



Blurring Boundaries in Work Life: a Scale Development Study on the Perception of Right to Disconnect

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Abstract

The purpose of this research is to develop a scale to assess the perceptions of employees regarding the "Right to Disconnect", which is a legal right in many countries but has not yet been guaranteed by law in Türkiye. In this context, this study is consisted of 4 studies. In Study 1 ($N=14$), a semi-structured in-depth interview form was created based on literature review and expert opinions. Content analysis was used to transform the data obtained from the in-depth interviews into themes, and a draft scale consisting of 25 items was developed. The draft scale was reviewed by experts, and two items were eliminated. The 23-item scale was then pilot tested on 46 participants. In Study 2 ($N=275$), exploratory factor analysis (EFA) was conducted, and four items were eliminated. In Study 3 ($N=324$), confirmatory factor analysis (CFA) was performed and one item was eliminated. As a result, the final 3-factor, 18-item Perception of Right to Disconnect Scale (PRDS) was developed. In Study 4 ($N=214$), the final scale was tested using a model. Consequently, the scale was found to be valid and reliable. The fact that there is no scale in the literature regarding the Right to Disconnect makes this study unique. The use of this scale is important for policymakers, academics, and the business world to obtain data by revealing how the perception of being/not being accessible in business life is reflected in business outcomes.

Keywords Right to disconnect · Digitalization · Scale development · Blurring boundaries

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Introduction

Business world has experienced significant alterations, primarily due to the rapid advancements in information and communication technologies. These developments not only impact the social structure, but also affect business operations. The digital transformation has become even more crucial in the wake of the Covid-19 pandemic, as companies are compelled to adopt changes and transformations to remain competitive and survive (Truța et al., 2023). Remote or hybrid working models and the four-day weekly system have emerged as prominent trends in response to the digitalization of work life. As a result, the distinction between work and non-work life has become increasingly vital. Various countries implement measures to protect these boundaries (Bell et al., 2021). The constant availability of instant communication has blurred the lines between work and personal life, and enabled employers to communicate with employees beyond regular working hours (Pucheta & Ribeiro Costa, 2022). The challenge of maintaining work-life balance is heightened in hybrid or completely remote working environments, where the traditional boundaries between work and non-work life are blurred and digital tools are used for work during non-work hours (Ugwu et al., 2023). Consequently, the increase in total working hours and the disruption of work-family balance caused by flexible and remote working arrangements have resulted in negative consequences (Martucci, 2023).

Reflecting on technological advancements in business presents numerous challenges. One of the most significant difficulties is the perception among employees that they are perpetually busy and have little time for anything other than work. This phenomenon, which arises from a high-speed society, is sometimes viewed as a sign of prestige (Wajcman, 2014). However, it leads to employees being exposed to time pressure, extended working hours, increased error rates, stress, burnout (Avogaro, 2018) and negatively affects employee well-being. Low employee well-being affects employee health and can lead to depression, work-life conflicts, burnout, decreased productivity, and absenteeism in long term (Kessler, 2012). To mitigate these negative effects, various legal regulations have been established to control working hours and prevent adverse effects on employee health and well-being. These regulations typically govern weekly working hours and provide scant assurance regarding after hours. However, the rise of digital tools has made it difficult to prevent access to employees after working hours, even with these regulations in place. Therefore, improvements must be made to address this issue. The most current legal practice on this subject is the "Right to Disconnect," which was first implemented in France (Bell et al., 2021). The Right to Disconnect is a legal right that enables employees to disengage from work-related communication after hours without feeling guilty or anxious (Eurofound, 2021a). This regulation necessitates reassessment of the time paradigm in the employment relationship. The legislation prioritises employee privacy and safeguards their well-being by re-establishing the disturbed balance between work and personal life (Dagnino, 2020). Considering the current state of technology, it is essential to establish the Right to Disconnect to prevent negative consequences arising from the use of digital tools after hours (Ratti & Lempen, 2023). This right helps mitigate work complexity, work-life balance issues, and employee welfare problems caused by rapid technological advancements (Eurofound, 2021b). The aim of this study is to investigate the blurred boundaries between work and non-work life in the global business world, especially in the context of technological development and the increasing use of digital tools, and to evaluate employees' perceptions of the "Right to Disconnect," which is a legal right in many countries worldwide. A scale development study was designed to address this issue.

A crucial aspect of scale development studies is understanding why the scale is necessary (Cohen et al., 1996). In this study, it was observed that no developed scale existed on this subject, and it was aimed to fill this gap. Although the subject has been addressed in numerous studies in recent years, most of them focused on explaining the concept of "Right to Disconnect" (Chiufo, 2019; Müller, 2020; Pansu, 2018; Secunda, 2019; Chudinovskikh, 2019). In this context, based on current experience, the practical applications of the Right to Disconnect have been reviewed, and its advantages and disadvantages have been discussed (Chiufo, 2019; Secunda, 2019; Von Bergen & Bressler, 2019; Weber & Llave, 2021; Lerouge & Trujillo Pons, 2022). Besides, another point mentioned on the subject is the outcomes of the Right to Disconnect (Fiata, 2023; Hesselberth, 2018; Pansu, 2018; Park & Kwon, 2020). Finally, there are studies that evaluate the issue in different countries. Since the concept first appeared in France, studies specifically focused on France. The concept of the Right to Disconnect has been a subject of research in different countries, including the United States (Secunda, 2019), Italy (Dagnino, 2020), Brazil (Ponzilacqua & Silva, 2022), and Romania (Țop, 2023). However no scale studies have been conducted on this topic. The purpose of the developed scale is to make theoretical and practical contributions to the literature. In this regard, the primary objective is to expand the concept and make it measurable, particularly in the social sciences field, where researchers often examine perceptions, attitudes, values, beliefs, and other such concepts that cannot be directly observed (Babbie, 2020). Moreover, the developed scale allows quantification of the concept, enables the assignment of numerical values to responses and observations, and facilitates data collection (Gravetter et al., 2009). Another objective of the scale is to extend theory, such as by providing empirical measurement of theoretical structures (e.g. Limayenm et al., 2003). The standardisation of perceptions among different individuals and groups on the same subject is also made possible through the development of perception scales. This standardisation ensures consistency in the data collection process and allows for comparisons between participants, as well as between countries and cultures (Fowler, 2013). The practical contributions that the developed scale aims to offer can be discussed under the headings of regulation of policies and laws, employee health-productivity, and employer-employee relationship. By evaluating employee perceptions on the matter, valuable data can be provided to policymakers for creating laws that align with rights such as the "Right to Disconnect." Additionally, employers can utilise the scale to better identify the needs, expectations, and potential challenges faced by employees in this context, and implement suitable solutions to address these issues. The insights gained from the gathered data can be used to enhance employee well-being, guarantee work-life balance, and boost productivity. The goal is to improve overall outcomes through the use of data-driven solutions.

In this study, a semi-structured interview form consisting of 5 demographic, 18 multiple-choice, and 12 open-ended questions was applied to 14 participants using the in-depth interview method. The interview records were transcribed and coding tables and themes were created using the content analysis. Based on the determined themes and categories, 25 items were matched according to their themes and categories. After the content validity and question pre-test, 2 items were eliminated and the 23-item survey was started to be administered. A pilot study was carried out on a data set of 46 participants. After the pilot analysis, EFA was conducted with 275 participants and CFA was conducted with 324 participants. In the CFA, Hecht and Allen's (2009) "After hours Boundary Management" scale was used to verify the scale. As a result of the analyses, an 18-item PRDS was developed, consisting of three factors: AOC, PBA, and ADTU. PRDS is designed to measure the perception of employees regarding their

Right to Disconnect from work and the impact of technology on their work-life balance. Accordingly, PRDS was tested on a model. Within the scope of the model, the mediating role of Work-Family Conflict (WFC) in the effect of PRDS on Emotional Burnout (EB) was investigated.

In the research, first the conceptual framework was discussed. In this context, information was given about the Boundary Management Theory and the concept of the Right to Disconnect, which constitute the theoretical framework of the study. Subsequently, scale development study comprising four stages was carried out. As this was a scale development study, the study's scale development stages were detailed and implemented, and findings regarding validity and reliability were reported. The research culminated in recommendations for practical application, along with an acknowledgment of the study's limitations.

Conceptual Framework

Theoretical Origins: Boundary Management Theory

Boundary Management Theory focuses on the meaning of work and home for individuals, as well as the ease of transitions between them (Allen et al., 2014). This theory emerged from Nippert-Eng's (1996) classic sociological work, which identified the need to separate work and non-work life spheres (Allen & Eby, 2016). Nippert-Eng (1996) observed that some individuals establish strong boundaries to differentiate their work and personal lives (segmentation), while others create weaker boundaries that enable integration between these domains. The construction of boundaries that facilitate segmentation or integration is influenced by various factors, such as the nature of the profession, the presence of colleagues-family members, or individual preferences (Bulger et al., 2007). The segmentation approach entails low flexibility in transitioning between work and non-work life, while integration offers high flexibility. For example, an individual following the integration approach may readily transition from work to personal matters or vice versa. For those who follow segmentation, will continue his work and non-work lives as separate areas. For example; such a person does not take a break from work to take care of personal affairs or is not interested in work after hours (Nippert-Eng, 1996).

This approach is predicated on the notion that rapid advancements in information communication technologies and digital tools have diminished the boundaries between work and non-work lives, thereby necessitating constant communication and access to individuals around the clock. Thus, boundaries of work and non-work life have become even more blurred (Allen et al., 2014). When an individual cannot draw the boundaries between work and non-work life, this situation engenders a number of negative consequences, including a reluctance to disengage from work-related matters, an addiction to digital devices, work-family conflict, and a disruption of work-life balance. Especially as management has become more professional, the fact that work and non-work life are governed by different principles and should be separated from each other has begun to be accepted. At this point, segmentation depends on various factors such as the institution, family, environment, and/or legal regulations (Bulger et al., 2007). The concept of the Right to Disconnect, which is the subject of this research, refers to a

legislative framework that facilitates effective segmentation and makes it possible to prevent the individual from remaining in work-related communication after hours.

Conceptual Definition: the Right to Disconnect

The development of information and communication technologies has sparked transformation and innovation in business, workforce organisation, and employment relations in the realm of working life. Although this development has several benefits, it has also given rise to new challenges that must be addressed to prevent unfavourable consequences and conflicts. For instance, the use of digital tools has disturbed the balance between professional and personal life by allowing employees to receive and send emails, texts, or voice messages related to work anytime, anywhere. The Right to Disconnect is designed to safeguard well-being, health, and safety of employees (Workplace Relations Commission, 2021). In response to the problems caused by the constant connection, many countries have adopted the recognition of the "Right to Disconnect" and related policies (Chiuffo, 2019). France became the first country to incorporate the Right to Disconnect in its legislation (Republique Francaise, 2024). The Right to Disconnect, the national cross-sector agreement, which became law on August 8, 2016, under the provisions of the French Labor Code (Lerouge & Trujillo Pons, 2022), sets out when digital tools should be turned off and encourages businesses to refrain from intruding into employees' private lives. This right, which was recognized in 2013, has led to regulations in European Union (EU) countries and other nations (Eurofound, 2021a). According to the 2021 Eurofound report, Belgium, France, Italy, and Spain have enacted legislation that includes the Right to Disconnect (Eurofound, 2021a). Lastly, Australia is working on a draft law concerning the "Right to Disconnect," which will allow employees to decline "unreasonable" professional communication (The New York Times, 2024).

The Right to Disconnect refers to an employee's right to avoid all work-related electronic communication tools (such as e-mail, telephone, WhatsApp, etc.) after hours and on holidays, without worrying about facing any sanctions (Müller, 2020). Disconnection is understood as a right that grants workers the possibility of remaining inaccessible or not being contacted by any means, through digital or other devices, on matters related to their work after hours (For example; during breaks, daily, weekly and annual rest periods, work leaves, holidays, etc.) (Chiuffo, 2019). The Right to Disconnect is expressed not only when the worker leaves the physical boundaries of the workplace, but also during rest periods even at work. It is accepted that the Right to Disconnect should cover not only the execution of work, but also the complete disconnection of the worker from work psychologically (Mattern, 2020). Nowadays, many managers routinely communicate with employees or colleagues via email or phone after working hours, on weekends, during holidays, during breaks, and while spending time with their families. This practice is not uncommon and has become a norm in some companies and countries. For this reason, some employees are willing to bear the burden of busy work schedules that invade their private lives, violate work and non-work life boundaries, and prevent many fundamental rights such as the right to rest (European Parliament, 2021). The boundaries of work and non-work life, which are becoming more blurred day by day, prevent employees from exercising many of their fundamental rights, especially the right to rest. Therefore, it is necessary to introduce new legal regulations to protect these rights and freedoms.

Material and Method

Development of the Perception of Right to Disconnect Scale

Within the scope of this study, the PRDS was developed. The steps followed in this context are shown in Fig. 1.

Study-1: Literature Review and Conducting In-Depth Interviews, Generating Scale Items

In accordance with the first stage of the scale development, the concept of Perception of Right to Disconnect (PRD) was defined within the framework of Boundary Management Theory. Subsequently, both deductive and inductive approaches were employed to develop scale items. The deductive method involved utilising existing literature and prior scales to generate a question pool (Teeluckdharry et al., 2021). Conversely, the inductive method entails gathering data from a sample of participants through focus group studies and interviews, and then creating scale items based on the obtained data (Hinkin, 2005). In this research, both the existing literature and theoretical framework were examined and in-depth interviews were conducted on a sample to create scale items. The main purpose of in-depth interviews is to understand how and why participants form this perspective. In formulating interview questions, studies on the Right to Disconnect (e.g. Pansu, 2018; Secunda, 2019) and Boundary Management Theory papers (e.g. Allen et al., 2021; Cobb et al., 2022; Allen et al., 2014) were utilized. Sample articles are shared below, and all sources are also included in the study's bibliography and manuscript.

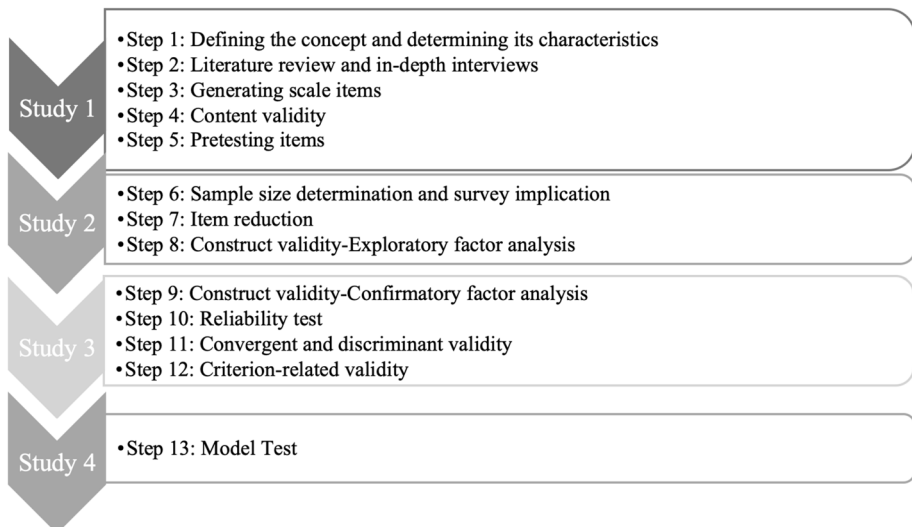


Fig. 1 Scale development steps. Source Boateng et al., 2018; Teeluckdharry et al., 2021; Hinkin, 2005

Participants and Procedure:

To create the scale items, in-depth interviews were conducted with 14 volunteer participants, who worked under a superior manager. The demographic information of the participants is shown in Table 1.

According to Table 1, the sample consisted of 14 participants. Among them 9 were female and 5 were male participants. The majority of participants held higher educational qualifications, with 8 participants having a Master's or Ph.D. degree and 6 participants having university degree. The participants come from diverse professional fields, reflecting a broad range of expertise: human resources specialist, finance and treasury specialist, engineer, video editor etc.

In-depth interviews were conducted with a sample of private-sector employees in Istanbul who had experience with both face-to-face and remote working methods. The pandemic has led to a significant number of employees working remotely, which has resulted in blurred work hours and disrupted work-life balance (Banerjee & Gupta, 2024). That's because, we ensure that the employees included in this study had experienced remote working. The semi-structured interview form was created based on a literature review of the subject, and the interviews lasted between 15 and 30 min on average.

Results:

The data obtained from the interviews were deciphered using content analysis. The transcription results are summarised in Table 2 by separating the categories, sub-themes, and themes.

The sentence structure of the items was based on a literature review and interviews, and attention was paid to the cognitive, affective, and behavioural elements. Since this study focused on the PRDS, cognitive items were used more extensively. The scale items were designed to address a single subject, avoid leading expressions, and be ethical. To reduce

Table 1 Participants' demographic information

Participant No	Gender	Education status	Age	Profession
P-1	Female	University	32	Human Resources Specialist
P-2	Male	Master/Ph.D	30	Finance and Treasury Specialist
P-3	Female	University	32	Accounting Specialist
P-4	Female	Master/Ph.D	33	Engineer
P-5	Female	Master/Ph.D	32	Marketing Specialist
P-6	Female	University	37	Customer Support Specialist
P-7	Male	Master/Ph.D	37	Logistics Foreign Trade Specialist
P-8	Male	Master/Ph.D	35	Product Manager
P-9	Female	Master/Ph.D	36	Customer Relations Manager
P-10	Female	Master/Ph.D	35	Banker
P-11	Male	University	30	Video Editor
P-12	Female	University	40	Application and Calibration Specialist
P-13	Female	Master/Ph.D	42	Project Manager
P-14	Male	University	30	Automation Engineer

Table 2 Interview transcription results

Codes	Categories	Themes
Computer, tablet, mail, smartphone, WhatsApp messages, phone call	Digital Tools	Digitalization
Digital vehicle barriers (do not disturb mode, etc.)		
Obligation to return after hours	After hours Digital Tool Usage Pressure	Pressure to Be Available
Pressure to be available after hours		
The obligation to stay in constant communication	Staying in Constant Communication	
Constant feeling of missing something		
Calling from company phone after hours	Workplace Culture	Always On Culture
Calling from personal phone after hours		
Being accessible on public holidays		
Being accessible during annual leaves		
Being accessible on weekends		
Being accessible after hours		
Use of digital tools after hours for work		
Culture of being accessible after hours for work		
Managers contacting after hours		
Compliance/non-compliance with working hours in the labour law	Legislation	
Receiving/not receiving additional payment for working after hours		

response bias, the two most striking items were selected and asked again in the form of reverse questions. Consequently, a question pool of 25 items was created. A 5-point Likert-type scale was used in this study, with the following statements: "5 = Strongly Agree, 4 = Agree, 3 = Neither agree nor disagree, 2 = Disagree, 1 = Strongly Disagree."

Content Validity and Pretesting Items:

The created scale items were reviewed by six field experts for suitability, scientific accuracy, grammatical errors, and appropriateness for the respondent population. Two items were removed from the scale because they lacked content validity. The research continued with the remaining 23-item scale. A pilot study was conducted with 46 participants. During the pilot study, the participants evaluated the extent to which each item represented the core concept using the scales of "clearly representing," "somewhat representing," and "not representing." It was determined that all expressions of the 23-item scale represented the variable.

Study-2: Exploratory Factor Analysis

In the second stage of scale development, EFA was conducted. Before conducting this analysis, the sample size was determined and a 23-item survey was conducted. As a result of the implementation of the questionnaire, an item reduction was made. EFA was then applied to test the construct validity.

Participants and Procedure:

At this stage of scale development, it is crucial for the researcher to ensure that data is collected from a sufficiently large sample so that subsequent analyses can be conducted appropriately. The sample size used to develop a scale is often a subject of debate, and the adequate size can vary from study to study (Teeluckdharry et al., 2021). According to Nunnally (1978), data should be collected from at least ten participants for each scale item, while Hair et al. (2019) suggested that a rate of five respondents per item scale may be sufficient. Generally, in larger samples, measurement errors are lower, factor loadings are more stable, and the results can be better generalised (Osborne & Costello, 2004). Based on these findings, Nunnally's (1978) assumption of "collecting data from at least ten participants for each scale item" was adopted as the basis for the 23-item scale. The aim was to reach at least 230 people within the scope of EFA and CFA. EFA was performed on 275 participants, which is the first part of the data collection phase. Google Forms was used for the survey.

Table 3 below shows information about the demographic data of the participants in Study-2, Study-3 and Study-4.

In Study 2, the sample consisted of 275 participants. Among them 56.7% were female (156 participants), 42.2% were male (116 participants) and 1.1% (3 participants) didn't specify their gender. The majority of participants were born between 1980 and 1994 (64.7%), indicating that a significant portion of the sample consisted of Generation Y individuals. 24% of the participants were born in 1995 and later, representing Generation Z. The remaining participants were distributed as follows: 9.8% born between 1965 and 1979, 1.1% between 1946 and 1964, and only 0.4% born in 1945 or earlier. Most participants held higher educational qualifications, with 50.9% having a Master's

Table 3 Demographic information about participants in Study-2, Study-3 and Study-4

		Study-2		Study-3		Study-4	
Gender		N	%	N	%	N	%
	Female	156	56,7	144	44,4	125	58,4
	Male	116	42,2	177	54,7	88	41,2
	Not specified	3	1,1	3	0,9	1	0,4
Year of birth		N	%	N	%	N	%
	1945 and below	1	0,4	2	0,6	1	0,4
	1946–1964	3	1,1	3	0,9	4	1,8
	1965–1979	27	9,8	32	10	28	13,1
	1980–1994	178	64,7	208	64,2	135	63,1
	1995 and above	66	24	79	24,3	46	21,6
Education		N	%	N	%	N	%
	High school	3	1,1	2	0,6	3	1,4
	Associate Degree	6	2,2	8	2,5	7	3,3
	University	126	45,8	140	43,2	101	47,2
	Master/Ph.D	140	50,9	174	53,7	103	48,1
Profession		N	%	N	%	N	%
	Engineer	43	15,7	40	12,3	36	16,8
	HR Specialist/Manager	37	13,5	29	9	42	19,6
	Finance Accounting Specialist/Manager	28	10,2	19	5,9	10	4,7
	Academician	24	8,7	20	6,1	10	4,7
	Banker	23	8,4	57	17,6	16	7,5
	Sales Specialist/Manager	16	5,8	19	5,9	6	2,8
	Purchasing Specialist/Manager	10	3,6	27	8,4	10	4,7
	Other	94	34,1	113	34,8	84	39,2
	Total	275	100	324	100	214	100

or Ph.D. degree and 45.8% holding a university degree. A small proportion completed associate degrees (2.2%) or high school (1.1%). The professions varied widely. The largest group identified as “Other” (34.1%), suggesting a range of less common professions not categorized specifically. Among the specified professions, engineers represented 15.7%, followed by HR specialists or managers at 13.5%, and finance/accounting specialists or managers at 10.2%. The sample also included 8.7% academics, 8.4% bankers, 5.8% sales specialists or managers, 3.6% purchasing specialists or managers.

In Study 3, the sample consisted of 324 participants with the following demographic breakdown. 44.4% of participants were female (144 participants), while 54.7% were male (177 participants) and 0.9% (3 participants) did not specify their gender. The majority of participants were generation Y individuals with 64.2% born between 1980 and 1994. 24.3% of participants were born in or after 1995. Additionally, 10% were born between 1965 and 1979, 0.9% between 1946 and 1964, and 0.6% in 1945 or earlier. Most of the participants had Master’s or Ph.D. degrees (53.7%). Those with university degrees made up 43.2% of the sample. A small fraction completed associate degrees (2.5%) or high school (0.6%). The largest segment of participants fell under the “Other” category (34.8%), indicating a variety of professions not specifically categorized. Among specified roles, bankers represented 17.6%, followed by engineers (12.3%), HR

Table 4 Reliability analysis of the items

Scale	Cronbach's alpha	Cronbach alpha value based on standard items	Number of items
PRDS	0,907	0,910	23

Table 5 Kaiser–Meyer–Olkin and Bartlett's test of sphericity results

Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy		,921
Bartlett's test of sphericity	Approx. Chi-Square	4382,692
	df	171
	Sig	,000

specialists or managers (9%), and purchasing specialists or managers (8.4%). Additional roles included finance/accounting specialists or managers (5.9%), sales specialists or managers (5.9%), and academics (6.1%).

In Study 4, a total of 214 participants were included. The majority of participants are female, with 125 participants representing 58.4% of the sample. 88 participants are male, comprising 41.2% of the group. Only 1 participant (0.4%) did not specify their gender. 63.1% of the participants were born between 1980 and 1994, 21.6% were born in or after 1995, 13.1% were born between 1965 and 1979, 1.8% were born between 1946 and 1964. Nearly half of the participants, 48.1% hold a Master's or Ph.D. degree, indicating advanced academic qualifications. 47.2% of participants have completed a university degree. Smaller portions of participants have completed associate degrees 3.3% and high school 1.4%. The largest professional group in this study falls under the "Other" category, with 39.2%. Among specified roles, 16.8 participants working as engineers. Human resources has a notable presence, as 19.6% of the sample. A smaller proportion of participants work in finance/ accounting (4.7%), academia (4.7%), banking (7.5%), sales (2.8%), and purchasing (4.7%) roles.

During the item reduction phase of scale development, Cronbach's alpha value was calculated, and the item-to-total correlation, inter-item correlation, item variances, and item means were determined. When the reliability values of the scale were examined, Cronbach's alpha value was found to be between 0.8 and 1, indicating high reliability.

The information regarding the analysis is presented in Table 4.

When the item-to-total correlation was examined, it was seen that 4 items were below 0.5. These items were deleted, and the item-to-total correlation of the 19-item scale was reanalysed. As a result of the analysis, the item-to-total correlation was at the desired level.

EFA was implemented after the preliminary analyses. EFA is mainly used in the early stages of scale development studies to examine the factors that constitute the observed variables (Conway & Huffcutt, 2003). EFA was conducted in five stages.

1. *Checking the data for factor analysis:* In this context, Kaiser–Meyer–Olkin (KMO) and Bartlett Test of Sphericity were used.

The results are shown in Table 5.

2. *Determining the factor extraction method:* In this research, the principal axis factoring method was utilised as the factor extraction method.
3. *Determining the factor rotation method:* Varimax rotation, the most common orthogonal method, was used within the scope of this study.
4. *Determining the number of factors:* The number of factors was determined using the variance participation value. According to Tabachnick et al. (2013, p. 649) an eigenvalue of 1 or greater was generally considered significant for cases where the number of items is below 0,40 and the sample is large. Based on this assumption, three dimensions were obtained.
5. *Significance of the variables under the following factors:* To evaluate the significance of the variables under the factors, factor loadings were examined. Hair et al. (2019) stated that in a sample of 200 people, factor loading would be considered significant if it was over 0.40. Given that 275 people were reached within the scope of EFA, values over 0.40 were considered significant. Table 6 shows the rotated factor matrix table for the PRDS and the EFA results.

Results:

As a result of the EFA the distribution of the items according to the dimensions containing their full text is shown in Table 6.

Table 6 Rotated factor matrix table for the PRDS and EFA results

Items	Factor loadings	Mean	SD	Item-total correlations
Factor-1. AOC				
Item-13	,404	3,2364	1,49,895	,575
Item-14	,744	3,5927	1,23,865	,741
Item-15	,804	3,3382	1,28,089	,723
Item-16	,830	3,3673	1,33,168	,770
Item-17	,837	3,2036	1,36,510	,783
Item-18	,531	3,4945	1,27,403	,659
Item-19	,682	3,1382	1,33,284	,622
Item-20	,717	2,9164	1,31,676	,732
Item-21	,718	2,8800	1,33,050	,725
Item-23	,526	3,5636	1,26,957	,658
Factor-2. PBA				
Item-5	,765	3,1709	1,38,417	,653
Item-7	,721	3,2036	1,33,809	,759
Item-8	,687	2,9709	1,31,217	,689
Item-9	,636	3,2145	1,37,009	,645
Item-22	,448	3,3527	1,31,636	,541
Factor-3. ADTU				
Item-1	,868	3,7273	1,25,644	,560
Item-2	,819	3,2655	1,41,888	,625
Item-3	,766	3,2000	1,38,026	,635
Item-4	,874	3,6291	1,24,127	,579

N= 275

Three-dimensional structure was derived from the analyses. Upon examination of the factor loadings, it was determined that no items needed to be eliminated from the initial analysis. Consequently, it was concluded that the PRDS comprises three dimensions and 19 items. The dimensions were subsequently named based on their alignment with existing literature.

Study-3: Confirmatory Factor Analysis

In the third stage of scale development, a CFA was conducted. Following this, a reliability test of the final scale was conducted. Thereafter, an examination of convergent and divergent validity was performed. Finally, to verify criterion-related validity, the relationship between the PRD and Hecht and Allen's (2009) Boundary Management was investigated.

Participants and Procedure:

A sample size of 324 participants, who worked under a manager was utilised for the CFA. The surveys were administered through Google Forms. The demographic information for Study-3 is presented in Table 3.

CFA focuses on two points (Hinkin, 2005): (1) evaluating the factor structure derived from EFA, and (2) assessing the adequacy of the factor structure in aligning with the theoretical framework. Within the scope of CFA, Huck's (2012, p. 496–501) steps were followed:

1. *Determining and defining the model:* The factors identified through EFA and the items associated with each factor were defined. The resulting model exhibited a first-level multifactor structure. Subsequently, the model's parameters were compared to the degrees of freedom.
2. *Data collection:* A total of 324 participants were included in the CFA.
3. *Missing data analysis:* Missing data was identified post-data collection.
4. *Testing of assumptions:* Maximum Likelihood was used as the estimation method. This method is the most common method due to its comprehensive test results and interpretable outcomes (Schumacker & Beyerlein, 2000: 629–636).
5. *Evaluating the model fit:* The fit statistics of the model developed for the PRDS were assessed without any limitations or adjustments. Initially, the fit criteria were not met, but after examining the factor loadings and applying modification indices, the model fit criteria were achieved.
6. *Examining factor loadings and inter-factor relationships:* Factor loadings were examined within the scope of CFA. Standardised factor loadings are expected to be 0.5, ideally 0.7, or above (Hair et al., 2019:605). Removing items below this value is beneficial in terms of model-data compatibility. When the relationships between factors are examined, the correlation coefficient between factors should be below 0.85 (Kline, 2011). As a result of the examinations, Item 22 was found to be problematic (factor load: 0.485) and was removed from the model. The final 18-item scale and the relationships between factors were examined, and the results were satisfactory.
7. *Applying modification indices:* Model fit values can be improved by correlating the error variances of items collected under the same factor. In this study, modification indices were used to achieve this. Covariance was drawn between the high rates among the error

terms, and analyses were redone based on the generated covariances. The desired result was obtained.

Results:

After following the CFA steps, the standardised factor loadings and model fit indices of the final revised model are shown in Table 7.

The path diagram resulting from the analyses conducted in the AMOS program is depicted in Fig. 2.

Reliability Test:

To assess the internal consistency reliability of the PRDS, Cronbach's Alpha, the most widely accepted measure, was calculated (Price & Mueller, 1986).

The findings obtained from the analyses are presented in Table 8, and they are at the desired level.

Convergent and Discriminant Validity:

Although the process of scale development aims to establish construct validity, convergent and divergent validity provide further evidence of construct validity. Convergent validity indicates that the items related to each variable are correlated with one another and with the factor they form. Discriminant validity, on the other hand, requires that items related to a variable have a lower correlation with factors other than their own (Hinkin, 2005). For convergent validity, CR (Composite Reliability) and AVE (Average Variance Extracted) values were analyzed, while for discriminant validity,

Table 7 PRDS standardised regression weights and model fit indices

Item number-factor name	Factor loadings
Item-1-ADTU	,936
Item-2-ADTU	,803
Item-3-ADTU	,760
Item-4-PBA	,945
Item-8-PBA	,806
Item-7-PBA	,888
Item-5-PBA	,777
Item-9-PBA	,776
Item-13-AOC	,821
Item-14-AOC	,854
Item-15-AOC	,815
Item-16-AOC	,872
Item-17-AOC	,859
Item-18-AOC	,701
Item-19-AOC	,719
Item-20-AOC	,747
Item-21-AOC	,741
Item-23-AOC	,869

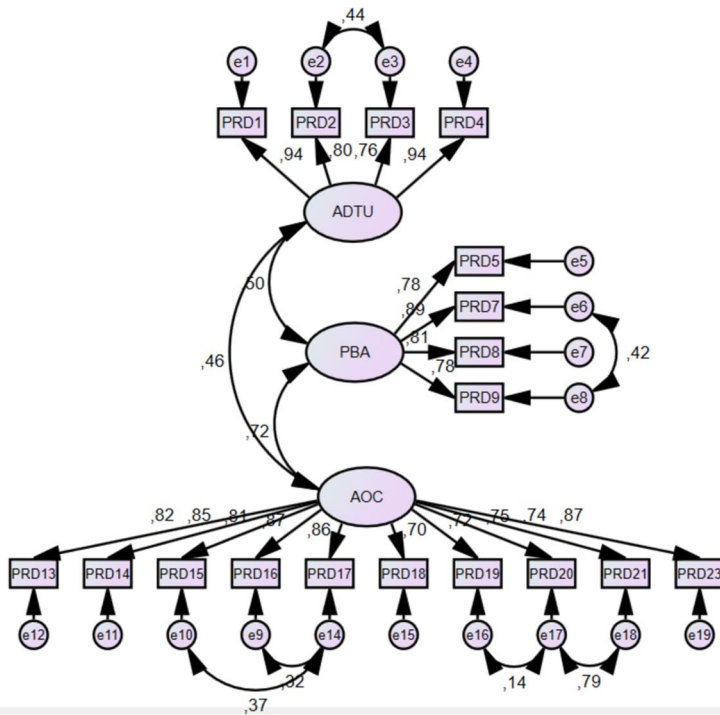


Fig. 2 PRDS CFA model

Table 8 Cronbach's alpha reliability statistics of the PRDS

Scale-dimension	Cronbach's alpha	Number of items
PRDS-ADTU	,926	4
PRDS-PBA	,877	4
PRDS-AOC	,949	10
PRDS-All dimensions	,948	18

Table 9 Convergent and discriminant validity values for the PRDS

	CR	AVE	MSV	ASV
ADTU	,922	,748	,246	,151
PBA	,886	,661	,514	,253
AOC	,947	,644	,514	,241

MSV (Maximum Shared Variance) and ASV (Average Shared Variance) values were assessed. The AVE value for convergent validity should be 0.5 or higher. Additionally, CR values for the scale should exceed the AVE values. To establish discriminant validity, the following conditions should be met: $MSV < AVE$; $ASV < MSV$, and the square root of the AVE should be greater than the inter-factor correlations (Hair et al. 2019;

Yaslioglu, 2017). The findings obtained as a result of the analyses were at the desired level and are summarised in Table 9.

Criterion-Related Validity:

Criterion validity compares test results with actual outcomes, typically by establishing a correlation between one assessment's results and another's (McKim, 2022). Criterion validity is divided into two subcategories (Fink, 2010): predictive validity and concurrent validity. In this study, concurrent validity was examined as a measure of criterion validity. Concurrent validity demonstrates the alignment between two assessments or the favorable comparison of a newly developed scale with an already validated one. For instance, to establish concurrent validity, a researcher might administer both the new and validated assessments to the same group of participants and compare the responses (Fink, 2010).

In order to construct a nomological network and substantiate the scale's validity, it is essential to examine the relationships between the newly developed construct and other theoretically associated variables (Cronbach & Meehl, 1955). Within this framework, the perceived right to disconnect scale was determined to share a conceptual structure with Hecht and Allen's (2009) Boundary Management Scale. During the confirmatory factor analysis phase of the scale's development, the PRDS was administered alongside the boundary management scale, which focuses on the management of boundaries outside of work hours. Examination of the interrelationship between these two scales revealed a positive and significant correlation ($r=0.490$, $p<0.001$), as shown in Table 10.

Study-4: Model Test

In the fourth phase of the scale development study, the final scale was subjected to criterion-related validity testing using a model. This involved reapplying the scale to a different sample with varying variables. Study 4 was conducted to develop a prediction regarding the outcomes of the scale.

Participants and Procedure:

Based on the existing theoretical framework, the mediating role of WFC in the relationship between PRD and EB was investigated. The hypotheses and relationships between variables developed within the model are presented below.

Table 10 Correlation values between the perceived right to disconnect scale and the boundary management scale

		MEAN_PRDS	MEAN_BMS
MEAN_PRDS	Pearson Correlation	-	,490**
	Sig. (2-tailed)	-	,000
	N	-	324
MEAN_BMS	Pearson Correlation	,490**	-
	Sig. (2-tailed)	,000	-
	N	324	-

Right to Disconnect and Work Family Conflict

Research has shown that implementing the right to disconnect has positive effects on employees' health, well-being, work-life balance, productivity, and job satisfaction (Weber, 2021; Park & Kwon, 2020). This right enables employees to disengage from work-related communication outside of working hours. In the digital age, where constant connectivity can lead to burnout and stress, the right to disconnect offers significant advantages for maintaining a healthy work-life balance and mental well-being (Bokor-Szőcs, 2023; Urbane, 2022). As technology facilitates constant accessibility, after-hours work increases stress, which subsequently contributes to higher levels of WFC (Giunchi et al., 2023). Employees often feel compelled to remain available outside working hours, creating a culture of "always-on" readiness that intensifies WFC (Bergen & Bressler, 2019). The right to disconnect, therefore, represents a legal framework designed to reduce WFC by allowing employees to disconnect from work-related communication during non-working hours (Antunes et al., 2023; Avogaro, 2018). Based on these assumptions:

H1: The perception of not having the right to disconnect increases WFC.

Right to Disconnect and Emotional Burnout

Constant accessibility and being perpetually online can lead to feelings of fatigue, excessive workload, and burnout (Malik et al., 2021). The perception of not having the right to disconnect is particularly significant in high-stress sectors such as education and public service, where it may substantially contribute to EB. This perception often increases the demands of emotional labour and the obligation to be continuously available, which can deplete an employee's emotional resources and trigger EB (Cuadrado et al., 2022; Davis & Stazyk, 2022; Wołowska, 2019). Golding's (2023) study found that the expectation to remain connected outside of working hours drives employees toward burnout, reduces performance, and leads higher turnover (Golding, 2023). Based on these assumptions:

H2: The perception of not having the right to disconnect increases EB.

Mediator Effect of Work Family Conflict on Right to Disconnect and Emotional Burnout Relationship

Bergen and Bressler (2019) emphasized that promoting more employee-friendly work arrangements at both organizational and national levels is essential to achieving work-life balance and mitigating WFC. The nature of work has fundamentally shifted with the pervasive use of smartphones and laptops, introducing new complexities to work-life boundaries. Park et al. (2011) argue that this evolution has led to an expectation of perpetual connectivity or being "always online." Consequently, employees often carry work-related tasks and communications into their personal spaces, even during designated rest periods, thereby blurring the boundaries between professional and family life (Park et al., 2011). Such breaches of work-life boundaries contribute to WFC, which subsequently fosters EB (Carvalho et al., 2021). Baek et al. (2023) also found that long work hours and overtime contribute to burnout through the mediating effect of WFC. Based on these assumptions:

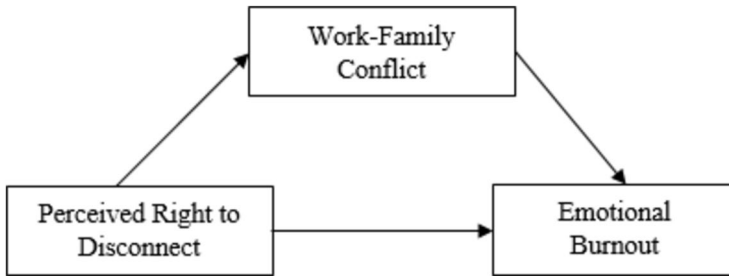


Fig. 3 Research model

H3: The perception of not having the right to disconnect increases EB through the mediating effect of WFC.

The structural equation model, which was based on data from 214 participants who work under a superior manager, was used to test the research model, as depicted in Fig. 3.

The demographic information of the participants is summarised in Table 3.

Measures:

To measure WFC, the work-family and family-work conflict scale developed by Netemeyer et al. (1996) was used. This scale comprises 10 items, with 5 questions in the WFC dimension and 5 questions in the family-work conflict dimension. For the purpose of this study, which focused on the blurring of working hours, only five questions from the WFC dimension were considered.

Maslach and Jackson, (1981)'s burnout scale was used to measure EB. This scale consists of three dimensions: EB, cynicism, and personal success, with a total of 22 items. EB was scaled with 9 items, personal success with 8 items, and cynicism with 5 items. Given the relevance of the EB dimension to the subject matter, it was the sole focus of this investigation.

Data Analysis and Results:

To assess the mediation effect, the study of Baron and Kenny (1986) served as the foundation, and the SPSS and AMOS programs were utilised for analysis. In this regard, firstly, the impact of PRD on EB was investigated. Subsequently, the effect of PRD on WFC was examined. Finally, when WFC was included in the analysis, it was determined whether the effect of PRD on EB was significant or not.

The results of the analysis are presented in Table 11.

As demonstrated in Table 11, PRD significantly affects EB and WFC. Furthermore, WFC significantly affects EB. Finally, the effect of PRD on EB disappeared by including the mediating variable WFC into the model. Findings show that the β value in the relationship between PRD and EB decreased from 0.403 to 0.151 and the P value turned from significant to non-significant. This shows that WFC has a mediating effect between PRD and EB.

The SEM analyses supported hypotheses H1, H2, and H3. Findings indicate that employees who perceive a lack of the right to disconnect experience higher levels of EB

Table 11 The results of the mediation analysis

Path		Path value				P	Result		
		Standardised β							
Independent variable	Dependent variable	SEM-1	SEM-2	SEM-3	SEM-4				
PRD	EB	.403***				0.000	Significant		
PRD	WFC		.562***				0.000	Significant	
WFC	EB			.546***				0.000	Significant
Direct effects									
PRD	EB				0.151	0.077	Not Significant and β value decreased		
PRD	WFC				0.567***	0.000	Significant		
WFC	EB				0.460***	0.000	Significant		
Indirect effects									
PRD	EB				0.261**	0.002	Significant		
Total effects									
PRD	EB				0.411**	0.010	Significant		
PRD	WFC				0.567*	0.012	Significant		
WFC	EB				0.460**	0.005	Significant		

Fit Indices: $\chi^2=987,716$ $df=420$ $\chi^2/df=2.352$, CFI=0.923, NFI=0.873, TLI=0.914, RMSEA=0.080.

***: $p < 0.001$, **: $p < 0.01$, *: $p < 0.05$

and increased WFC. Additionally, employees who perceive a lack of the right to disconnect experience increased EB through the mediating effect of WFC.

Discussion

Due to the growing reliance on digital tools in work, the boundaries of work and non-work life are becoming increasingly blurred. At this point, it has become essential to establish practices that safeguard the boundaries between these two realms. One such application is the Right to Disconnect, which ensures that individuals are free from work-related obligations during non-working hours without fear of reprisal (Secunda, 2019). The PRDS aims to measure the perceptions of employees concerning the scenario of being inaccessible due to the use of digital technology after hours. This perception may negatively impact an employee's physical and mental health, productivity, work-life balance, and efficiency. The PRDS differs from other scales by focusing on legally grounded protections for employees' personal time outside of work, particularly in the digital age. Unlike other scales that often measure personal preferences or internal motivations related to work-life boundaries, this scale addresses structural and regulatory protections designed to safeguard employees' personal time. This scale emphasizes external, legally mandated boundaries rather than individual choices, highlighting its role as a preventive measure to reduce work-related stress and enhance well-being by enforcing clear separations between work and personal life. Thus, the present study aimed to develop a Right to Disconnect scale to assess employees'

perception of this right and evaluate its relationship with several variables. The dearth of a scale measuring the Right to Disconnect in the literature made this study unique and filled an important gap. The study's findings confirmed the scale's validity and reliability. It is anticipated that the presented scale will be widely utilised in future research.

The analysis of the data revealed that the PRDS comprised three dimensions: AOC, PBA, and ADTU. Further details about each dimension are presented below.

AOC: The widespread adoption of technology and the demand for prompt responses have given rise to AOC. With the development of communication technologies, changes have emerged in when and how work is carried out. The blurring of working hours along with the changes has necessitated the emergence of policies and practices that will help manage businesses digitally (McDowall & Kinman, 2017). According to the Belkin et al. (2016), employees spend an average of eight hours per week responding to work-related emails after hours. According to the American Psychological Association, 30% of men and 23% of women regularly brought work home. Similar percentages were also valid for working on holidays (Kitchen, 2018).

PBA: Employees are under pressure to be accessible at all times due to the negative attitude of the employer/manager, concerns about not piling up work, and similar reasons. Constantly reaching employees for work-related purposes after hours or the employee's anxiety that they can be reached at any time causes the employee not to be able to exercise his/her right to rest effectively and in a quality manner. This can result in psychosocial problems that can affect the employee's work output, productivity, and efficiency, ultimately harming the employer as well (BAIC Law, 2023). Michael Page's research in Turkey found that professional life interferes with personal life of employees, with two main reasons for working after hours: sense of responsibility and sense of obligation. In the context of Turkey, the sense of obligation was found to be higher than in other countries. Employees who are not at executive level are especially accessible due to their sense of obligation (Michael Page, 2018).

ADTU: The advancements in information and communication technologies have paved the way for the production and dissemination of information. As a result, people have come to expect rapid access and utilisation of information. Consequently, the use of digital tools after hours has become commonplace. According to Michael Page's research in Turkey, the boundaries between work and leisure were blurred, and after hours digital tool usage was prevalent. Three out of every four professionals in Turkey used at least one work-related connected device beyond regular work hours. This has led to employees using their personal devices for business purposes, even if they do not have a company-issued device (Michael Page, 2018).

Overall, the developed scale was tested using the model designed through the mediating effect of WFC on the effect of PRD on EB. The results showed that PRD causes EB through WFC. The findings from the model test are consistent with the results of similar studies conducted in recent years. Wang et al. (2024)'s research revealed that WFC mediates the relationship between workload and job burnout (Wang et al., 2024). Yuan et al. (2023) studied 2,172 female nurses in China, showing that WFC and anxiety symptoms mediated the relationship between work-related stress and job burnout (Yuan et al., 2023). Okereke et al.'s (2023) research revealed that high job stress experienced by construction workers affects WFC, and this situation brings work-related burnout (Okereke et al., 2023). Zhu et al. (2024) demonstrated that after hours work-contact behavior affects burnout through WFC.

Implications

The scale developed to assess employees' perceptions of their accessibility after work is intended to serve as a guide for employers, managers, policymakers, and academics. This scale can also be used to examine the effects of employees' perceptions of accessibility after work on their non-work lives. By using this scale, preventive and remedial intervention programs can be developed to mitigate negative situations in the workplace caused by employees' perceptions of being accessible or not after hours.

Implications that can be done in the context of scale dimensions can be discussed as follows. Individuals who refrain from constantly checking their phones and instead limit their technology use may experience reduced WFC. Furthermore, these individuals often report lower levels of stress at work. By setting boundaries in their personal interactions and technology use, they are able to avoid the negative effects of AOC (Director, 2020). Various applications have been developed to address this issue. For example, Google Calendar's "Work Hours" feature automatically declines meetings or calls outside of specified time periods, while Apple's Do Not Disturb mode silences notifications for a specified period of time. These and other similar tools can help employees establish boundaries between their work and personal lives and improve their overall well-being (Kitchen, 2018). The widespread use of applications to cut off communication after hours and the adoption of a culture of not being ready for work after hours will be beneficial for the psychological and physical health of employees.

One of the biggest reasons for PBA, which is another dimension of the scale, is that time is considered a scarce resource, and companies need to take action quickly. In contrast to this way of working created by a high-speed society, the concept of slow work has emerged. Although the mention of slow work may bring to mind laziness or less capable individuals in the earlier stages of their careers, research indicates that a more productive working environment results (Messenger, 2011; Skidelsky & Skidelsky, 2012). By slowing down the work process, work is carried out more carefully and concentratedly, without experiencing time pressure or hassle. As concentration and creativity increase, general stress levels decrease and productivity increases (Gerlach, 2018). An increasing number of organisations are realising and implementing the benefits of slow working systems (Pansu, 2018). Furthermore, companies are shifting towards four-day working systems. Businesses that adopt this system, experience a 24% improvement in employees' work-life balance, and employees accomplish the same amount of work in a shorter time frame (Medium, 2019). It is recommended that companies reconsider the benefits and drawbacks of fast or long-hours work.

The Myers-Briggs Company recommends three fundamental principles to individuals and organisations to prevent the negative consequences of ADTU. First, individuals ought to discover ways to refrain from receiving work-related notifications, social media, and technology. Second, it is crucial to establish boundaries for technology usage. Lastly, individuals should set limits on their communication with others and declare their availability. Similarly, organisations must create a workplace culture that allows employees to disconnect from work during their free time. It is essential to establish clear guidelines for technology usage during work and after hours. Finally, leaders must serve as role models for employees by demonstrating the importance of taking time off. According to The Myers Briggs Company (2019), implementing these recommendations can lead to the establishment of legal frameworks, such as the Right to Disconnect, which set boundaries for digital tool usage after hours. Consequently, this is expected to reduce the use of digital tools after hours.

Conclusion

In this study, a novel scale PRDS was developed to assess the blurred boundaries between work and non-work life. A four-stage study was conducted in this context. The results of the study revealed that the PRDS is valid and reliable. Subsequently, the scale was subjected to a model test, which demonstrated that the PRD has an impact on EB through WFC. It is crucial to acknowledge certain limitations when interpreting the outcomes of this study. First, the cross-sectional nature of the research design precludes the establishment of causality. Consequently, future studies should consider employing either cross-sectional or longitudinal designs. Second, the data were collected solely from Turkey. Given that the Right to Disconnect is a topic of global interest, future research could gather data from diverse cultural contexts and compare the results.

Appendix. Survey Items

Always on Culture

1. I receive calls on my personal phone for work after hours.
2. I am expected to be accessible after hours.
3. I am expected to be accessible during my annual leaves.
4. I am expected to be accessible on the weekends.
5. I am expected to be accessible on public holidays.
6. My employer/manager contacts me regarding work after hours.
7. There is a culture in my workplace that requires employees to be accessible at all times.
8. Company culture requires me to use digital tools during annual leaves.
9. Company culture requires me to use digital tools on public holidays.
10. I am not expected to be accessible after hours.

Pressure to be Accessible

11. I feel pressure to answer work-related emails, messages or calls after hours.
12. I feel obliged to stay in constant communication about work after hours because of the digital tools.
13. I constantly feel pressure to miss something related to work after hours because of the digital tools.
14. When I work remotely at any time, I feel pressured to be accessible after hours.

After Hours Digital Tool Use

15. I use my digital tools to work after hours.
16. I use my digital tools to work on public holidays.
17. I use my digital tools to work during my annual leaves.
18. I use my digital tools to work on weekends.

Authors Contribution Ayse Merve Urfa Yilmaz: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing.

Nazli Yuceol: Conceptualization, Formal analysis, Investigation, Project administration, Writing – original draft, Writing – review & editing, Visualization.

Esin Can: Project administration, Supervision, Writing – review & editing.

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Data Availability The identity of individuals from whom the data were obtained was kept strictly confidential. All respondents agreed to complete the study but did not agree for their data to be shared publicly, so supporting data is not available.

Declarations

Ethical Approval Approval of the Ethics Committee was received from Yildiz Technical University Social and Humanities Research Ethics Committee on 19.07.2022 with Meeting Number 2022.07.

Conflicts of Interests/Competing Interests All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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