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Effects of Bring Your Own Device (BYOD) Attributes on Work-to-life Conflict

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ABSTRACT

The rapid adoption of smartphones and tablets among employees has recently forced organizations to proactively embrace bring your own device (BYOD). The situation of COVID-19 makes the concept of BYOD even paramount. Allowing employees to bring their own mobile devices to the workplace has helped companies realize productivity gains and cost benefits. However, BYOD has also blurred the boundaries between work and personal life, thereby creating a stressful environment for employees (Doargajudbur and Hosanoo, 2023). This study explores the relationships between several BYOD attributes and investigates the effects of these attributes on work-to-life conflict. It contributes by introducing workplace connectivity after hours as a new dimension of BYOD attribute to influence work-to-life conflict. Based on boundary theory, a theoretical model is developed and tested with an online survey. The results reveal that flexibility and workplace connectivity after hours positively influence productivity, and flexibility helps to relieve instead of increase work overload. Meanwhile, a higher level of flexibility and productivity can help reduce work-to-life conflict, and a higher level of work overload induces a higher level of work-to-life conflict.

Keywords: Bring Your Own Device (BYOD), Work-to-life Conflict, Workplace Connectivity

Ⅰ. Introduction

Being "*the most radical change to the economics and the culture of client computing in business in decades*" (Gartner, 2013), bring your own device (BYOD) has become an inevitable trend and widely recognized policy among organizations nowadays. BYOD allows employees to bring their own mobile electronic communication devices to their workplaces and use such devices either in place or in addition to their work PCs, phones, tablets, and/or smartphones. According to statistics, the global BYOD market was $366.95 billion in 2022 and is expected to expand at a CAGR of 12.41% and reach $715.62 billion by 2027 (360 Market Updates, 2022). This significant increase is due to the widespread

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adoption of portable devices, effective enterprise mobility solutions, and more advanced BYOD related technologies (i.e., AI and IoTs) that enable and encourage employees to work at anytime and anywhere (Grover, 2023). Statistics also shown that 67% of employees are using their personal devices at work, and 87% of businesses are dependent on their employee's ability to access mobile business apps from their smartphone (Deyan, 2020). These facts show that BYOD is gaining momentum at the workplace. What is more, the concept of BYOD renewed its significance and becomes the new normal during COVID-19 pandemic period, where employees have to work from home using their personal devices. This has made workplace home and home workplace. Meanwhile, BYOD has been shifted from a voluntary behavior to a necessity for working practice, and some companies even made their decisions to allow employees to work "forever" from home (McLean, 2020).

Adopting BYOD presents benefits and problems for both employers and employees. For instance, corporate managers welcome BYOD because of its positive effects on employee satisfaction, workforce productivity, attraction of tech-savvy talents, and initial investments on mobile devices (Niehaves et al., 2012). Meanwhile, employees find BYOD valuable because bringing one's devices to the workplace is generally associated with a "greater freedom" and autonomy (Dell and Intel, 2011), ease of adoption, enjoyment and improved moral (Niehaves et al., 2012), flexibility of working hours (Coenen and Kok, 2014), and higher level of familiarity (Kinzer, 2022). Moreover, with BYOD, employees can easily access company resources, such as email, databases, enterprise systems/applications, and enterprise social networking sites, regardless of time and location. However, despite these benefits, many researchers have underscored some drawbacks of BYOD. Specifically, BYOD may pose various risks to employers, including security issues, support complexity, loss of process control, and performance concerns (Yang et al., 2019), while for employees, accepting BYOD may suggest that they implicitly accept the trade-offs of work-life balance and agree to working off-hours often (Fleck et al., 2015). In other words, BYOD blurs the work-life boundary of employees and suggests that these people should always be available whenever they are asked to report to work.

BYOD is part of the consumerization of IT (Köffer et al., 2015), where innovation is transformed via top-down (where enterprises make the IT decisions) and bottom-up approaches (where internal employees make the decisions) (Nan, 2011). Given that the "bottom" side initiates BYOD, we focus on the psychological status of internal employees, especially their attitudes toward work-to-life conflict when practicing BYOD.

In the BYOD context, organizations use mobile devices as exciting, inexpensive weapons to bridge the work/home divide and to converge the work of their employees with their personal lives. Work-to-life conflict occurs when employees fail to adapt themselves to this change brought upon by their mobile device usage or when they are stuck in the "compartmentalized" category (Sarker et al., 2012). Work-to-life conflict is said to be the main inhibitor in BYOD participation (Ostermann and Wiewiorra, 2016). It is a form of inter-role conflict where the role demands of one domain interfere with meeting the role demands of another domain (Greenhaus and Beutell, 1985). Similar with previous studies (e.g., Yang et al., 2022; Yun et al., 2012), we focus on how work demands may interfere with the personal lives of employees during their non-working hours. The general work-to-family conflict literature predicts such conflict by using a few independent varia-

bles, including work overload, job autonomy, schedule flexibility, and job involvement. However, the antecedents of work-to-life conflict have not been extensively explored in the mobile technology usage literature, especially in those studies that focus on the usage of this technology in the workplace. Yun et al. (2012) studied the impact of Office-Home smartphone attributes (i.e., flexibility, autonomy, work overload, and productivity) on work-to-life conflict. Their work is among the first to examine the unique attributes of mobile device usage at the workplace. Similarly, Cousins and Robey (2015) found five affordances that mobile workers use in managing work-life boundaries: mobility, connectedness, interoperability, identifiability and personalization. These findings are inconclusive and focus on general mobile technology use. In this study, we specifically focus on BYOD instead of Office- Home smartphone attributes in general because we believe that the mobile devices owned by employees can better depict the work-to-life conflict when these employees use these same devices for work purposes at home. We also borrow the concept of "workplace connectivity" and employ it as a new dimension of BYOD attributes.

Given that previous studies have produced somewhat inconclusive findings regarding the impact of mobile devices on work-to-life conflict, especially the impact of BYOD attributes on work-to-life conflict, we aim to address the following research questions: (1) what are the unique attributes of BYOD usage; (2) what are the relationships between different BYOD attributes; and (3) do these attributes affect the work-to-life conflict of employees? To support our theoretical discussion, we review the literature on work-to-life conflict and BYOD attributes and then introduce the theoretical foundation (boundary theory or work-family border theory) of our research. Afterward, we propose several research hypotheses, build our research model based on the results of the literature review and our theoretical foundations, explain our research methodology, and discuss the results of the data analysis. We conclude our paper by citing the implications of our findings to both theory and practice.

Ⅱ. Literature Review

2.1. Work-to-life Conflict and its Antecedents

Work-to-life conflict suggests that the expectations of the employing organization and family/personal life are "mutually incompatible" (Greenhaus and Beutell, 1985). Contemporary research on work-to-life conflict takes a bidirectional approach by focusing on the effects of life on work and those of work on life (Kirby et al., 2006). Some researchers adopted a holistic view and employed both of these components in their research (e.g., Yang et al., 2022), while others only focus on how work may influence personal life. This study follows the second approach, and defines work-to-life conflict as an inter-role conflict where the demands created by a job interfere with one's performance of his/her family-related responsibilities (Netemeyer et al., 2004).

Work-to-life conflict has attracted much research attention because of its potential to generate significant organizational outcomes, such as those relating to the job satisfaction and performance of employees (Chen and Karahanna, 2018; Wright et al., 2014). Researchers in organizational sciences, communication, family relations, and applied psychology have extensively studied the antecedents of work-to-life conflict. Among the first to comprehensively analyze these antecedents were Kirby et al. (2006), who divided work-to-life conflict into work-related factors, life-re-

lated factors, and personal characteristics. In work-related factors, researchers have focused on issues related to workload, working hours and flexibility, autonomy and task challenge, and relationship of individuals with their working environment (Boles et al., 2001). In this study, we focus on work-related factors and try to use personal characteristics, to explain our findings. Some other studies that explored the antecedents of work-to-life conflict in the category of work-related factors include Doargajudhur and Hosanoo (2023) found that work overload significantly and positively influences work-family conflict, and Hill et al. (2010) revealed that perceived schedule flexibility is related to less work-life conflict across different cultures.

As another antecedent of work-to-life conflict, connectivity behaviour after hours has also drawn researchers' attention. For instance, in the early work, based on conservations of resources theory, Richardson and Thompson (2012) built a theoretical model to investigate how work connectivity influences the interference of one's work with his/her role in the family. Their findings confirmed the significant direct and indirect effects of work connectivity behavior after hours on work-to-life conflict. Inspired by Richardson and Thompson (2012), Wright et al. (2014) reemphasized the importance of introducing the "connectivity" concept to the research framework on work-to-life conflict. Recently, Yang et al. (2022), Tennakoon (2018), and Chen and Casterella (2019) also directly studied the relationship between connectivity behaviour after hours and work-to-life conflict/balance. In summary, all these work focused on the work-life conflict that arises from the use of communication technologies in general and emphasized the usage of such technologies outside regular working hours.

Though prior research have emphasized different antecedents of work-to-life conflict, few studies have explored the antecedents of work-to-life conflict under BYOD context. Taking BYOD as a research background is especially meaningful after Covid-19 pandemic, as organizations are not only using personal devices as a tool to connect the professional lives to personal lives, but also as a necessity to keep employees continue working when they are not possible to go to the workplace (Doargajudhur and Hosanoo, 2023).

2.2. BYOD Attributes

2.2.1. Connectivity

Mobile device use creates constant connectivity of employees. "Workplace connectivity" was formally introduced to research by Richardson and Benbunan-Fich (2011) who focused on work connectivity behavior after hours (WCBA). WCBA refers to an organization member's use of portable wireless devices (laptops or handheld devices) to perform their work or communicate with their colleagues outside their working hours (e.g., mornings before going to work, evenings after finishing work, weekends, or vacations). Studying WCBA is relevant in this research because such behavior is associated with both BYOD and work-to-life conflict. In recent years, WCBA has gained traction as an important area of management research due to its potential to influence employee well-being both positively and negatively (Yao et al., 2023). For example, researchers like Richardson and Thompson (2012) have investigated the direct and indirect relationship between WCBA (duration and frequency) and work-to-life conflict. Yao et al. (2023) discussed how work connectivity behaviour increases procrastination at work in the post-pandemic context. Except studies like Doargajudhur and Hosanoo

(2023), little attention has been paid to WCBA in the BYOD literature. In this research, we adopt WCBA as an important new dimension under the BYOD context to predict work-to-life conflict.

2.2.2. Flexibility, Productivity, and Work Overload

Flexibility, productivity, and work overload have been identified by Yun et al. (2012) as important Office-Home smartphone attributes. Although autonomy is also relevant, Yun et al. found a high level of similarity between autonomy (focusing more on the content of work) and flexibility (focusing more on the location and time of work) and therefore combined these two one. As there is basically no other research discussing about the office-home smartphone attributes or BYOD attributes in particular, in this study, we follow Yun et al. (2012)'s framework, and include these three important work-related attributes in our study.

With the decreasing cost of telecommunication technologies and the increasing cost of office space, many organizations have begun to provide job flexibility to their employees. Flexibility is among the natural attributes of mobile device usage and BYOD in particular because creating a flexible working arrangement is the initial and ultimate goal of using personal mobile devices. Hill et al. (2001) and Yun et al. (2012) divided flexibility into flextime and flexplace, where flextime refers to "the ability to rearrange one's working hours within certain guidelines offered by the organization" (p. 50) while flexplace refers to "giving employees varying degree of control over where their work is done" (p. 51). Both flextime and flexplace are relevant in this research because by using personal mobile devices, employees have the convenience and are expected to work anytime and anyplace as requested. Therefore, our work is in line with the above researchers and define job flexibility as the flexibility in both work timing and location.

This research investigates how the use of modern information technologies can influence the productivity of employees. Productivity is considered as one of the major outcomes of using mobile technologies at the workplace or BYOD in particular. Niehaves et al. (2012) and Rege (2011), claimed that BYOD can increase the morale and satisfaction of employees and consequently boost their productivity. In addition, Gökçe and Dogerlioglu (2019) believed that empolyees in the workplace become much happier when they use their own devices they like and know, thus increase the efficiency and productivity. Therefore, productivity plays an indispensable role when exploring BYOD attributes in this work.

The last attribute, work overload, has also been studied frequently by researchers in different domains. For instance, Bateman (1981) defined work overload as giving people "too much to do." Previous studies have assumed that energy and attention are limited to every person and that people may be exhausted when their limited resources are diminished as a result of performing their responsibilities at work and in their personal lives. In the context of information technology usage, Ayyagari et al. (2011) proposed the concept of presenteeism which refers to the degree to which information and communication technologies allow users to be reachable. This means work overload can happen anytime when using information and communication technologies. When examining the negative effects of BYOD on employees, Doargajudhur and Dell (2020) used an empirical study to prove that BYOD increased the perceived workload of employees. Through BYOD, managers realize that their employees can work

off-hours and are therefore likely to give them tasks to work on during these times.

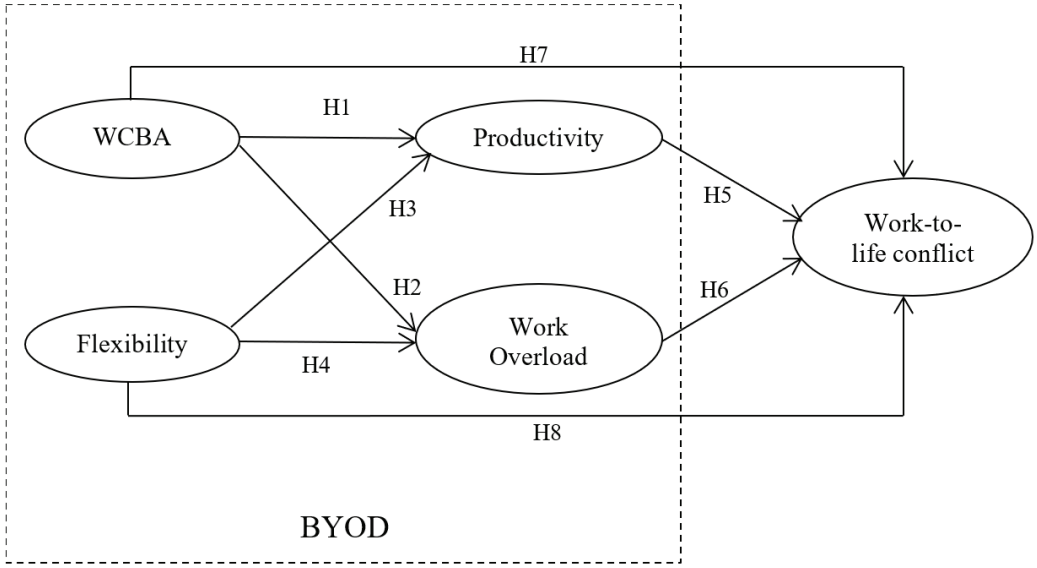
Based on the above discussions on work-to-life conflict and BYOD attributes, this study identifies most of the work-related and influential factors cited in the literature as antecedents of work-to-life conflict, especially the unique feature of "workplace connectivity." In addition, given that BYOD emphasizes the usage of personal mobile devices for work purposes, this concept presents a better research context compared with communication technology or Office-Home Smartphone to reflect the vibrant perceptions toward work-to-life conflict after working hours. In addition, very few studies have explored specific BYOD attributes and their relationships. Some studies have even produced controversial or inconsistent results with regard to the relationships among BYOD attributes as well as between these attributes and work-to-life conflict (e.g., Hill, 2010). To clarify the ambiguity in the literature, this work develops a holistic research framework based on boundary theory or work-family border theory to explore the BYOD attributes and their relationships with work-to-life conflict.

Ⅲ. Theoretical Foundation

To lend theoretical support to our hypotheses development, this study is grounded on boundary theory (Hall and Richter, 1988; Nippert-Eng, 1996) or work-family border theory (Clark, 2000). Introduced by Nippert-Eng (1996) in the context of work/personal life interface, boundary theory posits that individuals manage the boundaries between their work and personal lives by segmenting and/or integrating the relevant domains. Individuals take the initiative to shape their boundaries. Strong boundaries are constructed to maintain work and family as separate domains, whereas weak boundaries are constructed to facilitate the ease of interaction between these domains (Clark, 2000). Both of the aforementioned theories also characterize the strength of this boundary based on permeability and flexibility. Boundary permeability suggests that the elements from one domain are readily found in another domain, that is, this type of permeability relates to being physically located in one domain yet behaviorally responding to another domain (Clark, 2000). Permeability can be conceptualized as the actual interruptions or intrusions from one domain into another, over which the employee may have minimal control. A good example of permeability could be when an employee is contacted by his/her work colleagues while s/he is at home. Mobile technologies can also change the traditional spatial and temporal boundaries between work and life, thereby resulting in highly permeable boundaries wherein employees complete their work during their personal time and fulfill their life responsibilities online during their working hours (Dery and MacCormick, 2012). Given this permeable/blurred boundary, the use of mobile technologies after working hours is likely to be associated with work-to-life conflict, which is the central focus of this study. In the following hypotheses development, we discuss how to use boundary theory, especially the concept of permeability to explain the relationship between BYOD attributes and work-to-life conflict.

Ⅳ. Research Model and Hypotheses Development

Based on the literature review and theoretical foundations, we develop a new research framework for studying BYOD attributes and their relationships



Note: WCBA=Work Connectivity Behavior After-hours

<Figure 1> Research Model

with work-to-life conflict. <Figure 1> shows our research model.

As shown in <Figure 1>, we use five constructs and develop eight hypotheses. WCBA, flexibility, productivity, and work overload are identified as the four attributes of mobile device usage in the BYOD context, while work-to-life conflict is treated as the dependent variable. We believe that BYOD attributes show some relationships with work-to-life conflict. To support such argument, we propose eight hypotheses as follows.

With the increasing utilization of mobile devices at the workplace, people have become addicted and accustomed to "being connected" through their personal mobile devices. WCBA refers to individuals' use of portable mobile devices to perform their work or to communicate with their colleagues outside of their working hours. The original purpose of mobile devices is to facilitate communication across time and geographic boundaries, thereby increasing the productivity of workers by removing temporal and spatial barriers (Lyytinen and Yoo, 2002). Previous studies show that being connected to the workplace after working hours gives employees a sense of control and safety in order for them to freely arrange their work schedules and increase their productivity (Rege, 2011). Moreover, constant connectivity can benefit career-oriented individuals, managers who need to travel frequently from their usual workplaces, and freestyle workers who prefer a high degree of job flexibility. The connectivity enjoyed by employees through their use of personal mobile devices outside of their working hours also brings satisfaction and increases thriving at work (Yang et al., 2022). In the BYOD context, Doargajudhur and Dell (2020) showed that BYOD has a significant indirect impact on job performance as the "always on" employees who are expected to accomplish more even after their workplace operations have been finished for the day. Therefore, we propose

H1: WCBA due to BYOD is positively related to employee productivity.

Evidence shows that using communication technologies outside working hours may increase the stress level of employees (Ayyagari et al., 2011). This is especially true with the BYOD context, where employees feel more convenient to use their own devices for working purposes (Doargajudhur and Dell, 2020). Other supported arguments include: Ayyagari et al. (2011) identified work overload and role ambiguity as stressors resulting from the excessive use of communication technologies. They argued that the constant connectivity offered increases the workload of employees by increasing both the work flow speed and expectations of productivity. Accordingly, employees must work under time pressure and strict deadlines, which are also considered sources of work overload. Similarly, Fonner and Roloff (2012) mentioned that the enhanced levels of communication (mobile devices in particular) impedes teleworkers from focusing on their work because they need to stay connected and be responsive and communicative regardless of time and place. Given the constraints on their ability or resources to respond to their work demands, employees will perceive a higher pressure and workload as the demand for their around-the-clock response increases.

Based on boundary theory, role stress may occur when an individual is given more roles than s/he can handle or when s/he is facing contradicting requirements from different aspects of his/her role or from different people with whom s/he interacts (Kahn et al., 1964). People simultaneously fulfill both their work and family roles when they are working outside of their regular working hours; meanwhile, organizations have no clear rules or expectations on how many hours their employees must work by using their personal mobile devices (Stephens et al., 2012). With such confusion in mind, employees are usually exposed to too many requirements from their different roles and become overwhelmed. In line with these arguments, we propose the following:

H2: WCBA due to BYOD is positively related to work overload.

The time and location flexibility resulting from the use of personal mobile devices provides employees with some degree of freedom to freely allocate their time to complete their tasks. As one of its major advantages, BYOD gives employees flexibility and autonomy both in and outside of their working hours (Niehaves et al., 2012). Flexibility has two characteristics, namely, flextime and flexplace or temporal and geographic flexibility (Choudhury et al., 2021). With regard to flextime, Yang and Zheng (2011) noted that flextime allows employees to adjust their working schedules or their biological clocks to work during hours when they prefer working and feel most productive. Bloom et al. (2015) commented that individual productivity can be enhanced via reduced commute times and fewer sick days. With BYOD, employees can also work at any flexplace convenient to them. Work-from-anywhere is a good example to show geographic flexibility (Choudhury et al., 2021). In sum, the job performance of employees can be improved by allowing them to work on their own rhythm, especially with their own devices Therefore, we propose

H3: Flexibility due to BYOD is positively related to individual productivity.

Although a considerable proportion of the workforce appreciates having flexible working procedures, these procedures can lead to increased workloads,

especially among the younger generation of employees (Dell and Intel, 2011). Employees are accustomed to bringing their mobile devices to their workplace and back home. The prevalence of the "working from home" concept leads to an unspoken norm where individuals are expected to work from home whenever needed. Managers know that their employees can flexibly arrange their time and location to work after hours; they also tend to give their employees more tasks to work on during these periods. However, working outside office hours may not be a voluntary decision made by employees. Most of the time, these employees feel that they are obligated to work around the clock due to the "convenience" granted by their personal mobile devices, thereby extending their working hours and increasing their workload. Some researchers, such as Sarker et al. (2012), mentioned that while mobile technologies undoubtedly grant flexibility and free people from time and location restrictions, they also blur the boundaries between one's work and personal life. Blurring such boundaries results in role stress and increases one's level of perceived workload. Last, Franken et al. (2021) concluded that forced flexibility and remote working have created increased workload and emotional stress, as the collision of work and home lives may contribute to heightened demands from both spheres through increased external distractions and a loss of routine. Following the above discussion, we propose

H4: Flexibility due to BYOD is positively related to work overload.

Individual productivity is a combination of efficiency and effectiveness (Payne, 2000). Employees equipped with mobile devices tend to handle their daily work tasks efficiently within their working hours and avoid using these devices outside of their working hours (Batt and Valcour, 2003), thereby reducing their interrole conflict and subsequently reducing their work-to-life conflict (Zhang et al., 2020). With regard to work effectiveness, by using their personal mobile devices that they are most familiar with, employees can finish a higher number of tasks with a higher quality and standard (Rege, 2011). In this way, these employees will usually keep a work-to-life balance. Another support for the negative relationship between individual productivity and work-to-life conflict can be found in Lembrechts et al. (2015), who divided the sources of work-to-life conflict into two categories, namely, sources (stressors) that are deemed to increase work-to-life conflict and sources (resources) that decrease such conflict. Enhanced individual productivity is one of those "resources" that help employees fulfill their work roles and mitigate their work-to-life conflict (Greenhaus and Beutell, 1985).

H5: Individual productivity due to BYOD is negatively related to work-to-life conflict.

Work overload can be used to describe one's quantity of work and has been identified as one of the strongest and most consistent predictors of work-to-life conflict (Geurts and Demerouti, 2003). Perceived work overload is associated with a high level of work-to-life conflict (Buruck et al., 2020). Work-to-life conflict can be based on time, strain, and behavior (Greenhaus and Beutell, 1985). Time-based conflicts arise when multiple role demands, which may include excessive work hours and schedule conflicts, compete for an individual's time. Having work overload and an insufficient time to complete one's work have been mentioned as major sources of time-based conflict (Moore, 2000). The concept of role strain, which refers to an individual's self-perception of having "too much work, too little

time" has also been associated with work overload. Recently, during Covid-19, employees usually work beyond their working hours and often go on overtime while working from home, which induces work-life imbalance (Tejero et al., 2021). Last, according to resource conservations theory, when an individual consumes his/her time and energy in performing one role (work), then s/he will run out of resources for fulfilling his/her other role (family) (Zhang and Liu, 2011). Therefore, we propose

H6: Work overload due to BYOD is positively related to work-to-life conflict.

The advent of mobile device usage has introduced a new era of connectivity for social and organizational purposes. In their BYOD survey, Dell and Intel (2011) found that by using their own mobile devices at work, employees implicitly accept the tradeoffs in work-life balance and accept to work more often outside of their usual working hours. Based on conservation of resources theory, Richardson and Thompson (2012) argued that employees may be motivated to remain virtually connected to their workplace because they think that doing so will help them build or conserve important resources related to their jobs. However, the more these employees willingly stay connected to their work after their working hours, the more stress they will feel when behaving as boundary-role persons spanning the family and work domains, thereby leading to an interrole conflict. Based on boundary theory, boundary permeability epitomizes role conflict (Hall and Richter, 1988) in that individuals attend to two domains with separate norms and expectations. While at home, individuals are not psychologically or physically ready to pursue those responsibilities that are deemed to be important to their work role. Therefore, a greater level of connectivity after working hours will allow one's work role to intrude in his/her personal life (Boswell and Olson-Buchanan, 2007). Recent work like Yang et al. (2022) has also empirically tested the positive relationship between WCBA and work-to-life conflict. Therefore we propose

H7: WCBA due to BYOD is positively related to work-to-life conflict.

The majority of the research on the relationship between flexibility and work-to-life conflict support a negative relationship between these two. For instance, Anderson et al. (2002) revealed that having a flexible time and workplace gives employees a greater control over their work and family matters, thereby helping them manage the often-conflicting demands from their work and family. The perceived autonomy can help employees better balance their work and family demands and make them feel less taunted by stress, boredom, fatigue, or work-to-life conflict (Hill et al., 2010). This argument is further supported by Buruck et al. (2020), who found a direct and negative relationship between work flexibility and work-life conflict. Studies performed in the virtual office and telecommuting contexts have also reported that families thrive due to the flexibility of employees (Yun et al., 2012). We therefore propose

H8: Flexibility due to BYOD is negatively related to work-to-life conflict.

Ⅴ. Research Methodology

5.1. Measurements

An online survey was conducted to test the research

model. The original set of survey instruments was developed based on the literature review and the results of discussions with faculty members. Some measures borrowed from other studies were refined to fit the BYOD context, for example, "personal mobile device" is emphasized. <Table 1> shows the definitions, measurements, and sources of these constructs. Except for WCBA, all other variables were treated as reflective constructs in the data analysis.

5.1.1. WCBA

Richardson and Benbunan-Fich (2011) measured WCBA by investigating the mobile device usage of employees when engaging in various activities. They employed a five-point Likert scale, with 1 denoting "never" and 5 denoting "always." Given that Richardson and Benbunan-Fich (2011) were among the first to study WCBA, especially in the context of using wireless devices, we adopt their approach in our study. WCBA is the only formative variable in this research because we aim to investigate the usage of personal mobile devices in different occasions or dimensions.

5.1.2. Flexibility

Flexibility was measured by using five items adapted from Skinner and Pocock (2010) and Yun et al. (2012). Skinner and Pocock (2010) assessed flexibility by using two items related to flextime. Yun et al. (2012) expanded the dimensions of flexibility to the self-controlled flexibility of "where" and "what." Following Yun et al. (2012), we combined flexibility and autonomy in our data analysis and used a dimension of "how" to represent the original measure of autonomy. Overall, we measured flexibility by using five items and redefined such concept as the ability of an employee to rearrange his/her time, location, content, and method to finish his/her tasks following the guidelines set by his/her company (Hill et al., 2001).

5.1.3. Productivity

Payne (2000) defined individual productivity as the way an individual uses the resources available to him/her in order to contribute to the goals of his/her organization; in a sense, productivity is a combination of efficiency (ratio of inputs to outputs) and effectiveness (amount and quality of output relative to some standard or expectation). We followed the approach of Tarafdar et al. (2007) and used the above definition to expand our measurement of individual productivity. We also adopted two new items, namely, the use of my personal mobile device helps me improve my (1) working efficiency and (2) working effectiveness.

5.1.4. Work overload

Work overload is defined as the case where a person is held responsible for tasks that cannot be completed due to inadequate resources (such as time, manpower, and equipment) or for work that is beyond his/her personal capabilities (Bateman, 1981). We measured perceived work overload by using four items adapted from Moore (2000) and Yun et al. (2012). Inspired by Skinner and Pocock (2010), we added another item to assess overall work overload, that is, whether the respondents feel that they had too much work to do after using their personal mobile devices for work purposes.

5.1.5. Work-to-life conflict

Work-to-life conflict is a type of inter-role conflict

<Table 1> Measures of Constructs

Constructs and Definitions	Measures	Sources
WCBA (Formative) - an organization member's use of personal portable wireless enabled devices (laptop or handheld) to engage with work or work-related colleagues during non-work time (e.g., mornings before work, evenings after work, weekends, or vacations). (Richardson and Benbunan-Fich, 2011; Richardson and Thompson, 2012)	Please indicate if you have ever used **your personal** mobile device to perform job-related duties during the following stated events outside the regular working hours: (1 = Never, 5 = Always) 1. Shopping 2. Traveling 3. Meal at home 4. Meal at restaurant 5. On a date 6. Sporting event 7. Party or social event 8. Religious service	Richardson and Benbunan-Fich (2011)
Flexibility(Reflective) - as an employee's ability to rearrange his/her time, location, content and method to finish his/her task within certain guidelines offered by the company (Hill et al., 2001)	Since you used **your personal** mobile device for work purposes, (1 = None flexibility, 5 = Complete flexibility) 1. How much flexibility have you had in selecting where you do your work? 2. How much flexibility have you had in scheduling when you do your work? 3. How much flexibility do you have in scheduling what work you will do? 4. How much flexibility do you have in scheduling how you do your work? 5. Overall, I have sufficient flexibility in my job to maintain adequate work.	Skinner and Pocock (2010); Yun et al. (2012)
Productivity(Reflective) - how well an individual uses available resources to contribute to organizational goals, and it is a combination of efficiency (ratio of inputs to outputs) and effectiveness (amount and quality of output relative to some standard or expectation) (Payne, 2000).	While I am working, the use of **my personal** mobile device helps to: (1 = Strongly disagree, 5 = Strongly agree) 1. Improve the quality of my work. 2. Improve my productivity. 3. Improve my working efficiency. 4. Improve my working effectiveness. 5. Accomplish more work than would otherwise be possible. 6. Perform my job better.	Tarafdar et al. (2007); Payne (2000)
Work Overload(Reflective) - when a person is held responsible for tasks which simply cannot be completed due to inadequate resources (such as time, manpower, equipment), or for work which is beyond his or her personal capabilities (Bateman, 1981).	After using **my personal** mobile device for work purposes, I feel (1 = Strongly disagree, 5 = Strongly agree) 1. The number of requests, problems, or complaints I deal with is more than my expectation. 2. The amount of work I do interferes with how well it is done. 3. Busy or rushed when working. 4. Pressured when working. 5. Overall, I have too much to do.	Moore (2000); Yun et al. (2012); Skinner and Pocock (2010)

<Table 1> Measures of Constructs (Cont.)

Constructs and Definitions	Measures	Sources
Work-to-life conflict (Reflective) - the inter-role conflict where the demands created by the job (BYOD here) interfere with performing family-related responsibilities (Greenhaus and Beutell, 1985; Netemeyer et al., 2004).	To what degree do you agree with the following statements: (1 = Strongly disagree, 5 = Strongly agree) 1. The use of **my personal** mobile device interferes with my home and personal life. 2. The amount of time the work use of **my personal** mobile device takes up makes it difficult to fulfill home or personal responsibilities. 3. Things I want to do at home or personally do not get done because of the demand of work use of **my personal** mobile device put on me. 4. The work use of **my personal** mobile device produces strain that makes it difficult to fulfill home/ personal duty. 5. Due to **my personal** mobile device use for work purposes, I have to make changes to my plans for family/ personal activities.	Yun et al. (2012); Ahuja et al. (2007)

where the demands created by the job (e.g., BYOD) interfere with one's performance of his/her family-related responsibilities (Greenhaus and Beutell, 1985; Netemeyer et al., 2004). We operationalized work-to-life conflict by adopting five items from Ahuja et al. (2007) and Yun et al. (2012). We asked the respondents to indicate their degree of agreement on the statements regarding how the interrole conflict introduced by using BYOD for work purposes can interfere with the personal life responsibilities of employees.

5.2. Research Design and Data Collection

We performed a cross-sectional survey by using LinkedIn, a social networking site for professionals, and included three BYOD groups in our sampling pool. We adopted judgmental sampling as our sampling method (Dillon et al., 1993). Specifically, we selected our participants just because they were representative of the population of interest and/or satisfied the needs of our study. Those professionals joining BYOD groups are somehow relevant to the use of BYOD and tend to express their perceptions toward the BYOD policy. The questionnaire was designed with the help of Google Forms and was delivered to each target participant by using the private messaging feature of LinkedIn. After a user agreed to participate, s/he will be automatically redirected to the online survey.

A total of 2000 questionnaires were sent to the members of BYOD groups via LinkedIn within a month. After several rounds of solicitation, 250 valid responses were received, thereby yielding a 12.5% response rate. <Table 2> presents the demographic information of the survey respondents. As can be seen in the table, the majority of the respondents are male (84.8%) and over 60% are aged between 35 years and 54 years and hold management positions in their respective companies. More than three-quarters of the respondents have received a bachelor's degree or above, and most of them are using more than two mobile devices.

Gender, age, and education level were used as control variables in this study. Gender difference is said to influence work-to-life conflict because professional women tend to face the dual burden of excelling in their work and fulfilling their re-

<Table 2> Demographic Information of the Respondents

Gender		
Category	Frequency	Percentage
Male	212	84.8%
Female	38	15.2%
Total	250	100%
Age		
Category	Frequency	Percentage
Under 18 years old	1	0.4%
18-24 years old	6	2.4%
25-34 years old	46	18.4%
35-44 years old	88	35.2%
45-54 years old	80	32%
55-64 years old	26	10.4%
65 years old or above	3	1.2%
Total	250	100%
Education		
Category	Frequency	Percentage
Less than high school	0	0
High school graduate (includes equivalency)	10	4%
Completed some college (no degree)	33	13.2%
Associate's degree	13	5.2%
Bachelor's degree	104	41.6%
Master's degree	76	30.4%
Ph.D.	14	5.6%
Total	250	100%
Position level		
Category	Frequency	Percentage
Senior management	45	18%
Middle level management	82	32.8%
Junior management	43	17.2%
Non-management	56	22.4%
Entry-level	24	9.6%
Total	250	100%
Number of mobile devices owned		
Category	Frequency	Percentage
0	0	0
1	7	2.8%
2	29	11.6%
3	72	28.8%
4	56	22.4%
5	31	12.4%
6	25	10%
7	7	2.8%
8	6	2.4%
9	0	0
>10	17	6.8%
Total	250	100%

sponsibilities at home and have reported a higher level of work-to-life conflict than their male counterparts (Julien, 2007). With regard to age, single young workers and elderly workers tend to feel less work-to-life conflict compared with their middle-aged counterparts who assume the major responsibilities in both their work and family lives. The National Health Interview Survey (2010) revealed that work-life imbalance was most prevalent among workers aged between 30 years and 44 years. Educational level can also influence work-to-life conflict. Previous studies have also revealed that a higher level of education is associated with a higher level of work-to-life conflict because those individuals with higher education levels occupy employment positions that are more demanding or require longer hours of work (Voydanoff, 2005).

Ⅵ. Data analysis

6.1. Exploratory Data Analysis

The data were initially analyzed by using SPSS for the exploratory analysis before using SmartPLS for the confirmatory analysis. Performing an exploratory analysis is necessary because some of our constructs are new, especially in the BYOD context. To confirm the factor loadings of our reflective variables, we performed an exploratory factor analysis by using SPSS 20. <Table 3> presents the results of the exploratory factor analysis. A pattern of four components is observed from the factor analysis, and no obvious cross-loading problems are observed for these constructs. Therefore, we confirm the dimensionality of these four constructs.

6.2. Analysis of the Measurement Model

We confirmed the factor structure after the exploratory analysis. We inputted the data in a structural equation model (SEM), through which we tested the measurement and structural models.

We applied the partial least squares (PLS) method to analyze the data and to test the research model. PLS can be used to simultaneously handle formative and reflective constructs and has minimal demands on the sample size for validating the model (Chin, 1998). We used SmartPLS version 3.0 (2015) in our analysis. We initially tested the measurement model

<Table 3> Exploratory Factor Analysis

	Flexibility	Productivity	Work Overload	Work-to-life Conflict
Flex_1	**.755**	.251	-.019	-.073
Flex_2	**.874**	.155	-.042	-.035
Flex_3	**.869**	.080	-.127	-.085
Flex_4	**.876**	.099	.012	-.151
Flex_5	**.873**	.112	-.018	-.136
Prod_1	.276	**.800**	-.088	-.089
Prod_2	.136	**.915**	-.024	-.133
Prod_3	.094	**.864**	-.045	-.087
Prod_4	.083	**.871**	-.099	-.016
Prod_5	.090	**.919**	-.082	-.077

<Table 3> Exploratory Factor Analysis (Cont.)

	Flexibility	Productivity	Work Overload	Work-to-life conflict
Prod_6	.129	**.890**	-.094	-.117
Over_1	-.039	-.057	**.750**	.270
Over_2	-.001	-.089	**.813**	.156
Over_3	-.029	-.088	**.890**	.166
Over_4	-.100	-.101	**.860**	.219
Over_5	-.029	-.054	**.875**	.239
WTLC_1	-.193	.017	.301	**.659**
WTLC_2	-.043	-.022	.260	**.859**
WTLC_3	-.093	-.186	.181	**.866**
WTLC_4	-.126	-.161	.247	**.865**
WTLC_5	-.082	-.135	.150	**.842**

Notes: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization

following the two-step approach of Anderson and Gerbing (1988). Afterward, we used this model to confirm the validity and reliability of our constructs, and we used the structural model to examine the structural relationships among the latent variables and to test the research hypotheses.

The reliability test aims to guarantee the consistency of the items underlying a certain construct (Gefen et al., 2000). SmartPLS calculates the composite reliabilities of reflective variables. Meanwhile, the composite reliability of formative variables is not meaningful and appropriate, but their weights are relevant (Chin and Gopal, 1995). Composite reliability can also be used as a criterion for assessing the internal consistency of each construct (Hair et al., 1998). <Table 4> presents the composite reliability and the square roots of the average variance extracted (AVE) of the reflective constructs. All values of composite reliability (0.9) and square root of AVEs (0.8) exceed the recommended thresholds of 0.7 (Nunnally, 1978) and 0.5 (Hair et al., 1998), respectively. Therefore, these results demonstrate the good reliability and internal consistency of the measures.

A convergent validity is achieved when (1) the factor loadings are significant and exceed 0.707 (Carmines and Zeller, 1979) and when (2) the AVE of each latent variable exceeds 0.5 (Fornell and Larcker, 1981). Convergent validity is not applicable to formative variables; instead, the weight of each item was used to assess its contribution to the overall factor. To test convergent validity, the bootstrapping procedure was run for the first time. All reflective

<Table 4> Composite Reliability

Constructs	No. of Items	Composite Reliability	Square Root of AVE
Flexibility	5	0.939	0.868
Productivity	6	0.960	0.895
Work overload	5	0.939	0.869
Work-to-life conflict	5	0.937	0.865

<Table 5> Measurement Model Statistics

Constructs	Items	Weights	Loadings	T-Statistics	AVE
Connectivity	Connect_2	0.790		9.991	
	Connect_4	0.472		4.002	
	Connect_8	-0.257		1.997	
Flexibility	Flex_1		0.813	23.998	0.754
	Flex_2		0.886	44.180	
	Flex_3		0.871	38.850	
	Flex_4		0.881	42.298	
	Flex_5		0.888	46.001	
Productivity	Prod_1		0.860	43.610	0.801
	Prod_2		0.929	80.977	
	Prod_3		0.877	50.199	
	Prod_4		0.864	44.866	
	Prod_5		0.923	77.492	
	Prod_6		0.915	64.739	
Work Overload	Over_1		0.814	33.301	0.756
	Over_2		0.820	29.852	
	Over_3		0.899	51.585	
	Over_4		0.896	54.687	
	Over_5		0.914	77.643	
Work-to-life Conflict	WTLC_1		0.751	24.660	0.748
	WTLC_2		0.891	54.361	
	WTLC_3		0.899	54.692	
	WTLC_4		0.921	86.522	
	WTLC_5		0.851	33.113	

variables demonstrate significant factor loadings, but most items in the formative variable (WCBA) do not have a significant weight on the construct. The problematic items include items 1 (shopping), 3 (mean at home), 5 (on date), 6 (sporting event), and 7 (party or social event). These findings indicate those occasions when people tend to use their mobile devices for work purposes. Based on these results, the five items were removed from further analysis and the model was retested. The second round of results (<Table 5>) indicate that all reflective variables have factor loadings of greater than 0.7 and that the T-values are all significant at 0.01. The AVE for each latent variable exceeds 0.5, thereby indicating a good convergent validity. Meanwhile, each weight for the formative variable (WCBA) is significant, thereby suggesting that the items (travelling, meal at restaurant, and religious service) significantly contribute to the formation of the formative variable.

Discriminant validity is assessed by verifying whether the correlations between a referent construct and others are substantially different from the square roots of the AVE scores of that construct (Fonell and Larcker, 1981). <Table 6> presents the inter-construct correlations and square roots of the AVEs for the reflective variables. The square roots of the AVEs are greater than the correlations between the corresponding constructs, thereby indicating a good discriminant validity.

<Table 6> Construct Correlations and the Squared Roots of AVEs

	Flexibility	Productivity	Work Overload	Work-to-life Conflict
Flexibility	**0.868**			
Productivity	0.325	**0.895**		
Work overload	-0.132	-0.195	**0.869**	
Work-to-life conflict	-0.258	-0.247	0.502	**0.865**

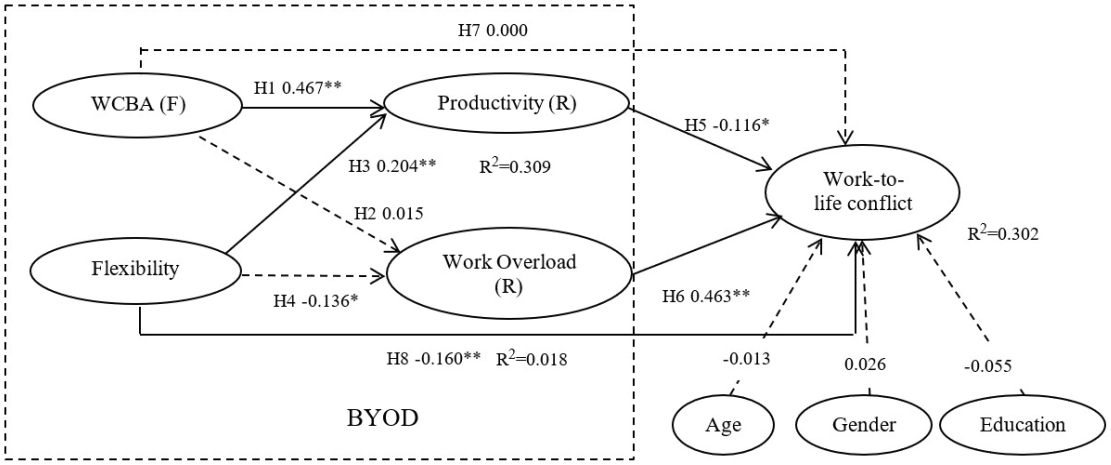
Note: Diagonal elements are the square roots of the AVEs

6.3. Analysis of the Structural Model

The structural model was tested upon confirming the measurement model. <Table 7> presents the results of the path coefficients in the research model. As can be seen in the table, six out of eight hypotheses are significant. The path coefficients of H1 (between WCBA and productivity), H3 (between flexibility and productivity), H6 (between work overload and work-to-life conflict), and H8 (between flexibility and work-to-life conflict) are significant at the 0.01 level, while that of H5 (between productivity and work-to-life conflict) is significant at the 0.1 level. A negative significant path instead of a positive significant path was found between flexibility and work overload (H4), and no significant paths are found between WCBA and work overload (H2) as well as between WCBA and work-to-life conflict (H7). All control variables (age, gender, and education) do not significantly affect the dependent variable. Meanwhile, the R-square (<Figure 2>) values for the two important dependent variables in the structural models are 0.309 and 0.302, thereby suggesting that the antecedents of productivity contribute 30.9% to the variance in productivity and that the independent variables altogether explain over 30% of the variance in work-to-life conflict.

<Table 7> Path Coefficients

Paths	T-statistics	Significant?
H1: WCBA → Productivity	8.164	Yes (0.01 level)
H2: WCBA → Work overload	0.196	No
H3: Flexibility → Productivity	3.727	Yes (0.01 level)
H4: Flexibility → Work overload	1.696	Yes (0.1 level, but negatively)
H5: Productivity → Work-to-life conflict	1.741	Yes (0.1 level)
H6: Work overload → Work-to-life conflict	8.496	Yes (0.01 level)
H7: WCBA → Work-to-life conflict	0.004	No
H8: Flexibility → Work-to-life conflict	2.893	Yes (0.01 level)
Age → Work-to-life conflict	0.222	No
Gender → Work-to-life conflict	0.408	No
Education → Work-to-life conflict	0.970	No



Note: The solid line means the path coefficient is significant; dotted line means not significant.
R = Reflective; F = Formative * p < 0.1; ** p < 0.01

<Figure 2> Results of PLS Analysis

6.4. Mediating Effect of Productivity and Work Overload

We tested the mediating effects of productivity and work overload by using a series of regression models. Following the approach of Baron and Kenny (1986), a construct is considered a mediator when the following conditions hold: (1) the independent variables affect the mediator in the first regression; (2) the independent variables affect the dependent variable in the second regression; (3) the mediator affects the dependent variable in the third regression; and (4) the effect of the independent variables on the dependent variable is less in the third equation than in the second. A full mediating effect is observed when the independent variable does not affect the dependent variable due to the involvement of the mediator. Otherwise, the mediator is believed to have a partial mediating effect (Baron and Kenny, 1986). The results of the multiple regressions are presented in <Table 8>, <Table 9>.

<Table 8> shows the mediating effect of productivity. The path coefficient between WCBA and productivity is significant (0.47), but the path coefficients between WCBA and work-to-life conflict before (0.15) and after (0.10) involving the mediator are not significant. Therefore, conditions 2 and 4 are not satisfied, that is, productivity does not mediate the relationship between WCBA and work-to-life conflict. For the path flexibility – productivity – work-to-life conflict, the path coefficients of flexibility – productivity (0.21), flexibility – work-to-life conflict (-0.25), and productivity – work-to-life conflict (-0.22) are all significant at the 0.01 level. In other words, conditions 1, 2, and 3 hold for this path. In model 2, the absolute path coefficient value of flexibility – work-to-life conflict (0.20) is significantly lower than that of model 1 (0.25). Therefore, condition 4 also holds. Meanwhile, the path coefficient of flexibility – work-to-life conflict remains significant after involving the mediator (productivity) in the regression equation, thereby suggesting that productivity has a partial mediating effect between flexibility and work-to-life conflict. Sobel test (Sobel,

<Table 8> Test Results of the Mediating Effect of Productivity

	Mediating Variable	Dependent Variable	
	Productivity	Work-to-life conflict	
Independent variables		Model 1	Model 2
Independent variables			
WCBA	0.47**	0.15	0.06
Flexibility	0.21**	-0.25**	-0.20**
Mediating variable			
Productivity			-0.22**
R^2	0.31	0.09	0.11

Note: *p < 0.1; ** p < 0.01

1982) was performed to further assess the significance of the mediating effect of productivity. The Z-value (2.37) is significant at the 0.05 level, thereby confirming the mediating effect of productivity in the path.

<Table 9> shows the mediating effect of work overload. Given that the path coefficient between WCBA and work overload (-0.01) is not significant, condition 1 does not hold. In other words, work overload does not mediate the path between WCBA and work-to-life conflict. For the path of flexibility – work overload – work-to-life conflict, the path coefficients of flexibility – work overload (-0.15), flexibility – work-to-life conflict (-0.25), and work overload – work-to-life conflict (0.48) are all significant at the 0.1 and 0.01 levels, respectively. Therefore, conditions 1, 2, and 3 hold for this path. In model 2, the absolute path coefficient value (0.18) of flexibility – work-to-life conflict is significantly lower than that of model 1 (0.25). Therefore, condition 4 also holds. Meanwhile, the path coefficient of flexibility – work-to-life conflict (-0.18) remains significant after involving the mediator (work overload) in the regression equation. Therefore, work overload has a partial mediating effect between flexibility and work-to-life conflict. In the Sobel test (Sobel, 1982), the Z-value (1.76) is significant at the 0.1 level, thereby confirming the mediating effect of work overload in the path. With regard to the strength of the mediating effect, work overload brings a higher level of changes in the R square value compared with that

<Table 9> Test Results of the Mediating Effect of Work Overload

	Mediating Variable	Dependent Variable	
	Work Overload	Work-to-life Conflict	
Independent variables		Model 1	Model 2
Independent variables			
WCBA	-0.01	0.15	0.15
Flexibility	-0.15*	-0.25**	-0.18**
Mediating variable			
Work Overload			0.48**
R^2	0.02	0.09	0.31

Note: * p < 0.1; ** p < 0.01

of productivity in <Table 8> (0.22 vs. 0.02).

6.5. Common Method Bias

As with all self-reported data, a common method bias may be observed in our findings (Podsakoff et al., 2003). To test for the potential existence of such bias, we performed Harman's one-factor test (Podsakoff et al., 2003) on the four reflective constructs in the theoretical model. The results of the exploratory factory analysis reveal that four factors are present and that the highest variance explained by one factor is 35% (< 50%). This finding suggests that common method bias is not likely to contaminate the results of this study. Another way to check for common method bias is to follow the approaches of Podsakoff et al. (2003), Williams et al. (2003), and Liang et al. (2007). A common method factor including all indicators of the principal constructs was then inputted into the SmartPLS model. We calculated the variances of each indicator that were substantively explained by the principal construct and by the method. In <Table 10>, the squared values of the method factor loadings (R22) were interpreted as the percentage of indicator variance caused by the method, while the squared loadings of the substantive constructs (R12) were interpreted as the percentage of indicator variance caused by the substantive constructs. If the method factor loadings are insignificant and if the R22 values are substantially lower than the R12 values, then common method bias is unlikely to be a serious concern for this study. <Table 10> shows that the average substantively explained variance of the indicators is 0.711 while the average method-based variance is 0.012. The ratio of substantive variance to method variance is approximately 61:1. In addition, most of the method factor loadings are not significant. The small magnitude and insignificance of the method variance further reduce the concerns related to common method bias.

<Table 10> Common Method Bias Analysis

Construct	Indicator	Substantive Factor Loading (R1)	R12	Method Factor Loading (R2)	R22
WCBA	WCBA_2	0.792***	0.627	0.386**	0.149
	WCBA_4	0.469***	0.220	0.229**	0.052
	WCBA_8	-0.256*	0.066	-0.072	0.005
Flexibility	Flex_1	0.745***	0.555	0.084	0.007
	Flex_2	0.906***	0.821	-0.03	0.001
	Flex_3	0.879***	0.773	-0.001	0.000
	Flex_4	0.906***	0.821	-0.031	0.001
	Flex_5	0.898***	0.806	-0.014	0.000
Productivity	Prod_1	0.741***	0.549	0.142*	0.020
	Prod_2	0.933***	0.870	-0.004	0.000
	Prod_3	0.907***	0.823	-0.044	0.002
	Prod_4	0.933***	0.870	-0.079	0.006
	Prod_5	0.966***	0.933	-0.049	0.002
	Prod_6	0.887***	0.787	0.037	0.001

<Table 10> Common Method Bias Analysis (Cont.)

Construct	Indicator	Substantive Factor Loading (R1)	R12	Method Factor Loading (R2)	R22
Work Overload	Over_1	0.788***	0.621	-0.027	0.001
	Over_2	0.851***	0.724	0.037	0.001
	Over_3	0.922***	0.850	0.028	0.001
	Over_4	0.857***	0.734	-0.063	0.004
	Over_5	0.926***	0.857	0.024	0.001
Work-to-life Conflict	WTLC_1	0.717***	0.514	-0.025	0.001
	WTLC_2	0.979***	0.958	0.123*	0.015
	WTLC_3	0.869***	0.755	-0.048	0.002
	WTLC_4	0.874***	0.764	-0.069*	0.005
	WTLC_5	0.873***	0.762	0.019	0.000
Average		**0.807**	**0.711**	**0.023**	**0.012**

Note: * p < 0.1, ** p < 0.5, *** p < 0.01

Ⅶ. Discussion of Results

This study aims to explore the unique antecedents of work-to-life conflict in the BYOD context. The attributes of BYOD that predict work-to-life conflict include WCBA, flexibility, productivity, and work overload. After the exploratory factor analysis, a pattern of 21 items measuring 4 reflective variables are observed. We obtain the following findings in the confirmatory stage.

First, WCBA due to BYOD has a significant and positive relationship with individual productivity (H1 supported), thereby suggesting that the more often the employees use their personal mobile devices during non-work hours, the more productive they become in their work. Employees are addicted to staying connected to their work even after their normal working hours. By using their personal mobile devices, they can use their scattered time more efficiently and have a better control over their working procedure. This result is consistent with the literature (Rege, 2011; Richardson and Thompson, 2012) on the positive effect of connectivity, and can increase thriving at work (Yang et al., 2022).

Second, similar to WCBA, flexibility also increases the productivity of individuals (H3 supported). Employees tend to be productive when they are given freedom to choose the time, location, and way of using their personal mobile devices for work purposes. They can even work at their own rhythm to finish their tasks efficiently. Flexibility is an important attribute of BYOD. Many industry surveys (Dell and Intel, 2011) and academic studies (Choudhury et al., 2021; Coenen and Kok, 2014; Niehaves et al., 2012) identify flexibility as one of the major benefits brought by BYOD to employees. Our findings provide empirical support and scientific reasoning for the above arguments, that is, flexibility has a positive effect on productivity improvement, thereby benefiting employees in the BYOD context.

Third, WCBA has no effect on work overload, while flexibility shows a slightly negative relationship with this negative aspect of BYOD. These results mean H2 and H4 are not supported. This finding

is somehow a good sign, that is, employees will not perceive an increased workload due to the constant connectivity provided to them by their mobile devices. They even feel released from their work pressures due to the flexibility given to them by using their own mobile devices. Therefore, managers or policy makers should not be worried that WCBA due to BYOD will bring too much workload to employees. However, these findings are inconsistent with those of previous studies (e.g., Doargajudhur and Dell, 2020; Fonner and Roloff, 2012; Franken et al., 2021; Sarker et al. 2012), which highlight a positive relationship between WCBA/flexibility and work overload. These results are also not supported by boundary theory, which contends that constant connectivity and flexibility blur the boundaries between work and life, thereby increasing role stress (Kahn et al., 1964). We believe that such inconsistencies are largely due to the special context of BYOD. Employees treat their mobile devices as their own property than that of the company. They tend to use these devices to complete their work and personal tasks. Therefore, they usually do not perceive their mobile devices as a burden; instead, they tend to enjoy the 24-hour connectivity and convenience brought to them by flextime and flexplace.

Fourth, the increased productivity due to BYOD reduces work-to-life conflict (H5 supported). Mobile technologies provide employees with enough convenience and flexibility to finish their tasks efficiently. Employees nowadays can finish their tasks at their workplace, thereby reducing the amount of potential work at home. They can also perform their job tasks at any time and place, thereby reducing interrole conflict. In sum, having a more effective and efficient working status due to the use of mobile devices can help employees balance their work and personal lives. This result is consistent with the majority of the literature (Batt and Valcour, 2003; Lembrechts et al., 2015; Zhang et al., 2020) that examine the relationships between productivity and work-to-life conflict.

Fifth, work overload due to BYOD has a significant positive effect on work-to-life conflict (H6 supported). Individuals can hardly allocate much time or resources to take care of their families because they are fully occupied with their work role due to the increasing demand of their mobile device usage. After these employees use all their time and energy in performing their job roles, they are left with limited resources to fulfill their roles in the family. The majority of the previous studies based on boundary theory (Moore, 2000) and conservation of resources theory (Zhang and Liu, 2011) have supported the natural relationship between increased workload and higher level of work-to-life conflict. This result is also consistent with the recent findings during Covid-19 (Tejero et al., 2021).

Sixth, similar to the results for H2, WCBA has no influence on work-to-life conflict (H7 not supported), while flexibility has a slightly negative effect on such conflict (H8 supported). The result for H7 (WCBA – work-to-life conflict) contradicts the contentions of boundary theory (Hall and Richter, 1988) and conservation of resources theory (Richardson and Thompson, 2012), which posit that boundary permeability epitomizes role conflict and that the fear of losing valuable resources and staying connected to work outside of their working hours will exacerbate the work-to-life conflict of employees. We attribute this result to the fact that employees do not perceive their usage of mobile devices at home (even for work purposes) as a serious task or threat in their lives. They purchase these devices mainly for personal convenience and to coordinate their job tasks. The constant connectivity granted by these devices essentially brings more benefits (e.g., individual productivity)

to these employees instead of introducing potential problems. Last, flexibility has a slightly negative impact on work-to-life conflict. Those employees who use their mobile devices may not perceive that the flexibility brought upon by BYOD can interrupt their personal lives. Instead, they will consider these mobile devices as part of their lives because they own these devices. They only use these devices outside of their working hours to improve their efficiency of doing things. This argument is consistent with our previous assumption in H8 and the findings of the majority of the literature (Anderson et al., 2002; Buruck et al., 2020; Hill et al., 2010). In sum, traditional boundary theory most likely has a limited explanatory power in the BYOD context.

Ⅷ. Implications and Future Research

8.1. Implications for Theory

Before the emergence of information and communication technologies, work and personal life had clearly distinct boundaries and were separated by time and place. However, after the arrival of such technologies, the boundaries between work and personal life became fluid. In this study, we explore the unique attributes of BYOD and their impact on the work-to-life conflict resulting from the blurred boundaries between the work and personal lives of employees.

As the first theoretical contribution of our work, we confirm several BYOD attributes in our research model. Yun et al. (2012) were among the first to explore the attributes of using smartphones for work purposes. They introduced four variables, namely, flexibility, autonomy, work overload, and productivity. In their data analysis, autonomy and flexibility demonstrated the same dimensional factor. Following the approach of Yun et al. (2012), we treated flexibility, work overload, and productivity as the fundamental attributes of mobile device usage. We also added connectivity as another important dimension and introduced WCBA to our research model, as WCBA has aroused researchers' attention in recent years especially after Covid-19 (e.g., Yao et al., 2023). Our findings indicate that WCBA significantly contributes to explaining productivity directly and work-to-life conflict indirectly. The other BYOD attributes are also important in representing the unique characteristics of BYOD and explained over 30% of variance in the dependent variable. We therefore confirm the significance of these four BYOD attributes in our research model.

As our second theoretical contribution, we confirm the relationships among BYOD attributes. Productivity and work overload have mediating effects between WCBA/flexibility and work-to-life conflict. We purposely selected these two variables to represent the positive and negative consequences of connectivity (after working hours) and flexibility. Although the causal relationship between productivity and work overload is not the major focus of this study, we identified a significant negative relationship between them (path coefficient = -0.230; p value = 0.001). After the data analysis, we found that both WCBA and flexibility positively influence individual productivity but do not influence the perceived work overload of employees. Although somehow different from those of previous studies, this finding suggests that employees hold a positive attitude toward their use of personal mobile devices for work purposes. As for the mediating role of productivity and work overload, the results of our data analysis confirmed the significant mediating effect of productivity on both paths (WCBA – productivity – work-to-life con-

flict and flexibility – productivity – work-to-life conflict). However, work overload only plays a significant mediating role in the path of flexibility – work overload – work-to-life conflict.

As our third theoretical contribution, we confirm the causal relationships between some BYOD attributes and work-to-life conflict. Our findings confirm that WCBA, productivity, work overload, and flexibility directly and/or indirectly contribute to explaining the variances in work-to-life conflict. On the one hand, productivity and flexibility are negatively related to work-to-life conflict, while work overload is positively related to work-to-life conflict. On the other hand, both WCBA and flexibility initially help increase individual productivity and subsequently reduce work-to-life conflict. Therefore, WCBA, with the purpose of increasing productivity, can help employees maintain a work-life balance. Flexibility also shows an indirect effect on work-to-life conflict by reducing work overload. These results somehow showed that the traditional boundary theory and conservation of resources theory may have limited explanation power in the BYOD context.

8.2. Implications for Practice

The findings of this study have significant managerial implications for BYOD policy makers or IT managers who are in charge of handling BYOD-related issues.

First, organizations should eliminate the concerns related to allowing their employees to use their own devices for work purposes. Constant after-work connectivity and flexibility do not necessarily lead to work-life imbalance. The appropriate use of personal mobile devices not only enhances individual productivity but also reduces work overload and work-to-life conflict. Our findings indicate that employees are not threatened by the implementation of BYOD in the workplace; instead, they enjoy having a flexible work arrangement and using their personal mobile devices outside their working hours to fulfil their job-related tasks. Therefore, companies must show a highly positive attitude toward BYOD and provide their employees with maximum flexibility to work by using their own devices. Overall, with a well-designed BYOD policy and sufficient consideration of security issues, investing in the development of infrastructures to support various types of BYOD devices and proactively guiding the BYOD behavior of employees are worthwhile pursuits for companies.

Second, flexibility and connectivity can contribute to productivity, which means that maintaining connectivity outside working hours and having a flexible work arrangement due to BYOD can help enhance the work efficiency and effectiveness of employees. In their BYOD policies, companies must include flexible work arrangements and allowing their employees to use their personal mobile devices to work at their own pace regardless of their location. Companies must also make sure that their employees are equipped with the appropriate and updated mobile applications to fulfill their work tasks and constantly maintain such applications. Decision makers do not need to set limitations in their connectivity policies. They must allow their employees to freely and voluntarily turn their mobile applications on and off when in working and non-working places, respectively. Moreover, if the employees connect to their company's intranet outside of their working hours, then they should be rewarded or compensated in some way because such behavior will increase their productivity and eventually benefit the company.

Third, flexibility turns out to negatively impact both work overload and work-to-life conflict. Therefore, trying to arrange a flexible time and place

for employees to work by using their mobile devices is a much better remedy than WCBA to satisfy the needs of employees. The flexibility granted by BYOD not only enhances the productivity of employees but also helps reduce their perceived workload.

Fourth, both productivity and work overload have significant effects on work-to-life conflict. When employees are highly productive while using their mobile devices, they tend to relieve themselves from work pressures when they arrive home; however, if they are given too much workload, then they will lose their work-life balance. Managers usually face a dilemma in this case. Specifically, keeping employees productive can reduce their work-to-life conflict, while pushing them too hard will lead them to another extreme. Therefore, managers should encourage the BYOD behavior of their employees to maximize their productivity on the one hand and warn them whenever they work beyond their calculated workload on the other hand. Organizations must also set an appropriate level of workload for each employee based on their job demands. If the workload of these employees exceeds the threshold, then organizations must implement an appropriate BYOD policy to limit the time and scope of work of their employees.

Fifth, mobile devices by themselves do not drive employees to use, while people do. Organizations must maintain an effective and transparent communication channel between mobile device users (the employees) and BYOD policy makers. Some companies do not understand the mobile device usage habits of their employees and have no knowledge of the extent to which the use of mobile devices will interfere with the personal lives of their employees. Meanwhile, employees do not clearly understand the requirements and expectations of their employees, that is, whether or how frequent they should reply to company messages or email. If such off-hour working behavior is considered an unspoken norm, then these employees must be informed on how they can adjust their pace to cater to their organizational culture.

Ⅸ. Limitations and Future Research

While we have attempted to minimize the potential problems in our study, several limitations still exist.

First, we collected all our data from an online social networking platform (LinkedIn) instead of a real company setting. Although BYOD groups represent those people who practice BYOD, some members of BYOD groups may have joined these groups simply out of interest and may not have a BYOD practice in their respective companies. In addition, the definition, acceptance level, and policy of BYOD vary from one company to another. Therefore, the respondents may have different experiences with BYOD. Future studies on BYOD must conduct their work in a real company setting to better reflect BYOD practices. By doing so, they can ensure that companies take the BYOD policy seriously and develop a more concrete idea about the perceptions of employees toward BYOD and its potential effects on work-to-life conflict.

Second, our work suffers from the common problems related to collecting data via a web survey. We recruited our participants by sending out email invitations and administered our survey online. The non-probability sampling methods adopted in our online survey may have attracted respondents who are interested in the BYOD phenomenon yet excluded those people who refused to comment on such topic, were not members of BYOD groups in LinkedIn, but were actively practicing BYOD in their companies. Therefore, the results of our data analysis may have limited generalizability. Future studies must recruit

highly representative samples to strengthen their findings.

Third, we conducted a cross-sectional survey to study a phenomenon that evolves over time (e.g., productivity and work-to-life conflict). A cross-sectional survey can only capture a snapshot of research issues at a given period and cannot depict the evolutionary process of work-to-life conflict. Therefore, future studies must employ a longitudinal research design and collect data over multiple periods to understand the role conflict resulting from the usage of mobile devices. Survey-based and cross-sectional research designs are also prone to common method bias. In this study, even though we have checked the potential common method bias problem, we only collected our data from single informants. Therefore, future studies must consider obtaining multiple types or sources of data and gather data across multiple periods. They can ask managers to evaluate the productivity of employees and invite important family members to comment on the issue of work-to-life conflict.

Fourth, we have examined four major attributes of BYOD, namely, WCBA, flexibility, productivity, and work overload as we believe that these attributes can represent most of the unique characteristics of BYOD. However, some other factors need to be explored in future studies. Given that the usage of mobile devices at the workplace is a prevalent phenomenon, understanding the unique features of BYOD is vital for BYOD decision makers. Investigating the positive and negative consequences of the aforementioned attributes can also help managers guide their employees in using their own mobile devices for work purposes.

Fifth, although we have controlled for demographic information as control variables in our model and showed that these factors do not significantly influence work-to-life conflict, our sample may still suffer from bias. The majority of our respondents are male, old, and hold senior positions in their companies. These people tend to perceive that using smart devices only produces additional workload. They consider BYOD as a new phenomenon and must quickly adjust their pace; therefore, these employees are facing technostress (Tarafdar et al., 2007). Older generations and female employees may also experience a greater degree of perceived work-to-life conflict compared with their young and male counterparts because most of them have heavy family responsibilities. Therefore, future studies must balance the age and gender interval when collecting their data. The findings of these studies must also be compared with ours to present a holistic or highly robust view on the BYOD phenomenon.

Last, all our independent variables only explained over 30% of the variance in work-to-life conflict. Similar to other researchers, we want to explore more factors that influence work-to-life conflict as an important work-family relationship variable. Additional theories must also be devised to facilitate the hypothesis development in our research context.

Ⅹ. Conclusion

With the increasing usage of mobile devices, employees often find themselves inhabiting multiple worlds and fulfilling multiple roles simultaneously. Therefore, how to manage the relationship between work and life has become a major challenge for most of modern employees. BYOD attempts to merge the personal and business usage of mobile devices and presents an inevitable future trend for most companies. This research uses BYOD as a background context, identifies the unique attributes of BYOD, and explores the relationship between BYOD attributes and work-to-life conflict. As a major con-

tribution of our work, we introduce the concept of workplace connectivity in our research framework and confirm its unique contribution in explaining work-to-life conflict. We use boundary theory to explain several hypothesized relationships between BYOD attributes and their outcomes. Some positive findings from our work can encourage BYOD policy makers to continue or revise their current BYOD policies, as both WCBA and flexibility will not be related/positively related to work overload. However, our findings fail to shed light on the negative consequences (e.g., work overload and work-to-life conflict) of WCBA. We hope that our work can provide researchers and practitioners with some clues in investigating the special characteristics and influences of BYOD.

<References>

[1] Ahuja, M. K., Chudoba, K. M., Kacmar, C. J., McKnight, D. H., and George, J. F. (2007). IT road warriors: Balancing work-family conflict, job autonomy, and work overload to mitigate turnover intentions. *MIS Quarterly*, *31*(1), 1-17.

[2] Anderson, S. E., Coffey, B. S., and Byerly, R. T. (2002). Formal organizational initiatives and informal workplace practices: Links to work-family conflict and job-related outcomes. *Journal of Management*, *28*(6), 787-810. https://doi.org/10.1016/S0149-2063(02)00190-3

[3] Anderson, J. C., and Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411-423. https://doi.org/10.1037/0033-2909.103.3.411

[4] Ayyagari, R., Grover, V., and Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS Quarterly*, *35*(4), 831-858.

[5] Bateman, T. S. (1981). Work overload. *Business Horizons*, *24*(5), 23-27. https://doi.org/10.1016/S0007-6813(81)80022-5

[6] Batt, R., and Valcour, P. M. (2003). Human resources practices as predictors of work-family outcomes and employee turnover. *Industrial Relations: A journal of Economy and Society*, *42*(2), 189-220. https://doi.org/10.1111/1468-232X.00287

[7] Bloom, N., Liang, J., Roberts, J., and Ying, Z. J. (2015). Does working from home work? Evidence from a Chinese experiment. *The Quarterly Journal of Economics*, *130*(1), 165-218. https://doi.org/10.1093/qje/qju032

[8] Boles, J. S., Howard, W. G., and Donofrio, H. H. (2001). An investigation into the inter-relationships of work-family conflict, family-work conflict and work satisfaction. *Journal of Managerial Issues*, *13* (3), 376-390.

[9] Boswell, W. R., and Olson-Buchanan, J. B. (2007). The use of communication technologies after hours: The role of work attitudes and work-life conflict. *Journal of Management*, *33*(4), 592-610. https://doi.org/10.1177/0149206307302552

[10] Carmines, E. G., and Zeller, R. A. (1979). *Reliability and Validity Assessment*. Thousand Oaks, CA: Sage Publications, Inc.

[11] Chen A., and Casterella G. I. (2019). After-hours work connectivity: Technological antecedents and implications. *IEEE Transactions on Professional Communication*, *62*(1), 75-93. https://doi.org/10.1109/TPC.2018.2867129

[12] Chin, W. W. (1998). Issues and opinions on structural equation modeling. *MIS Quarterly*, *21*(1), 7-16.

[13] Chin, W. W., and Gopal, A. (1995). Adoption intention in GSS: Relative importance of beliefs. *Database Advances*, *26*(2-3), 42-64. https://doi.org/10.1145/217278.217285

[14] Choudhury, P., Foroughi, C., and Larson, B. (2021). Work-from-anywhere: The productivity effects of geographic flexibility. *Strategic Management Journal*, *42*, 655-683. https://doi.org/10.1002/smj.3251

[15] Clark, S. C. (2000). Work-family border theory: A new

theory of work/family balance. *Human Relations*, *53*(6), 747-770. https://doi.org/10.1177/0018726700536001

[16] Coenen, M., and Kok, R. A. W. (2014). Workplace flexibility and new product development performance: The role of telework and flexible work schedules. *European Management Journal*, *32*(4), 564-576. https://doi.org/10.1016/j.emj.2013.12.003

[17] Cousins, K., and Robey, D. (2015). Managing work-life boundaries with mobile technologies: An interpretive study of mobile work practices. *Information Technology & People*, *28*(1), 34-71. https://doi.org/10.1108/ITP-08-2013-0155

[18] Dell & Intel (2011). *The evolving workforce: expert insights*. Round Rock, Texas, USA.

[19] Dery, K., and MacCormick, J. (2012). Managing mobile technology: The shift from mobility to connectivity. *MIS Quarterly Executive*, *11*(4), 159-173.

[20] Deyan, G. (2020). 41 Stunning BYOD Statistics and Facts to Know in 2020, Retrieved from https://techjury.net/blog/byod/#gref

[21] Dillon, W. R., Madden, T. J., and Firtle, N. H. (1993). *Essentials of Marketing Research*. Boston: Irwin.

[22] Doargajudhur, M. S., and Dell, P. (2020). The effect of bring your own device (BYOD) adoption on work performance and motivation. *Journal of Computer Information Systems*, *60*(6), 518-529. https://doi.org/10.1080/08874417.2018.1543001

[23] Doargajudhur, M. S., and Hosanoo, Z. (2023). The mobile technological era: Insights into the consequences of constant connectivity of personal devices by knowledge workers. *Information Technology & People*, *36*(2), 701-733. https://doi.org/10.1108/ITP-08-2021-0593

[24] Fleck, R., Cox, A. L., and Robison, R. A. V. (2015). Balancing boundaries: Using multiple devices to manage work-life balance. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems*.

[25] Fonner, K. L., and Roloff, M. E. (2012). Testing the connectivity paradox: Linking teleworkers' communication media use to social presence, stress from interruptions, and organizational identification. *Communication Monographs*, *79*(2), 205-231. https://doi.org/10.1080/03637751.2012.673000

[26] Fornell, C., and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurements error. *Journal of Marketing Research*, *18*(1), 39-50. https://doi.org/10.1177/002224378101800104

[27] Franken, E., Bentley, T., Shafaei, A., Farr-Wharton, B., Onnis, L. A., and Omari, M. (2021). Forced flexibility and remote working: opportunities and challenges in the new normal. *Journal of Management & Organization*, *27*, 1131-1149. https://doi.org/10.1017/jmo.2021.40

[28] Gefen, D., Straub, D. W., and Boudreau, M. C. (2000). Structural equation modelling and regression: Guidelines for research practice. *Communications of the Association for Information Systems*, *4*(7), 1-70. https://doi.org/10.17705/1CAIS.00407

[29] Geurts, S. A. E., and Demerouti, E. (2003). Work/non-work interface: A review of theories and findings. In M. J. Schabracq, J. A. M. Winnubst, and C. L. Cooper (Eds.), *The Handbook of Work and Health Psychology* (pp. 279-312). New York: JohnWiley & Sons.

[30] Gökçe, K. G., and Dogerlioglu, O. (2019). Bring your own device policies: Perspectives of both employees and organizations. *Knowledge Management & E-Learning: An International Journal*, *11*(2), 233-246.

[31] Greenhaus, J. H., and Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, *10*(1), 76-88. https://doi.org/10.5465/amr.1985.4277352

[32] Grover, V. (2023). BYOD Trends in 2023: Its Influence in the Next 5 Years, Retrieved from https://blog.scalefusion.com/top-future-byod-trends-to-watch-out

[33] Hair, J. F., Anderson, R. E., Tatham, R. L., and Black, W. C. (1998). *Multivariate Data Analysis with Readings* (5th ed.). Englewood Cliffs, NJ: Prentice Hall.

[34] Hall, D. T., and Richter, J. (1988). Balancing work life and home life: What can organizations do to help? *Academy of Management Executive*, *2*(3), 213-223.

[35] Hill, E. J., Hawkins, A. J., Ferris, M., and Weitzman, M. (2001). Finding an extra day a week: The positive influence of perceived job flexibility on work and family life balance. *Family Relations*, *50*(1), 49-54.

[36] Hill, E. J., Erickson, J. J., and Holmes, E. K. (2010). Workplace flexibility, work hours, and work-life conflict: Finding an extra day or two. *Journal of Family Psychology*, *24*(3), 349-358. https://doi.org/:10.1037/a0019282

[37] Julien, M. (2007). *Finding Solutions to Work-Life Conflict: Examining Models of Control Over Work-Life Interface* (Ph. D. Desertation). Carleton University, Ottawa, Ontario, Canada.

[38] Kahn, R., Wolfe, D., Quinn, R., Snoek, J., and Rosentbal, R. (1964). *Organizational Stress: Studies in Role Conflict and Ambiguity*. New York: Wiley.

[39] Kirby, E. L., Wieland, S. M., and McBride, M. C. (2006). Work/life conflict. In J. G. Oetzel, and S. Ting-Toomey (Eds.), *The SAGE Handbook of Conflict Communication: Integrating Theory, Research, and Practice*, 327-359, Thousand Oaks, CA: Sage.

[40] Kinzer, K. (2022). *BYOD Business Benefits*, Retrieved from https://jumpcloud.com/blog/byod-business-benefits

[41] Köffer, S., Lea, A., Kevin, O., and Neihaves, B. (2015). The intensified blurring of boundaries between work and private life through IT consumerisation. *Proceedings of the European Conference of Information Systems 2015*.

[42] Lembrechts, L., Dekocker, V., Zanoni, P., and Pulignano, V. (2015). A study of the determinants of work-to-family conflict among hospital nurses in Belgium. *Journal of Nursing Management*, *23*(7), 898-909.

[43] Lyytinen, K., and Yoo, Y. (2002). Research commentary: The next wave of nomadic computing. *Information Systems Research*, *13*(4), 377-388. https://doi.org/10.1287/isre.13.4.377.75

[44] McLean, R. (2020). *These Companies Plan to Make Working from Home the New Normal*. As in Forever, Retrieved from https://edition.cnn.com/2020/05/22/tech/work-from-home-companies/index.html

[45] Moore, J. (2000). One road to turnover: An examination of work exhaustion in technology professionals. *MIS Quarterly*, *24*(1), 141-168.

[46] Nan, N. (2011). Capturing bottom-up information technology use processes: A complex adaptive systems model. *MIS Quarterly*, *35*(2), 505-532.

[47] Netemeyer, R. G., Brashear-Alejandro, T., and Boles, J. S. (2004). A cross-national model of job-related outcomes of work role and family role variables: A retail sales context. *Journal of the Academy of Marketing Science*, *32*(1), 49-60. https://doi.org/10.1177/0092070303259128

[48] Niehaves, B., Köffer, S., and Ortbach, K. (2012). IT consumerization: A theory and practice review. *Proceedings of the Eighteenth Americas Conference on Information Systems* (pp. 1-10). Seattle, Washington.

[49] Nippert-Eng, C. (1996). *Home and Work: Negotiating Boundaries through Everyday Life*. Chicago: University of Chicago Press.

[50] Nunnally, J. C. (1978). *Psychometric Theory* (2nd ed.). New York: McGraw-Hill.

[51] Payne, R. L. (2000). Climate and culture: How close can they get?" In N. M. Ashkenasy, C. P. M. Wilderom, M. F. Peterson (Eds.), *Handbook of Organizational Culture & Climate* (pp. 163-176). Thousand Oaks, CA: Sage.

[52] Rege, O. (2011). *Bring your own device: Dealing with trust and liability issues*, Retrieved from http://www.forbes.com/sites/ciocentral/2011/08/17/bring-your-own-device-dealing-with-trust-and-liability-issues

[53] Richardson, K. M., and Benbunan-Fich, R. (2011). Examining the antecedents of work connectivity behavior during non-work time. *Information and Organization*, *21*(3), 142-160.

[54] Richardson, K. M., and Thompson, C. A. (2012). High Tech Tethers and Work-family conflict: A conservation of resources approach. *Engineering Management Research*, *1*(1), 29-43.

[55] Ostermann, U., and Wiewiorra, L. (2016). Bring IT on (e)! Personal preferences and traits as influencing factors to participate in BYOD programs. *Proceedings of the 24th European Conference on Information Systems (ECIS)*.

[56] Sarker, S., Xiao, X., Sarker, S., and Ahuja, M. (2012). Managing employees' use of mobile technologies to minimize work-life balance impacts. *MIS Quarterly Executive*, *11*(4), 143-157.

[57] Skinner, N., and Pocock, B. (2010). Work, life, flexibility and workplace culture in Australia: Results of the 2008 Australian Work and Life Index (AWALI) survey.

Australian Bulletin of Labour, *36*(2), 133-153.

[58] Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological Methodology* (pp. 290-312). Washington DC: American Sociological Association.

[59] Stephens, K. K., Cho, J. K., and Ballard, D. I. (2012). Simultaneity, sequentially and speed: Organizational messages about multiple-task completion. *Human Communication Research*, *38*(1), 23-47. https://doi.org/10.1111/j.1468-2958.2011.01420.x

[60] Tarafdar, M. Tu, Q., Ragu-Nathan, B. S., and Ragu-Nathan, T. (2007). The impact of technostress on role stress and productivity. *Journal of Management Information Systems*, *24*(1), 301-328. https://doi.org/10.2753/MIS0742-1222240109

[61] Tejero, L. M. S., Seva, R. R., and Fadrilan-Camacho, V. F. F. (2021). Factors associated with work-life balance and productivity before and during work from home. *Journal of Occupational and Environmental Medicine*, *63*(12), 1065-1072. https://doi.org/10.1097/JOM.0000000000002377

[62] Tennakoon U. S. (2018). Crossing the work/life boundary with ICT: Moderating effect of ICT perception on the relationship between cross-domain ICT use and work/life conflict. *South Asian Journal of Human Resources Management*, *5*(2), 194-215. https://doi.org/10.1177/2322093718788712

[63] 360 Market Updates (2022). Global Bring-Your-Own Device (BYOD) industry research report, competitive landscape, market size, regional status and prospect, Retrieved from https://www.360marketupdates.com/global-bring-your-own-device-byod-industry-research-report-competitive-landscape-market-21404580

[64] Voydanoff, P. (2005). Work demands and work-to-family and family-to-work conflict: Direct and indirect relationships. *Journal of Family Issues*, *26*(6), 707-726.

[65] Wright, K. B., Abendschein, B., Wombacher, K., O'Connor, M., Hoffman, M., Dempsey, M., Krull, C., Dewes, A., and Shelton, A. (2014). Work-related communication technology use outside of regular work hours and work life conflict. *Management Communication Quarterly*, *28*(4), 507-530. https://doi.org/10.1177/0893318914533332

[66] Yang, X., Wang, X. W., Yue, W. T., Sia, C. L., and Luo, X. (2019). Security policy opt-in decisions in Bring-Your-Own-Device (BYOD) - A persuasion and cognitive elaboration perspective. *Journal of Organizational Computing and Electronic Commerce*, *29*(4), 274-293. https://doi.org/10.1080/10919392.2019.1639913

[67] Yang, Y., Yan, R., and Meng, Y. (2022). Can't disconnect even after-hours: How work connectivity behaviour after-hours affects employees' thriving at work and family. *Frontiers in Psychology*, *13*, 865776. https://doi.org/10.3389/fpsyg.2022.865776

[68] Yang, S., and Zheng, L. (2011). The paradox of de-coupling: A study of flexible work program and workers' productivity. *Social Science Research*, *40* (1), 299-311. https://doi.org/10.1016/j.ssresearch.2010.04.005

[69] Yao, S., Lu, J., Wang, H., Montgomery J. J. W., Gorny, T., and Ogbonnaya, C. (2023). Excessive technology use in the post-pandemic context: How work connectivity behavior increases procrastination at work. *Information Technology & People*, *ahead-of-print*. https://doi.org/10.1108/ITP-08-2022-0573

[70] Yun, H., Kettinger, W. J., and Lee. C. C. (2012). A new open door: The smartphone's impact on work-to-life conflict, stress, and resistance. *International Journal of Electronic Commerce*, *16* (4), 121-152. https://doi.org/10.2753/JEC1086-4415160405

[71] Zhang, J., and Liu, Y. (2011). Antecedents of work-family conflict: Review and prospect. *International Journal of Business and Management*, *6*(1), 89-103. https://doi.org/10.5539/ijbm.v6n1p89

[72] Zhang, S., Moeckel, R., Moreno, A. T., Shuai, B., and Gao, J. (2020). A work-life conflict perspective on telework. *Transportation Research Part A: Policy and Practice*, *141*, 51-68. https://doi.org/10.1016/j.tra.2020.09.007

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