changes in role demands in each domain) and have different "*strengths*" (some are negotiable and some are not) (Clark, 2000). In Boundary Theory, people are conceptualised as "boundary crossers" who must continually "manage" transitions between work and non-work domains to achieve a balanced life. Boundary theory also posits that people possess different resources to manage their boundaries to achieve a healthy WLB. For example, some people have more employer support than others to work flexibly. However, many organisations fail to formalise such provisions, enabling "boundary keepers", like managers and supervisors who do not support such ideas, to informally undermine them (Clark, 2000). This problem has been highlighted by Galea *et al.*'s (2020) analysis of gendered rules relating to gender equity and diversity in the construction industry.

Boundary Theory is valuable because it also identifies three types of boundaries which individuals need to maintain between their personal and work lives to achieve a healthy WLB (Pradhan, 2016):

(1) *Temporal boundaries* – refer to the limits people may place around "when" they work. For example, an individual may decide they will work from 9a.m. to 4p.m. so that they can drop off and pick up their children from school.

(2) *Physical boundaries* – refer to limits people place on "where" they work. For example, an individual may decide that they will not take work home while others may decide that they want to work remotely so that they can manage family demands on their time more flexibly.

(3) *Psychological boundaries* – refer to the limits people place on their perceptions around the permeability of work and non-work roles. For example, some people are happy to mix work and play while others want to have time to stop thinking about work completely while others.

There appear to be no construction researchers who have specifically mobilised Boundary Theory in a WLB context. However, some have highlighted the value of boundary spanning

initiatives such as social events in overcoming work-to-life conflict (see Sui *et al.*, 2019). Furthermore, several construction researchers report boundary problems interfering with WLB without specifically using this term. For example, it has been repeatedly reported that highly masculinised and toxic workplace cultures characterised by presenteeism, sexism and discrimination, pressure people working in construction to work long hours and to prioritise work over personal care and family responsibilities (Lingard and Francis, 2009, Galea *et al.*, 2020; Crook and Tessler, 2021; Lingard *et al.*, 2021). Research also shows that the construction industry is a highly fragmented industry with a relatively high proportion of small firms and casualised precarious work compared to other sectors (Australian Council of Trade Unions, 2021; Commonwealth of Australia, 2023). This limits resources available for people to manage their WLB and undermines employees' power to negotiate work and non-work boundaries to achieve a healthy WLB. Numerous strategies have been employed to alleviate these problems such as family friendly workplaces, flexible working, job sharing, family and carers leave, wellbeing and mentoring programs and shorter working weeks (Townsend *et al.*, 2006; Lingard and Francis, 2009; Lingard *et al.*, 2021). However, as Tijani *et al.* (2020) note, research remains contradictory and inconclusive and subject to numerous methodological and theoretical limitations.

Given the potential value of Boundary Theory to potentially provide new theoretical insights into WLB in the construction industry, the following section describes the methodology which was employed to undertake an empirical investigation of the research questions posed at the start of this paper.

Methodology

Undertaking research into WLB in the highly diverse, fragmented and dynamic construction industry presents numerous methodological challenges because it is a highly personalised concept which means different things to different people at different times in their lives and there is no one agreed way of measuring it. To address these challenges, several strategies were employed. First, an interpretive and abductive mixed methods approach to data collection and analysis was employed, which drew on both qualitative and quantitative data from a wide range of sources and perspectives (see discussion of sampling strategy below). Second, the research team was deliberately diverse in age, gender, culture, and background to enhance reflexivity through cross-referencing of data analysis from multiple perspectives. Third, we used a range of standardised and validated measures of WLB (Amatea *et al.*, 1986; Carlson *et al.*, 2000; Greenhaus *et al.*, 2003; Kodz *et al.*, 2002) and we followed strict ethical guidelines informed by The Australian Code for the Responsible Conduct of Research (NHMRC, 2018). This study received ethics approval from the University of Technology Sydney Human Research Ethics Committee (approval number ETH22-7710).

Informed by the research questions data was collected in two stages using a survey (N = 1,475) and interviews (N = 64) with people from across the Australian construction industry.

Stage one: Interview data collection and analysis

Using a purposeful and stratified sampling approach participants were recruited with the assistance of a major national industry association with over 8,000 organizational members from across the construction industry in the Australian state of New South Wales (NSW). The NSW construction industry was selected as a representative sampling frame because it employs about 40% of the total Australian construction industry workforce (ABS, 2023). Following ethics protocols, representatives from a random selection of 50 firms from different parts of the industry (size, sector, location) were asked to nominate 5 people to be interviewed and to ask them to contact the research team independently by email to consent to participate. This resulted in a sampling frame of around 250 people who were then randomly selected again for an anonymous interview. Following the principles of theoretical saturation and an

abductive approach to data analysis which involved continually moving between analysis and data collection, interviews continued until they offered no new insights into the questions being asked. This resulted in a sample of 64 respondents as illustrated in Table 1.

The semi-structured interview questions were deliberately open-ended to enable the participants to describe their perceptions and experiences of WLB in the industry. Each interview lasted about one hour, was undertaken at a place of choice to the interviewee and was designed to elicit discussion about the temporal, physical and psychological boundaries experienced in managing WLB. Questions addressed issues such as: perceptions of WLB; causes of any poor WLB (organizational, personal, industry, regulatory, socio-economic and other environmental factors such as transportation etc.); relative time spent on various work and non-work roles; hours and days worked; workplace practices and cultures relating to when, how and when people were required to work; resources and other provisions by employers to provide people with a healthy WLB such as flexibility; the effectiveness of such resources; and constraints on respondents access to these resources.

Table 1. Sample structure stage one

Demographic	Sub-groups	Frequency	Percentage (%)
Age	16–29	16	25.0
	30–39	26	40.6
	40–49	12	18.8
	50–59	9	14.1
	60–69	1	1.6
Sex	Male	49	76.6
	Female	15	23.4
	Non-binary	0	0.0
Marital status	Single with children	3	4.7
	Single no children	16	25.0
	De factor partner	3	4.7
	Married with children	35	54.7
	Married no children	7	10.9
Role	Senior director/executive management	4	6.3
	Head office-based management, administration	16	25.0
	Site-based project management, site management, supervision, administration	20	31.3
	Construction worker/tradesperson and labourer	24	37.5
Area and market	Urban/city	34	53.1
	Regional	32	50.0
	National	30	46.9
	International	5	7.8
	Total		
Sector	Commercial	53	82.8
	Industrial	10	15.6
	Residential	30	46.9
	Aged care	9	14.1
	Health	19	29.7
	Education	20	31.3
	Infrastructure civil	5	7.8
	Earthworks and remediation	5	7.8
	Retail	21	32.8
	Hospitality	7	10.9
	House building	4	6.3
Firm size	Large (250+ employees)	13	20.3
	Medium (50–249 employees)	41	64.1
	Small (1–49 employees)	10	15.6

Source(s): Authors' own creation/work

All interviews were audio-recorded and transcribed verbatim and analysed using thematic analysis in five stages following protocols by Guest *et al.* (2012) and Gioia *et al.* (2013). In stage one, each research team member immersed themselves by repeatedly reading the interview transcripts to obtain a high level of familiarity with the data. Informed by boundary theory, the coding strategy focused on how participants managed the boundaries between their different roles in different life domains. Therefore, in stage two, guided by the research questions as our analytical starting point and the three theoretical boundary constructs (temporal, physical, psychological) offered by Boundary Theory, each researcher independently conducted open (inductive) and directed (deductive) coding, organising and generating an initial list of items/codes (first-order coding) from the data set that had a reoccurring pattern. For example, many young participants, especially those working on-site in relatively junior supervisory roles, talked about job with high role intensity and long hours of work on site, promulgated by toxic workplace cultures on site which required them to spend do whatever it took to get the job done. These participants also commonly noted the dependence on the quality of the relationship with their supervisors to get equal access to flexible working provisions compared to their equivalents working in head office roles. Such narratives were coded as examples of temporal, physical and psychological boundaries which were strong (un-negotiable working hours and demands), impermeable (stuck on site and unable to work from home) and inflexible (work demands cannot expand and contract is response to work demands). In stage three, researchers searched for recurring patterns, linkages, categories, and subcategories within the first-order codes relating to each research question. In stage four, these were combined to form over-reaching themes relating to each research question. In stage five, the emergent themes were further refined by revisiting the data to search for anything which may support or refute them, allowing further expansion and connections between overlapping themes. These stages were undertaken independently by a team of researchers from various backgrounds to provide different perspectives on the data. Analytical differences were resolved between research team members through continual discussion until 100% inter-rater agreement was achieved, providing a high level of "fit" with the data and confidence in the validity of the emergent themes.

Stage two: Survey data collection and analysis

An online survey was also conducted to complement the interview data, facilitating access to a larger pool of respondents across a bigger geographical area in the state of NSW (which is over six times larger than England in the UK). Sampling involved a combination of purposive, stratified and snowball sampling. First, following ethics protocols the sponsor industry association emailed an invitation to participate in the online survey to a representative in each of its 8,000 member organizations from across the NSW construction industry. Survey participants were also asked to distribute the invitation letter and survey link to any other colleagues working in the NSW Building and Construction industry. To maximise the response rate, we used the split questionnaire design method (Raghunathan and Grizzle, 1995) and kept the online survey open until we met the required sample size and had a representative sample of industry stakeholders from a range of demographic backgrounds, roles, organizations, sectors and locations. The required sample size was calculated as 383 using Newbold *et al.*'s (2013) formulae below and based on a population size of 401,564 (NSW construction industry labour force according to ABS statistics 2023). Due to the online nature of the survey, estimating the response rate is not feasible, as we cannot determine the number of individuals who received the survey invitation. Nevertheless, the sampling process resulted in a sample size of 1,475 as illustrated in Table 2, which is statistically reliable for analysis with a 95% confidence level and a 5% margin of error.

The survey was split into four sections and employed a combination of open, categorical, interval, and Likert-scaled questions. Section 1 asked for general demographic information about the respondents (age, gender, occupation, etc). Section 2 asked about the participant's

Table 2. Sample structure stage two

Demographic	Sub-groups	Frequency	Percentage (%)
Gender	Male	1,180	80
	Female	286	19.4
	Non-binary	9	0.6
	Total	1,475	100
Age	15–24	160	17.4
	25–35	231	25.1
	36–45	199	21.6
	46–55	164	17.8
	56–65	118	12.8
	Over 65	50	5.4
	Total	922	100
Marital status	Single	108	28.4
	Married or long-term de-facto partner	272	71.6
	Total	380	100
Dependent children	No	210	56.9
	Yes	159	43.1
	Total	369	100
Role	Senior director/executive management	224	18.5
	Head office-based management, administration	206	17
	Site-based project management, site management, supervision, administration	528	43.7
	Construction worker/tradesperson and labourer	251	20.8
	Total	1,209	100
Employment contract	Permanent	343	92.5
	Fixed term	18	4.9
	Casual	10	2.7
	Total	371	100
Pay	Fixed salary (no paid overtime)	271	73.4
	Fixed salary (paid overtime)	22	6
	Hourly wage (paid overtime)	76	20.6
	Total	369	100
Employer size	Micro business (fewer than 10 employees)	80	21.3
	Small business (10–49 employees)	69	18.4
	Medium-sized business (50–249 employees)	91	24.2
	Large business (250 or more people employees)	136	36.2
	Total	376	100
Employer sector	Commercial building	192	50.9
	Residential building (apartments)	49	13
	House building	74	19.6
	Civil and infrastructure	62	16.4
	Total	377	100
Employer region	City areas	275	72.2
	Regional areas	102	26.8
	Remote areas	4	1
	Total	381	100

Source(s): Authors' own creation/work

current working week (worked hours, days, overtime, etc.). Sections 3 and 4 asked about the participant's current WLB using a range of standard validated WLB instruments (Amatea *et al.*, 1986; Carlson *et al.*, 2000; Greenhaus *et al.*, 2003; Kodz *et al.*, 2002), the factors that affect it positively and negatively (work and non-work related) including resources, initiatives and provisions to help them manage the boundaries between work and non-work roles.

The survey data was analysed using a variety of descriptive and non-parametric tests based on a Kolmogorov-Smirnov (KS) test which confirmed the non-normal distribution of the data.

A Relative Importance Indexing (RII) method was used over the arithmetic average method because it can derive relative indices within the range of 0–1 for each variable enabling us to undertake relative comparisons of items in our survey (Holt, 2014). Qualitative data from the open questions which included 450 detailed comments were analysed using the same thematic analysis approach as described for the interviews.

Results

RQ1. What is the current work-life balance of people working in the NSW B&C industry and how does this vary across the workforce?

Most people surveyed (61%) had an acceptable, good or very good "self-perceived" WLB. However, WLB varied significantly across the sample, indicating that one cannot generalise about WLB in the industry. In particular, the following patterns emerged (see Figure 1):

(1) Younger people tended to have worse WLB than older people;

(2) There were no significant differences between men's and women's WLB;

(3) Those who worked in smaller organizations tended to have a better WLB than those who worked in larger organizations;

(4) Those working in the house building industry tended to have by far the best WLB. Those working on civil and infrastructure projects had the worst WLB;

(5) There were no significant differences in WLB between those in single or married and de-facto relationships;

(6) There were no significant differences between salaried and waged workers;

(7) There were no significant differences between principal contractors and subcontractors compared to consultants who have a very good WLB;

(8) There was no significant difference between those working in regional and city areas.

Table 3 shows that the balance between roles in work and non-work domains in our sample was generally healthy and surprisingly stable across the sample given its high level of diversity. No significant differences in time spent on different roles within respondents' work and non-work

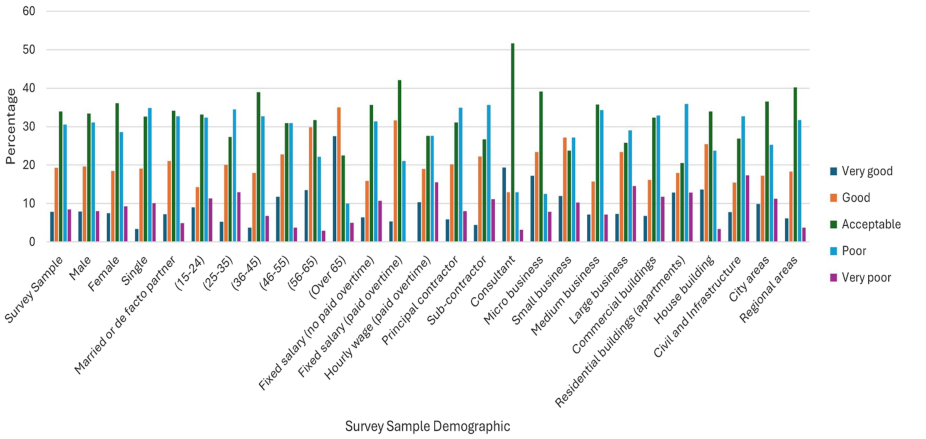

Figure 1. WLB across the survey sample (N = 1,230). Source: Authors' own creation/work

Table 3. Average time spent in work and non-work activities ($N = 862$)

	Percentages of average time in a typical spent in work and non-work activities						
Demographic	Work (including second and third jobs)	Family (kids and spouse)	House duties (cleaning, garden etc.)	Caring (for elderly etc.)	Study (TAFE, college, university etc.)	Social activities (friends, clubs etc.)	Community work/ volunteering/ religious commitments
Male	59.3	17.5	8.8	0.8	3.6	8.2	1.6
Female	55.9	16.4	11.5	1.6	6.0	7.8	0.9
Single	58.7	8.4	8.1	0.8	8.9	12.8	2.4
Married or de facto	57.3	20.8	10.9	1.2	1.6	7.0	1.2
Job role Group 1	57.1	19.3	9.9	1.1	2.6	8.0	2.0
Job role Group 2	59.8	16.0	9.0	1.1	4.2	8.7	1.2
Job role Group 3	60.1	14.0	8.0	1.0	4.8	9.0	3.0
(15–24)	56.3	10.4	6.7	0.4	14.1	10.7	1.4
(25–35)	62.9	15.2	9.3	0.6	1.6	9.4	1.0
(36–45)	61.4	21.1	8.7	0.6	0.8	5.3	2.1
(46–55)	56.8	18.7	11.4	2.2	2.2	7.4	1.3
(56–65)	56.9	19.2	10.9	2.7	0.4	8.0	2.0
(Over 65)	54.5	16.5	11.0	1.6	0.7	10.3	5.4
Fixed salary (no paid overtime)	59.6	18.0	9.5	0.9	3.0	7.4	1.7
Fixed salary (paid overtime)	55.3	17.8	8.6	2.4	2.9	10.6	2.6
Hourly wage (paid overtime)	60.9	13.9	7.3	0.9	4.2	9.3	3.5
Principal contractor	59.6	17.3	9.1	0.8	4.1	7.9	1.1
Sub-contractor	65.6	15.4	7.6	1.7	0.4	6.6	2.7
Consultant	47.0	19.8	11.4	3.0	8.4	7.5	2.9
Micro business (fewer than 10 employees)	52.1	16.7	11.9	0.5	7.0	8.3	3.5
Small business (10–49 employees)	58.8	16.8	9.3	1.1	4.4	7.6	2.0
Medium business (50–249 employees)	60.9	15.8	8.6	1.5	4.1	8.0	1.2
Large business (250 or more people employees)	57.0	17.2	10.5	0.7	3.7	9.5	1.4
Commercial buildings	62.2	16.3	8.3	0.5	4.1	7.5	1.1
Residential buildings (apartments)	55.5	19.2	9.4	1.0	4.9	9.5	0.6
House building	54.9	20.5	11.1	1.3	3.8	6.2	2.2
Civil and infrastructure	58.5	15.7	11.1	0.8	2.5	10.3	1.1
City areas	58.3	17.2	8.6	1.2	4.3	8.9	1.4
Regional areas	57.1	19.2	8.9	0.8	6.2	6.8	1.0

Source(s): Authors' own creation/work

domains were found across our sample, although the following non-statistically significant patterns were observed in the data:

(1) Men tended to spend more time at work than women;

(2) Women tended to spend more time on house duties than men;

(3) Single people tended to spend more time at work than married/de-factor couples;

(4) Young people (15–24) tended to spend more time at work than any other age group;

(5) People aged 36–45 tended to spend more time with their families than any other age group;

(6) People working for subcontractors tended to spend more time at work than principal contractors and consultants;

Given the literature's focus on work-related causes of poor WLB, we found it surprising that 90% of the top ten negative impacts of peoples poor WLB were non-work-related rather than work-related (Figure 2). Not everyone was affected equally by these causes and those most negatively affected by their current WLB were:

(1) Single people;

(2) Women;

(3) On-project salaried workers (no paid overtime);

(4) Those working for subcontractors;

(5) Those working on large civil engineering projects.

RQ2. Does employment in the construction industry provide people with the resources necessary to create and maintain the temporal, physical, and psychological boundaries between work and non-work domains that support a healthy WLB?

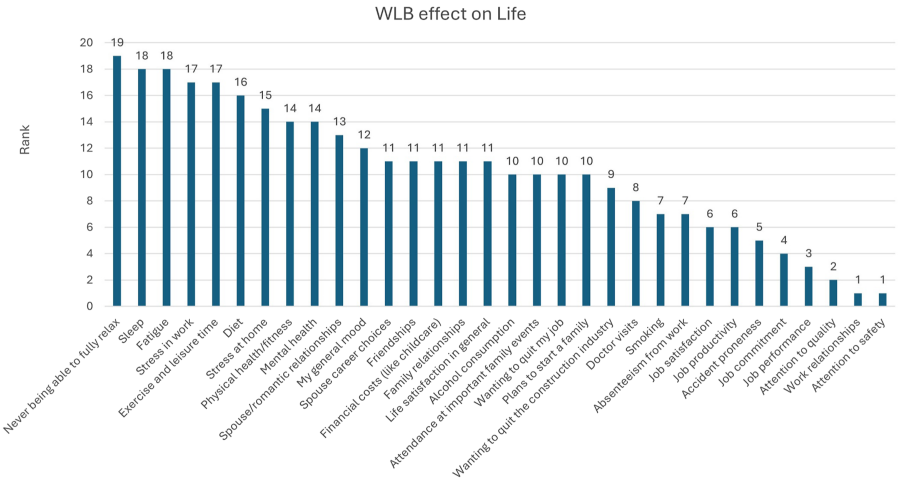

Figure 2. Rank of WLB effect on life across the survey sample ($N = 860$). Note: Rank = 19 means very negative WLB effect on life. Rank = 1 means least negative WLB effect on life. Source: Authors' own creation/work

Consistent with previous studies, high levels of work hours were found across the sample. On average people worked between 50 and 55 h per week, just under 10 h per day, and just over 5 days per week. Table 4 shows that these are the limits at which WLB deteriorates markedly. However, it also shows that the relationship between WLB and days worked per week, hours worked per day and hours worked per week is complex and non-linear. Qualitative data indicated that this relationship was related to respondents' family and caring responsibilities, age, economic needs (for example paying a mortgage), gender and marital status etc. For example, the WLB of married respondents with family responsibilities was more detrimentally affected by longer hours than those who were single and without children. This was because their work/life domain boundaries were relatively rigid, impermeable and strong in comparison.

Despite the overall high level of hours worked across our sample, it was not possible to generalise about days worked per week, hours worked per week, and hours worked per day (Table 4). This varied significantly and not everyone worked very long hours and weeks, making generalisations about working hours unreliable. Results also showed that the highest hours are being worked by "on-project" salaried workers, young people in relatively junior roles and some waged workers, especially those working on large infrastructure projects, commercial and residential projects in inner city urban areas. Qualitative data indicated that these people have less access to organizational and personal resources to manage the temporal, physical and psychological boundaries between their work and non-work roles. This lack of resources access was linked to the high value of weekend working on these projects which meant it was relatively more productive and economical for employers to operate a 6–7-day week. Qualitative data indicated that this was related to a wide range of variables such as development approval (DA) conditions which determined allowable site hours, project program and budget constraints the size and logistical complexity of the project and the way

Table 4. WLB versus working days per week; working hours per day, and working hours per week ($N = 506$)

		WLB (percentage)				
	Percentage	Very good	Good	Acceptable	Poor	Very poor
Number of working days per week						
1	0.7	0.0	33.3	0.0	66.7	0.0
2	1.1	25.0	50.0	25.0	0.0	0.0
3	2.6	30.0	40.0	10.0	10.0	10.0
4	4.9	3.8	30.8	34.6	26.9	3.8
5	50.9	8.2	29.0	40.8	18.8	3.3
6	37.5	3.6	10.3	30.4	39.2	16.5
7	2.3	11.1	11.1	33.3	22.2	22.2
Number of working hours a day						
Less than 8	4.4	25.0	20.0	35.0	20.0	0.0
8	15.1	20.6	30.9	36.8	8.8	2.9
9	17.4	9.9	27.2	43.2	12.3	7.4
10	26.4	4.4	17.6	30.9	41.9	5.1
More than 10	36.7	6.3	7.9	26.8	43.7	15.3
Number of working hours per week						
Less than 35	2.5	30.8	23.1	38.5	7.7	0.0
36 to 40	15	9.9	31.0	39.4	19.7	0.0
41 to 45	17.6	7.2	27.7	48.2	13.3	3.6
46 to 50	18.7	8.2	22.7	38.1	24.7	6.2
51 to 55	20.2	7.5	14.0	31.8	37.4	9.3
Over 55	26.1	4.4	6.7	25.2	42.2	21.5

Source(s): Authors' own creation/work

that risks for project delays were distributed. In other words, access to boundary management resources to achieve a healthy WLB were not just determined by the way that projects were managed but by the contractual constraints and wider context in which projects were procured.

Qualitative data also indicated that young or junior workers in salaried on-site roles experienced the greatest difficulties in getting access to boundary management resources to optimise their WLB. Many commented that they had to "earn" their WLB over time and that long hours of work were seen as a "right-of-passage" into more senior roles, which provided a better WLB. This finding provides valuable insights into the hierarchical culture of the industry where the power, authority and access to resources to manage WLB is heavily vested in those at the top of the organizational pyramid – creating a form of age-related "WLB slavery" and inter-generational inequity in the workforce. Regardless of the employer's flexibility policies, access to boundary management resources for these people was highly informal and dependent on the quality of their personal relationship with their supervisors. Many of these workers felt unable to access boundary management resources (such as flexible working) and powerless in being able to control their WLB.

Figure 3 lists the main reasons why people worked weekends. The top five reasons are all work-related and provide insights in the psychological boundaries which people face in achieving a healthy WLB. There was strong consensus in the qualitative data that long working hours had become institutionalised across parts of the construction industry and were especially strong on larger and more complex commercial and government projects in inner-city urban areas. The data shows that a person's choice of where they work and the types of projects they work on has a significant impact on their resulting WLB.

In managing their temporal and physical boundaries between work and non-work domains, most respondents described feeling a low level of boundary flexibility over how long, when, how and where they worked and pointed to the industry's workplace culture of being constantly available for work after normal working hours (Table 5).

Table 6 shows that in terms of flexibility in "hours worked," those who had the least boundary flexibility were women; single people; younger people (25–35 yrs); on-project salaried workers in professional and supervisor roles (Group 2); salaried workers; those working for subcontractors; those working for larger firms; and those working on civil engineering and infrastructure projects. In terms of flexibility in "where, when and how one worked" those who had the least flexibility were men; single people; younger people (25–35 yrs); on-project salaried workers in professional and supervisor roles (Group 2); salaried workers; those working for subcontractors; those working for medium/larger firms; and those working on civil engineering and infrastructure projects.

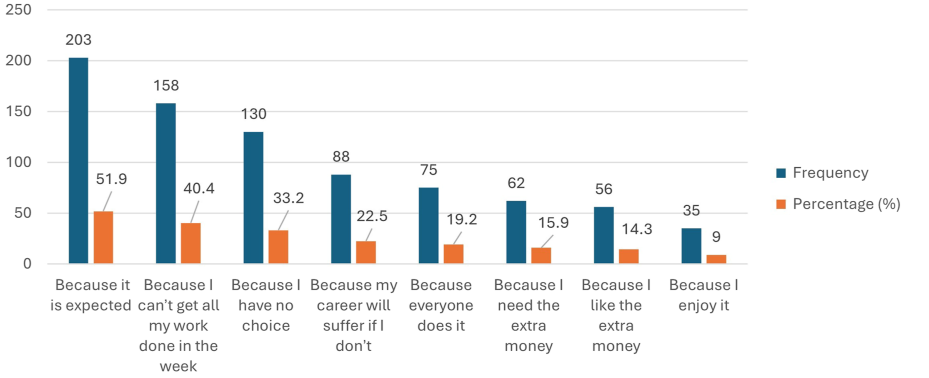

Figure 3. Reasons for working weekends across the survey sample ($N = 391$). Source: Authors' own creation/work

Table 5. Flexibility across the workforce ($N = 568$)

Type of flexibility	Frequency	Percentage (%)
Flexibility in the number of working hours		
No flexibility	131	23.1
Some flexibility	358	63.1
Complete flexibility	78	13.8
Total	567	100
Flexibility in where, when and how you work		
No flexibility	150	26.4
Some flexibility	320	56.3
Complete flexibility	98	17.3
Total	568	100

Source(s): Authors' own creation/work

Table 6. Flexibility across sample demographics ($N = 568$)

Demographic	Percentages of flexibility in the numbers of working hours			Percentages of flexibility in where, when and how you work		
	No flexibility (%)	Some flexibility (%)	Complete flexibility (%)	No flexibility (%)	Some flexibility (%)	Complete flexibility (%)
Male	22	64	14	26.7	55.6	17.7
Female	27	60.9	12.2	23.9	60.6	15.6
Single	27.3	65.9	6.8	44.7	36.8	18.4
Married or long-term de-facto partner	24.7	56.7	18.6	28.3	53.8	17.9
Job role Group 1	11.2	66.9	21.9	12.7	59.4	27.9
Job role Group 2	32.3	61.8	5.9	35.2	54.6	10.2
Job role Group 3	29.9	57.7	12.4	33.7	50	16.3
(15–24)	30.0	66.0	4.0	33.8	60.3	5.9
(25–35)	34.7	58.2	7.1	35.3	48.2	16.5
(36–45)	20.0	70.7	9.3	22.8	63.3	13.9
(46–55)	12.1	70.7	17.2	16.4	61.8	21.8
(56–65)	21.4	59.5	19.0	11.8	64.7	23.5
(Over 65)	4.5	50.0	45.5	7.7	38.5	53.8
Fixed salary (no paid overtime)	32.8	53.4	13.8	30.2	56.3	13.5
Fixed salary (paid overtime)	11.1	77.8	11.1	27.3	54.5	18.2
Hourly wage (paid overtime)	27.6	37.9	34.5	25.9	51.9	22.2
Principal contractor	23.2	64.3	12.5	30.2	59.4	10.4
Sub-contractor	30.4	65.2	4.3	36.4	54.5	9.1
Consultant	28.6	50.0	21.4	12.5	43.8	43.8
Micro business	12.0	48.0	40.0	16.7	46.7	36.7
Small business	8.3	79.2	12.5	17.9	64.3	17.9
Medium business	32.3	61.3	6.5	32.4	59.5	8.1
Large business	36.7	55.1	8.2	32.2	62.7	5.1
Commercial buildings	23.0	68.9	8.1	35.1	56.8	8.1
Residential buildings (apartments)	20.8	70.8	8.3	26.7	53.3	20.0
House building	12.0	64.0	24.0	7.7	38.5	53.8
Civil and infrastructure	36.4	54.5	9.1	40.0	43.3	16.7

Source(s): Authors' own creation/work

The data also indicated that people can generally be categorised into three main groups in terms of access to resources to manage their boundaries between work and non-work domains in achieving a healthy WLB.

(1) *Group1: Off-project salaried staff in management and administrative roles* – This group had the best WLB, the greatest control over their temporal, physical and psychological boundaries and the most predictable and controllable hours of all three groups.

(2) *Group 2: On-project salaried workers in professional and supervisor roles* – there were two subgroups within this group.

- *Site-based administrators (health and safety officers, environmental officers/ managers, etc.):* These people tended to have an acceptable WLB. They had a reasonable degree of control over where and how they work (physical and psychological boundaries) but less control over when they work (temporal boundaries) since they tend to be constantly available for work.
- *Contract managers, project managers, Site foremen, site managers, site engineers, site supervisors and some leading hands*: This group had the poorest WLB and little ability to control their temporal, physical and psychological boundaries. Their lives were tied strongly to the uncertainties and demands of individual projects and they had the highest work intensity and most unpredictable and uncontrollable hours of all groups.

(3) *Group 3: On-project wage earners in operative/trade roles* – Although all members of this group are tied to specific projects and have little ability to manage the physical boundaries between work and non-work activities, many members of this group had good control over their WLB, especially those working on small residential housing projects. However, those working on large inner city commercial, residential infrastructure projects often had a poor WLB.

RQ3. What types of strategies are perceived to be most effective by people working in the NSW B&C industry in supporting the management of boundaries between work and non-work domains to achieve a healthy WLB?

Most people aspired to work significantly fewer hours and days than they were currently working (within the range of 35–45 h a week, for 4/5 days a week) and have weekends free (Table 7). When asked about how to improve their WLB, respondents emphasised the need for more time and resources to do their jobs (temporal boundaries) and greater flexibility and control over when, where and how they worked (physical boundaries) and more time to be able to switch off from work without being stigmatised for it (psychological boundaries) (Tables 8 and 9). Importantly, it was evident that these aspirations were conditional on a range of factors, indicating that providing people with opportunities to access resources (such as flexible working or extra leave) to manage their work life balance boundaries does not necessarily mean that they will be taken up. These factors included: not adversely affecting the competitiveness of their employers; letting their team members down; losing pay; or having to work extra hours during the week or increasing productively to compensate (as with many shorter working week models).

Survey data revealed several strategies commonly employed to manage temporal boundaries between work and non-work domains to achieve a better WLB. As shown in Table 9, most respondents (72%) reported that they did not engage in any paid overtime, almost 30% of respondents reported that they never work on weekends, and a further 20% worked only one weekend per month, highlighting the importance of setting strong temporal

Table 7. Aspirations for WLB ($N = 220$)

Aspirations for WLB	Mean	RII	Rank
I would like my weekends free	4.47	0.89	1
I would like to work less days a week	3.92	0.78	2
I would like to work less hours a week	3.91	0.78	2
Work commitments prevent me from participating fully in life outside work	3.71	0.74	3
I need to work overtime to get my job done	3.64	0.73	4
I would like my weekends free and could safely increase my productivity during the week to compensate	3.6	0.72	5
The culture at work can negatively affect relationships outside work	3.35	0.67	6
I would like my weekends free and could safely work longer hours during the week to compensate	3.28	0.66	7
I would like to work a rotating schedule where I get alternate weekdays and Saturdays free	3.02	0.60	8
I would like my weekends free and could take a pay cut for it	2.69	0.54	9
Life commitments prevent me from performing fully at work	2.65	0.53	10
I would like to work more hours a week	2	0.40	11
I would like to work more days a week	1.82	0.36	12

Note(s): Rank = 1 means strongly agree, Rank = 12 means strongly disagree
Source(s): Authors' own creation/work

Table 8. Ways to improve WLB ($N = 206$)

Initiatives improve work-life balance	Mean	RII	Rank
More realistic project programs	4.17	0.83	1
Greater flexibility in hours worked	4.13	0.83	1
Resource projects properly	4.11	0.82	2
More realistic project budgets	4.11	0.82	2
Greater flexibility in where, when and how you work	4.1	0.82	2
Better project planning	4.1	0.82	2
Improving workplace culture (tolerant to work-life balance)	3.98	0.80	3
Time off *in lieu* of overtime	3.91	0.78	4
More supportive work colleagues	3.88	0.78	4
More supportive supervisors and line managers	3.85	0.77	5
Improved project management and supervision	3.83	0.77	5
Options to work from home and remotely	3.83	0.77	5
More leave flexibility	3.81	0.76	6
Training to work more productively	3.79	0.76	6
More technology (to improve productivity)	3.7	0.74	7
More regular breaks at work (to reduce fatigue)	3.65	0.73	8
Well-being programs at work (mental health awareness, fitness programs, resilience training etc.)	3.61	0.72	9
Improved site facilities for workers (clean toilets, disability access, cafeteria, etc.)	3.57	0.71	10
Carers leave and assistance	3.55	0.71	10
Better parental leave options	3.53	0.71	10
Part-time work options	3.47	0.69	11
Family-friendly workplace (childcare, prayer rooms, parenting room, etc.)	3.41	0.68	12
Job sharing	3.27	0.65	13
Unpaid leave	3.24	0.65	13
Rostering	3.14	0.63	14
Shift work	2.97	0.59	15

Note(s): Rank = 1 means significantly improved; Rank = 15 means significantly worsen
Source(s): Authors' own creation/work

Table 9. Paid overtime hours, number of worked weekends, and availability after work ($N = 568$)

	Frequency	Percentage %
Paid overtime hours per week		
None	409	72
1–5	45	7.9
6–10	50	8.8
11–15	31	5.5
16–20	17	3
Over 20	16	2.8
Total	568	100
Number of weekends par month typically work		
0	165	29.5
1	112	20
2	133	23.8
3	60	10.7
4	89	15.9
Total	559	100
Available for work after normal working hours (by phone or email)		
Constantly	193	34
Frequently	155	27.3
Occasionally	144	25.4
Rarely	47	8.3
Never	29	5.1
Total	568	100

Source(s): Authors' own creation/work

boundaries between work and non-work domains and the high value placed on safeguarding weekends as a key mechanism for recovery and maintaining personal or family commitments. While a considerable proportion of respondents indicated they were constantly (34%) or frequently (27.3%) available by phone or email, a small minority (5.1%) reported that they were never available. This finding highlights the importance of creating technological boundaries in managing a healthy WLB.

Discussion

In relation to research question one, our results support previous research which show that unhealthily long hours of work, long working weeks, inflexible working (in terms of time and location of work), presenteeism and constant availability for work are a key feature of working in the construction industry (Lingard and Francis, 2004; Crook and Tessler, 2021; Lingard and Turner, 2022; Tijiani *et al.*, 2023). Indeed, our findings relating to working hours (46.3% work over 50 h) are even worse than even the most pessimistic of previous studies (23% in Crook and Tessler, 2021). While this is concerning, on the other hand, our results were more positive than previous studies about people's WLB. This is surprising given the widespread tendency in previous research to directly associate long working hours with poor WLB (Francis *et al.*, 2006; Bowen *et al.*, 2018). However, this finding does support much mainstream WLB research which has acknowledged that WLB is far more complex that just hours worked but is determined by a whole range of organizational factors (work tempo, work control and support structures such as access to work flexibility etc.), individual factors (role salience, personal financial circumstances, spouse support, family and caring commitments etc.) and societal factors (community and cultural support structures, commitments and expectations, cost of living pressures etc.) (Dinh *et al.*, 2017; Brauner *et al.*, 2019). Furthermore, in contrast to much previous research, it was found that the relationship between WLB and hours worked is not as

straight forward as is often claimed and that this depends on numerous factors such as age, life circumstances, economic circumstances, gender, marital status and family and caring responsibilities. These are factors which change continuously over a worker's life, indicating that WLB must be treated as a dynamic rather than a static concept. The types of deterministic statements often found in the construction WLB literature, about WLB being good or bad in construction compared to other sectors are therefore overly simplistic in nature. The results indicate that a better way to draw conclusions about WLB in construction would be to do so longitudinally over a person's life, while also recognising that long periods of poor WLB are detrimental to an individual's health and wellbeing. Construction WLB research appears to reflect the limitations of WLB research outside construction which Ganault and Pailhé (2022) recently criticised for being predominantly cross-sectional. However, they also acknowledged a growing literature adopting a life-course approach when analyzing work life balance. Notably, it was also found that very low work hours were also associated with a poorer WLB. While this supports research in other fields (Tucker and Folkard, 2012), unhealthily low hours are seldom mentioned in construction WLB research. Yet they can be a significant problem for many construction employees due to the high incidence of casualization and insecure work in the construction industry (Parliament of Australia, 2021; International Labour Organization, 2023).

The findings about the high variation of WLB across our sample also question the tendency for many WLB studies in construction to generalise about poor WLB across the industry. In contrast, the findings indicate that one cannot treat the workforce as a homogeneous group. Yet only a few studies have delineated the workforce into specific groups. These include: young people (Sui *et al.*, 2019; Firose *et al.*, 2025), professionals of various kinds (Lingard and Francis, 2004; Bowen *et al.*, 2018; Holden and Sunindijo, 2018), construction trades (Kotera *et al.*, 2019; Holdsworth *et al.*, 2020), onsite and offsite roles (Lingard and Francis, 2004) or by their salaried or wages roles (Townsend *et al.*, 2006; Lingard and Turner, 2022). The findings also highlight the need for more research into junior workers, single people, people working for subcontractors, people working for large contracting organizations, people for large commercial and infrastructure projects in urban locations where weekend working is productive, people working in on-project supervisory roles and some trade roles. The picture of WLB across the construction sector presented by our findings is far more complex than previously revealed and raises equally complex questions about how to manage it effectively. For example, some have suggested mandating a 5-day week (with weekends off) across the Australian construction industry to eliminate such variations (see Galea *et al.*, 2021). However, because WLB means different things to different people at different stages of their lives (Sarhan *et al.*, 2024; Firose *et al.*, 2025), the benefits of such a universally applied strategy would be unevenly felt and difficult to predict in overall benefits to the workforce.

In relation to research question two, the results provide significant evidence that people experience substantial challenges in managing the temporal, physical and psychological boundaries between their work and non-work domains to achieve a healthy WLB. However, the permeability, strength and flexibility of work and non-work domain boundaries varied significantly across our sample. In adding to the existing research above, a high level of inequity and perceived unfairness was also uncovered across our sample in terms of boundary management resources and opportunities to optimise WLB. This was often a significant driver for participants to support universal strategies such as imposing a mandatory 5-day week where everyone has the weekend off. In particular, it was found that those working for large firms and on large inner city commercial and infrastructure projects struggled most. This was surprising since larger firms in the Australian construction industry are said to provide employees with greater options for flexibility than smaller firms (Building Commission NSW, 2024). This interesting disjuncture between the formal WLB policies of large construction firms and their actual WLB practices (especially on site) adds broader empirical evidence to support the findings of Holden and Sunindijo's (2018) survey on one large construction firm in Australia and shows that formal policies, however sophisticated, can often be undermined by

organizational norms and practices on the ground. New institutional theory (Scott, 2005) suggests that informal institutions (accepted norms, practices and processes) which are typically unwritten and socially enforced, can indeed undermine formal institutions (written down policies, contracts and regulations). This is especially likely when they are perceived to be incompatible or create conflicting incentives. For example, a large construction firm is more likely to take on large complex projects in inner city locations where the productivity benefits Saturday working are high. Our findings indicate that this would create pressures for workers to work long hours and weekends which would directly undermine any formal WLB policies they may have. New Institutional theory shows that when informal norms create incentives that conflict with formal regulations, individuals may choose to follow the informal norms created at a project level, even if it means violating the formal ones. This is especially likely when there is weak enforcement of the formal rules around WLB which our results indicate is often the case. Such tensions between centrally developed policies and project management practices have been recognised in the construction human resource management literature and can contribute to the development of a "shadow organisation" where people are required to work outside the formal rules in silence (see Dainty and Loosemore, 2012).

The findings relating to young people's relative inability to manage their temporal, physical and psychological boundaries between work and non-work roles also raise new questions about the damaging impact of the hierarchical culture of the of the industry and intergenerational inequalities relating to peoples' access to resources to manage their WLB boundaries in construction. The findings highlight a new form of modern slavery relating to young workers in construction that has not yet been recognised or explored in the limited modern slavery research literature which tends to focus on migrant workers (see for example Alzoubi *et al.*, 2024). Modern slavery encompasses various exploitative practices where individuals are forced to work against their will and are denied their freedom to make choices for themselves in the interests of commercial gain (Mende, 2019), such was the case in many young people we surveyed and interviewed, especially those working on site.

The results also offer new insights into access to resources to management WLB boundaries between different roles within the industry. Our new categorization of workers into three types according to their ability to manage their boundaries between work and non-work domains also offers a new expanded typology to understand how WLB differs across roles within the construction industry. Current role delineations relating to WLB are limited because they only focus on salaried and wage earners and those working in on-site and off-site roles (Townsend *et al.*, 2006; Lingard *et al.*, 2007; Lingard and Turner, 2022).

The lack of statistically reliable evidence that men and women experience different challenges in managing their WLB, also contrasts much previous WLB research (Lingard and Francis, 2007; Bowen *et al.*, 2018; Kumar and Chaturvedi, 2018). It was found that both men and women (especially younger respondents) see the delineation between men and women in the WLB context as less relevant than is widely portrayed in existing research literature due to an increasing blurring of the traditional delineation between men and women's roles at work and home in society. Most participants felt that improved WLB in construction was important to both men and women and this finding is supported by other recent research outside construction (Standing Committee on Economy and Gender and Economic Equality, 2021). This finding may also be due to women in construction tending to have greater access to flexibility provisions and supervisor support than men (see Lefrançois and Trottier, 2022; Galardo and Trottier, 2022). However, no evidence was found to support this. Overall, the findings support Raiden and Räisänen (2013) and Neilson (2023) who call for more research which questions that WLB is a female orientated issue and which explores how "new men" balance their work-life roles.

In relation to research question three, it was found that most people responded to the lack of boundary management resources to achieve a healthy WLB by preferencing performance in their work over their performance in life outside work. Again, this highlights the coercive culture of long working hours in the construction industry which requires and expects people

to put their work responsibilities and interests before those of their life outside work (see also Lingard and Turner, 2023a, b). While the findings that people want more flexibility in their work reflect previous research (Turner *et al.*, 2009), this was highly conditional on a range of factors such as impacts on co-workers, employer competitiveness and personal income. This may explain the difference between the concepts of "offered" and "practiced" flexibility reported in construction by Holden and Sunindijo (2018). Interestingly, without the possibility of flexibility or without opting to take advantage of flexibility provisions offered by their employers, our results indicate that technology was employed as a potentially powerful way for people to manage their work life boundaries to achieve a WLB. Previous research has identified technological interventions such digital twin platforms as part of broader WLB strategies in construction (Ogunseiju *et al.*, 2021). These technologies not only promote physical wellbeing but also enhance workers' autonomy and capacity for boundary control (Ogunseiju *et al.*, 2021). Similarly, the emerging Construction 5.0 paradigm offers a more human-centric and digitally integrated project environment, aligning technological advancement with workforce wellbeing (Yitmen *et al.*, 2024). While boundary theory shows how technology can create new or altered boundaries between work and personal life, leading to pressures for constant connectivity, it also acknowledges that technology can be used as a tool for boundary management to achieve a healthy WLB (see Ollier-Malaterre *et al.*, 2019; Ogunseiju *et al.*, 2021).

Finally, the findings produce new insights into the relationship between individual opportunities for boundary management to achieve a healthy WLB and the context in which projects are developed and procured. Adding to previous research which has highlighted the links between WLB and project cultures (Crook and Tessler, 2021), unrealistic project deadlines (Kumar and Chaturvedi, 2018) and other factors such as competitive tendering (Lingard and Turner, 2022), the findings also link boundary management opportunities to a range of other project-related factors such which determine the value of weekend work such as cost and time pressures, DA conditions; physical site constraints; project complexity; project program and budget constraints; the way that risks for project delays are distributed; levels of liquidated damages for project delays, and the willingness of clients to share the potential costs of boundary management resources such as flexible working.

Conclusion

The findings of this research indicate that Boundary Theory provides a valuable new conceptual lens to advance current theorization and understanding of WLB in the construction industry and make several contributions to the advancement of research and practice in this growing area of construction management research.

First, findings show that one cannot generalise about poor WLB in the construction industry, despite what many previous studies suggest. Rather, WLB varies significantly across the construction workforce depending on a range of variables such as people's role, seniority, personal circumstances and project constraints.

Second, findings show that the relationship between long working hours and a healthy WLB is not as straightforward as current research portrays. Contrary to much current research, long working hours do not necessarily lead to a poor WLB. This depends on a wide range of factors which determine the flexibility permeability and strength of their temporal, physical and psychological work life domain boundaries. These factor include: personal WLB preferences; age; gender; stage of life; marital status; wider economic conditions such as cost of living; and the WLB provisions of organizations and projects people worked for.

Third, it is found that the reason for the differences in WLB across the workforce can be explained by the disparities in access to resources people face in managing their temporal, physical and psychological boundaries between their work and non-work domains. For many people in the construction industry, the boundaries between work and non-work domains in the construction industry remain very strong, impermeable and inflexible.

Fourth, the findings reveal a considerable degree of inequity and perceived unfairness in the resources available to manage these boundaries to achieve a healthy WLB in the industry. Significant generational inequalities in access to resources for young people were highlighted, especially for those working in junior on-site supervisory roles (especially on large commercial and infrastructure projects). To deepen this understanding, the findings also offer a new three-level categorization of roles across the workforce based on role, work location, and employment type:

(1) Group 1- Off-project salaried staff in management and administrative roles;

(2) Group 2- On-project salaried workers in professional and supervisory roles;

(3) Group 3- On-project wage earners in operative/trade roles.

This threefold categorization reveals substantial variations in work hours, flexibility (where and when), paid and unpaid overtime across the groups, and WLB outcomes, adding much-needed nuance to the overly simplistic binary of salaried vs. waged workers found in current literature. Importantly, this framework offers an adaptable model that could be applied in other international construction contexts where work cultures and employment structures may differ but where similar hierarchical, role-based dynamics likely persist. By recognising these differentiated workforce groups, policymakers and organisational leaders across jurisdictions can better target WLB interventions and equity reforms to the distinct needs of each group.

Fifth, while this study focused on the NSW construction industry, the institutional barriers identified such as cultural norms, hierarchical workplace structures, and gaps between formal WLB policies and actual practices are common in many construction contexts globally. The findings emphasise that improving work-life balance requires more than policy design, it demands confronting deeper institutional barriers such as embedded cultural norms, informal workplace practices, and project-level operational dynamics that may undermine those policies in practice. These institutional barriers can significantly undermine the effectiveness of WLB initiatives if left unaddressed. To this end, policymakers and industry leaders in other jurisdictions may benefit from developing industry specific WLB frameworks that are not only grounded in policy but also supported by regulatory oversight, incentives for compliance, and engagement strategies tailored to the realities of project-based construction work.

Sixth, the findings provide new insights into the conditionality of people's receptivity to take-up organizational initiatives which provide them with resources to manage their work/non-work boundaries to optimise their WLB based on issues. These include potential impacts on pay, employer competitiveness, project performance, project co-worker's WLB and additional requirements to work extended working hours during the week *in lieu* of weekends off. This finding highlights important limitations in using boundary theory to explain and provide solutions to improving peoples' WLB in the construction industry. It is clear that WLB is a complex theoretical construct which needs to be understood through a range of complementary conceptual frameworks which also help to explain why people may not accept the help they are given by employers to improve their WLB. We therefore call for more theoretical research in this important field of study.

Finally, the findings show that boundary management opportunities at an individual level are determined by the context in which projects are procured with factors such as DA conditions, economic circumstances and practices such as competitive tendering and unfair contracts determining the ability and willingness of employers to offer provisions which provide people with the resources to manage their WLB in a healthy way.

Practically the results indicate that improving the equality of access to resources to help people manage their work and non-work boundaries is key to improving WLB in the construction industry. The types of resources which could be made available to workers include: access to flexible working provisions like flextime, job sharing, and remote work if

possible; time management training and tools like daily planners and access to coaches; stress management training in techniques such as journalling, mindfulness and meditation; mental health support such as access to counselling, psychologists; Wellness Programs such as fitness, dietary programs and sleeping advice; Digital Detox periods which provide time for people to disconnect from work technologies; Take breaks from technology and social media to recharge; Financial Stress Management techniques such as budgeting: Encouraging people to have breaks during working hours; tackling cutures of presentesm by assessing people on productivity rather than time spent at work; Manager leading by example; parental support schemes such as childcare assistance; and encouraging a positive and supportive work environment.

It is also important that employers develop WLB initiatives which are both responsive to the needs of individuals, their project teams and which do not require them to work more productively or intensely to compensate. Critically, resources to help people manage their WLB boundaries must be made equally available to everyone in the construction workforce regardless of age, gender, role etc. and they must be communicated effectively and monitored and enforced in practice. Organizations also need to tackle traditional workplace cultures and norms which can undermine the intent of such policies and initiatives in practice and encourage and support employees to take responsibility for their WLB by taking-up the initiatives offered.

In reporting the above results, the limitations of generalising this research to other contexts are acknowledged. For example, the research was conducted within the specific context of the NSW construction industry. Construction industry cultures and regulatory environments vary from country-to-country and are likely to influence the answers to our research questions. Therefore further research is needed in other geographical and regulatory contexts to test our findings. The research was also undertaken in a period of boom and skills shortages where work and personal pressures to work long hours were intensified. In this economic context, employers may have been less willing to offer resources to help people manage their WLB and people may have been less willing to accept them due to impacts on their projects. Therefore, more research is needed in other economic contexts. For example, in a recession employers may be more willing to allow flexible working rather than having to lay off staff. Employees may also be happy to take time off work to recover from long hours worked during a boom period. Finally, we recommend that more research be conducted into the informal cultural norms and practices which may undermine the intent of formal WLB policies. The mobilization of new institutional theory may be especially valuable as a conceptual lens because it recognises the inherent tensions between informal and formal workplace rules, norms and practices. Finally, further research is needed into the inequities in access to boundary management resources we discovered in our research. In particular, further research is needed into the effects on those who are most impoverished such as young people working on site in relatively junior roles.

Ethics statement

This research was approved by the Human Research Ethics Committee of the University of Technology Sydney, Australia. Reference: ETH22-7710.

Data availability statement

The participants of this study did not give written consent for their data to be shared publicly, so due to the sensitive nature of the research supporting data is not available.

Declaration of generative AI and AI-assisted technologies in the writing process

During the generation of this paper the authors did not use generative AI and AI-assisted technologies.

Acknowledgments

The authors would like to thank the NSW Master Builders Association for their sponsorship and assistance with this research. A special thanks to the Late Brian Seidler AM, Elena Worsfold and Cameron Spence for their contributions to this important research.

References

ABS (2023), *Labour Force, Australia, Detailed*, Australian Bureau of Statistics, Canberra, available at: https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia-detailed/dec-2023 (accessed 8 April 2025).

Adah, C.A., Aghimien, D.O. and Oshodi, O. (2025), "Work–life balance in the construction industry: a bibliometric and narrative review", *Engineering, Construction and Architectural Management*, Vol. 32 No. 1, pp. 38-58, doi: 10.1108/ECAM-02-2023-0150.

Alkilani, S. and Loosemore, M. (2024), "The employability of skilled female migrants in the Australian construction industry", *Smart and Sustainable Built Environment*, Vol. ahead-of-print No. ahead-of-print, doi: 10.1108/SASBE-06-2024-0243.

Alzoubi, Y., Locatelli, G. and Sainati, T. (2024), "The ugly side of construction: modern slavery in the 2022 FIFA World Cup program", *Construction Management and Economics*, Vol. 42 No. 5, pp. 412-430, doi: 10.1080/01446193.2023.2269434.

Amatea, E.S., Cross, E.G., Clark, J.E. and Bobby, C.L. (1986), "Assessing the work and family role expectations of career-oriented men and women: the life role salience scales", *Journal of Marriage and the Family*, Vol. 48 No. 4, p. 831, doi: 10.2307/352576.

Australian Council of Trade Unions (2021), "Insecure work in Australia, ACTU submission to the Senate Select Committee on Job Security: Inquiry into the impact of insecure or precarious employment", *ACTU Submission, 30 April 2021, ACTU D. No 20/2021*, Australian Council of Trade Unions, available at: https://www.actu.org.au/policy/insecure-work-in-australia/ (accessed 16 August 2025).

Bowen, P. and Zhang, R.P. (2020), "Cross-boundary contact, work-family conflict, antecedents, and consequences: testing an integrated model for construction professionals", *Journal of Construction Engineering and Management*, Vol. 146 No. 3, doi: 10.1061/(ASCE)ME.1943-5479.0000977.

Bowen, P., Govender, R., Edwards, P. and Cattell, K. (2018), "Work-related contact, work-family conflict, psychological distress and sleep problems experienced by construction professionals: an integrated explanatory model", *Construction Management and Economics*, Vol. 36 No. 3, pp. 153-174, doi: 10.1080/01446193.2017.1341638.

Brauner, C., Wöhrmann, A., Frank, K. and Michel, A. (2019), "Health and work-life balance across types of work schedules: a latent class analysis", *Applied Ergonomics*, Vol. 81, 102906, doi: 10.1016/j.apergo.2019.102906.

Brough, P., Timms, C., Chan, X.W., Hawkes, A. and Rasmussen, L. (2020), "Work–life balance: definitions, causes, and consequences", in Theorell, T. (Ed.), *Handbook of Socioeconomic Determinants of Occupational Health*, Springer International Publishing, pp. 473-487, doi: 10.1007/978-3-030-05031-3_20-1.

Building Commission NSW (2024), *Building Commission NSW Women in Construction Report*, Building Commission NSW, Sydney, available at: https://www.nsw.gov.au/departments-and-agencies/building-commission/building-and-construction-resources/research-on-women-construction-industry (accessed 10 April 2025).

Carlson, D.S., Kacmar, K. and Williams, L. (2000), "Construction and initial validation of a multidimensional measure of work/family conflict", *Journal of Vocational Behavior*, Vol. 56 No. 2, pp. 249-276, doi: 10.1006/jvbe.1999.1713.

Clark, S.C. (2000), "Work-family border theory: a new theory of work-family balance", *Human Relations*, Vol. 53 No. 6, pp. 747-770, doi: 10.1177/001872670053600.

Commonwealth of Australia (2023), *The Senate Select Committee on Work and Care Final Report*, Commonwealth of Australia, Canberra, available at: https://apo.org.au/node/321832 (accessed 13 April 2025).

Crook, D. and Tessler, A. (2021), "The cost of doing nothing report", Oxford Economics and the Culture in Construction Taskforce, available at: https://cultureinconstruction.com.au/wp-content/uploads/2021/09/The-Cost-of-Doing-Nothing-Report.pdf (accessed 8 April 2025).

Dainty, A. and Loosemore, M. (2012), *Human Resource Management in Construction: Critical Perspectives*, 2nd ed., Routledge, London, doi: 10.4324/9780203842478.

Desrochers, S. and Sargent, L.D. (2004), "Boundary/border theory and work-family integration", *Organization Management Journal*, Vol. 1 No. 1, pp. 40-48, doi: 10.1057/omj.2004.11.

Dinh, H., Strazdins, L. and Welsh, J. (2017), "Hour-glass ceilings: work-hour thresholds, gendered health inequitys", *Social Science and Medicine*, Vol. 176, pp. 42-51, doi: 10.1016/j.socscimed.2017.01.024.

Downey, L. and Stough, C. (2018), *Measuring the Psychological Impact of Work Related Stress and Related Occupational Factors in the Australian Infrastructure Construction Industry*, Swinburne University, Melbourne, available at: https://roads.org.au/wp-content/uploads/Mental-Health-Study-Outcomes.pdf (accessed 17 June 2025).

Firose, M.M., Chathurangi, B.N.M. and Kamardeen, I. (2025), "Work stress among construction professionals during an economic crisis: a case study of Sri Lanka", *Smart and Sustainable Built Environment*, Vol. ahead-of-print No. ahead-of-print, doi: 10.1108/SASBE-10-2024-0411.

Francis, V., Lingard, H. and Gibson, A. (2006), *A Qualitative Study of Work-Life Experiences in the Public and Private Sectors of the Australian Construction Industry*, Construction Industry Institute, Australia, available at: https://findanexpert.unimelb.edu.au/scholarlywork/283914-a-qualitative-study-of-work-life-experiences-in-the-public-and-private-sectors-of-the-australian-construction-industry (accessed 12 July 2025).

Galardo, L. and Trottier, M. (2022), "How supervisor, co-worker, and spousal social support influences the experience of workload and work-family conflict: results from a survey of construction workers in Québec", *Construction Management and Economics*, Vol. 40 No. 4, pp. 331-342, doi: 10.1080/01446193.2022.2037674.

Galea, N., Powell, A., Loosemore, M. and Chappell, L. (2015), "Designing robust and revisable policies for gender equality: lessons from the Australian construction industry", *Construction Management and Economics*, Vol. 33 Nos 5-6, pp. 375-389, doi: 10.1080/01446193.2015.1042887.

Galea, N., Powell, A., Chappell, L. and Loosemore, M. (2020), "The gendered dimensions of informal institutions in the Australian construction industry", *Gender, Work and Organization*, Vol. 27 No. 6, pp. 1214-1231, doi: 10.1111/gwao.12458.

Galea, N., Ramia, I., Sharma, A. and Saunders, I. (2021), "Project 5: a weekend for every worker report", UNSW Sydney, available at: https://www.humanrights.unsw.edu.au/research/current-research/project-5-weekend-for-every-worker (accessed 15 August 2025).

Ganault, J. and Pailhé, A. (2022), "Work-life balance through the life course", in Bertolini, S. and Poggio, B. (Eds), *Research Handbook on Work–Life Balance: Emerging Issues and Methodological Challenges*, Edward Elgar Publishing, pp. 72-87, doi: 10.4337/9781788976053.00011.

Gioia, D.A., Corley, K.G. and Hamilton, A.L. (2013), "Seeking qualitative rigor in inductive research: notes on the Gioia methodology", *Organizational Research Methods*, Vol. 16 No. 1, pp. 15-31, doi: 10.1177/1094428112452151.

Gragnano, A., Simbula, S. and Miglioretti, M. (2020), "Work-life balance: weighing the importance of work-family and work-health balance", *International Journal of Environmental Research and Public Health*, Vol. 17 No. 3, p. 907, doi: 10.3390/ijerph17030907.

Greenhaus, J., Collins, K. and Shaw, D. (2003), "The relation between work-family balance and quality of life", *Journal of Vocational Behaviour*, Vol. 63 No. 3, pp. 510-531, doi: 10.1016/S0001-8791(02)00042-8.

Guest, G., MacQueen, K.M. and Namey, E.E. (2012), *Applied Thematic Analysis*, SAGE Publications, doi: 10.4135/9781483384436.

Holden, S. and Sunindijo, R.Y. (2018), "Technology, long work hours, and stress worsen work-life balance in the construction industry", *International Journal of Integrated Engineering*, Vol. 10 No. 2, pp. 13-18, doi: 10.30880/ijie.2018.10.02.003.

Holdsworth, S., Turner, M., Scott-Young, C.M. and Sandri, K. (2020), *Women in Construction: Exploring the Barriers and Supportive Enablers of Wellbeing in the Workplace*, RMIT University, Melbourne, doi: 10.13140/RG.2.2.34052.65920.

Holt, G.D. (2014), "Asking questions, analysing answers: relative importance revisited", *Construction Innovation*, Vol. 14 No. 1, pp. 2-16, doi: 10.1108/CI-06-2012-0035.

International Labour Organization (2022), *Working Time and Work-Life Balance Around the World*, Geneva: International Labour Office, available at: https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_protect/@protrav/@travail/documents/publication/wcms_864222.pdf (accessed 8 April 2025).

International Labour Organization (2023), "Statistic on working time, ILOSTAT", available at: https://ilostat.ilo.org/topics/working-time/ (accessed 13 April 2025).

Kalliath, T. and Brough, P. (2008), "Work-life balance: a review of the meaning of the balance construct", *Journal of Management and Organization*, Vol. 14 No. 14, pp. 323-327, doi: 10.5172/jmo.837.14.3.323.

Kodz, J., Harper, H. and Dench, S. (2002), *Work-Life Balance: Beyond the Rhetoric*, The Institute for Employment Studies, UK, ISBN 1 85184 313 2.

Kotera, Y., Green, P. and Sheffield, D. (2019), "Work-life balance of UK construction workers: relationship with mental health", *Construction Management and Economics*, Vol. 38 No. 3, pp. 291-303, doi: 10.1080/01446193.2019.1625417.

Kumar, K. and Chaurvedi, R. (2018), "Women in construction industry: a work-life balance perspective", *International Journal of Civil Engineering and Technology*, Vol. 9 No. 8, pp. 823-829, available at: https://iaeme.com/MasterAdmin/Journal_uploads/IJCIET/VOLUME_9_ISSUE_8/IJCIET_09_08_084.pdf (accessed 12 July 2025).

Lambert, S. (1990), "Processes linking work and family: a critical review and research agenda", *Human Relations*, Vol. 43 No. 3, pp. 239-257, doi: 10.1177/001872679004300303.

Lefrançois, M. and Trottier, M. (2022), "Work–family balance in the construction industry: why gender analysis matters to develop sustainable interventions", *Ergonomics*, Vol. 65 No. 11, pp. 1525-1536, doi: 10.1080/00140139.2021.2021281.

Lingard, H. and Francis, V. (2004), "The work-life experiences of office and site-based employees in the Australian construction industry", *Construction Management and Economics*, Vol. 22 No. 9, pp. 991-1002, doi: 10.1080/0144619042000241444.

Lingard, H. and Francis, V. (2007), "Negative interference between Australian construction professionals' work and family roles evidence of an asymmetrical relationship engineering", *Construction and Architectural Management*, Vol. 14 No. 1, pp. 79-93, doi: 10.1108/09699980710716990.

Lingard, H. and Francis, V. (2009), *Managing Work-Life Balance in Construction*, Spon Press, London, 9780203030110, doi: 10.4324/9780203030110.

Lingard, H. and Sublet, A. (2002), "The impact of job and organizational demands on marital of relationship satisfaction and conflict among Australian civil engineers", *Construction Management and Economics*, Vol. 20 No. 6, pp. 507-521, doi: 10.1080/01446190210156073.

Lingard, H. and Turner, M. (2022), "Making time for life: a whole-of-industry initiative to reducing work hours and promoting health and gender inclusion in project-based construction work", *Project Leadership and Society*, Vol. 3, 100065, doi: 10.1016/j.plas.2022.100065.

Lingard, H. and Turner, M. (2023a), *Work, Health and Wellbeing in the Construction Industry*, Routledge, London, 9780367410094.

Lingard, H. and Turner, M. (2023b), *Work, Health and Wellbeing in the Construction Industry*, Taylor & Francis, London, 9780367814236.

Lingard, H.C., Yip, B., Rowlinson, S. and Kvan, T. (2007), "The experience of burnout among future construction professionals: a cross-national study", *Construction Management and Economics*, Vol. 25 No. 4, pp. 345-357, doi: 10.1080/01446190600599145.

Lingard, H., Francis, V. and Turner, M. (2010), "Work-family conflict in construction: case for a finer-grained analysis", *Journal of Construction Engineering and Management*, Vol. 136 No. 11, pp. 1196-1206, doi: 10.1061/(ASCE)CO.1943-7862.0000229.

Lingard, H., Nette, A., Harley, J., Pirzadeh, P., Clarke, J., Yazidjoglou, A., Strazdins, L. and Sargent, G.M. (2021), *Triple Wins: Work Hour Cultures for Health, Safety and Gender Equality in Construction Literature Review*, Construction Work Health and Safety Research @ RMIT, RMIT University, Australia, available at: https://www.rmit.edu.au/about/schools-colleges/property-construction-and-project-management/research/research-centres-and-groups/construction-work-health-safety-research/projects/work-hour-cultures-construction (accessed 12 July 2025).

Mellner, C., Aronsson, G. and Kecklund, G. (2014), "Boundary management preferences, boundary control, and work-life balance among full-time employed professionals in knowledge-intensive, flexible work", *Old site of Nordic Journal of Working Life Studies*, Vol. 4 No. 4, pp. 7-23, doi: 10.19154/njwls.v4i4.4705.

Mende, J. (2019), "The concept of modern slavery: definition, critique, and the human rights frame", *Human Rights Review*, Vol. 20 No. 2, pp. 229-248, doi: 10.1007/s12142-018-0538-y.

Neilson, K. (2023), "This is what the next iteration of flexible work could look like – HRM online, Australian Research Institute", available at: https://www.hrmonline.com.au/future-of-work/next-iteration-of-flexible-work/ (accessed 13 April 2025).

Newbold, P., Carlson, W.L. and Thorne, B. (2013), *Statistics for Business and Economics*, Pearson Education, UK, 978-0136085362.

NHMRC (2018), "The Australian code for the responsible conduct of research", available at: https://www.arc.gov.au/sites/default/files/2023-05/the-australian-code-for-the-responsible-conduct-of-research-2018.pdf (accessed 8 April 2025).

Noon, M. and Blyton, P. (2007), *The Realities of Work: Experiencing Work and Employment in Contemporary Society*, Basingstoke, Palgrave, New York, ISBN 1-4039-9493-5.

Ogunseiju, O.R., Olayiwola, J., Akanmu, A.A. and Nnaji, C. (2021), "Digital twin-driven framework for improving self-management of ergonomic risks", *Smart and Sustainable Built Environment*, Vol. 10 No. 3, pp. 403-419, doi: 10.1108/SASBE-03-2021-0035.

Ollier-Malaterre, A., Jacobs, J.A. and Rothbard, N.P. (2019), "Technology, work, and family: digital cultural capital and boundary management", *Annual Review of Sociology*, Vol. 45 No. 1, pp. 425-447, doi: 10.1146/annurev-soc-073018-022433.

Parliament of Australia (2021), "Recent and long-term trends in the use of casual employment", Parliament of Australia, Canberra, Australia, available at: https://www.aph.gov.au/About_Parliament/Parliamentary_departments/Parliamentary_Library/Research/Statistical_Snapshots/2021-22/TrendsCasualEmployment (accessed 13 April 2025).

Parsons, T. (1970), *Social Structure and Personality*, Free Press, New York, 0029248507.

Pradhan, G. (2016), "Conceptualising work-life balance. Institute for social and economic change", Working Paper 369. The Institute for Social and Economic Change, Bangalore, available at: https://www.isec.ac.in/wp-content/uploads/2023/07/WP-368-Gayathri-Pradhan-Final.pdf (accessed 12 July 2025).

Premeaux, S.F., Adkins, C.L. and Mossholder, K.W. (2007), "Balancing work and family: a field study of multi-dimensional, multi-role work-family conflict", *Journal of Organizational Behaviour*, Vol. 28 No. 6, pp. 705-727, doi: 10.1002/job.439.

Raghunathan, T.E. and Grizzle, J.E. (1995), "A split questionnaire survey design", *Journal of the American Statistical Association*, Vol. 90 No. 429, pp. 54-63, doi: 10.2307/2291129.

Raiden, A.B. and Räisänen, C. (2013), "Striving to achieve it all: men and work-family-life balance in Sweden and the UK", *Construction Management and Economics*, Vol. 31 No. 8, pp. 899-913, doi: 10.1080/01446193.2013.802364.

Rincy, V.M. and Panchanatham, N. (2014), "Work life balance: a short review of the theoretical and contemporary concepts", *Continental Journal of Social Sciences*, Vol. 7 No. 1, pp. 1-24, doi: 10.5707/CJSOCSCI.2014.7.1.1.24.

Sarhan, S., Pretlove, S., Elghaish, F., Matarneh, S. and Mossman, A. (2024), "Sources of occupational stress in UK construction projects: an empirical investigation and agenda for future research", *Smart and Sustainable Built Environment*, Vol. ahead-of-print No. ahead-of-print, doi: 10.1108/SASBE-11-2023-0356.

Scott, W.R. (2005), "Institutional theory: contributing to a theoretical research program", in *Great Minds in Management: The Process of Theory Development*, Oxford University Press, Oxford, Vol. 37 No. 2, pp. 460-484, doi: 10.1093/oso/9780199276813.003.0022.

Standing Committee on Economy and Gender and Economic Equality (2021), "Future of the working week", Discussion Paper, Canberra City, Australian Capital Territory: ACT Government, June 2021, available at: https://www.parliament.act.gov.au/__data/assets/pdf_file/0008/1776257/EGEE-Discussion-paper-Future-of-the-working-week.pdf (accessed 12 July 2025).

Sturges, J. (2013), "A matter of time: young professionals' experiences of long work hours", *Work, Employment and Society*, Vol. 27 No. 2, pp. 343-359, doi: 10.1177/0950017012460318.

Sui, P.L.S., Benjamin, K.Q. and Chua, B.K.Q. (2019), *Work–Life Balance in Construction Millennials in Singapore and South Korea*, Spring Nature Singapore, Singapore, doi: 10.1007/978-981-13-1918-1_2.

Tijani, B., Osei-Kyei, R. and Feng, Y. (2020), "A review of work-life balance in the construction industry", *International Journal of Construction Management*, Vol. 22 No. 14, pp. 2671-2686, doi: 10.1080/15623599.2020.1819582.

Tijani, B., Xiao-Hua, J. and Osei-Kyei, R. (2023), "PESTEL analysis of mental health management of project management practitioners (PMPs) in architecture, engineering and construction (AEC) project organization", *Smart and Sustainable Built Environment*, Vol. 12 No. 5, pp. 1002-1030, doi: 10.1108/SASBE-04-2022-0074.

Townsend, K., Bailey, C., Brownn, K., Bradley, L.M., Lingard, H. and Helen, C. (2006), "How would employees' construct a balance between work and non-work life? Work-life balance in the construction industry", *Paper Presented at the 14th International Employment Relations Association Conference*, Hong Kong, available at: https://eprints.qut.edu.au/5292/1/5292.pdf (accessed 12 July 2025).

Tucker, P. and Folkard, S. (2012) "Working time, health and safety: a research synthesis paper, Conditions of Work and Employment Series 31", Geneva, ILO, available at: https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_protect/@protrav/@travail/documents/publication/wcms_181673.pdf (accessed 15 August 2025).

Turner, M., Lingard, H. and Francis, V. (2009), "Work-life balance: an exploratory study of supports and barriers in a construction project", *International Journal of Managing Projects in Business*, Vol. 2 No. 1, pp. 94-111, doi: 10.1108/17538370910930536.

Yitmen, I., Almusaed, A. and Alizadehsalehi, S. (2024), "Facilitating Construction 5.0 for smart, sustainable and resilient buildings: opportunities and challenges for implementation", *Smart and Sustainable Built Environment*, Vol. ahead-of-print No. ahead-of-print, doi: 10.1108/SASBE-04-2024-0127.

Young, F.Y.F. (2016), "Working hour, work-life balance and mental health on construction workers", *Journal of Human Resource Management*, Vol. 4 No. 5, pp. 49-54, doi: 10.11648/j.jhrm.20160405.11.

Corresponding author
Suhair Alkilani can be contacted at: suhair.zaidalkilani@uts.edu.au