

**THE INFLUENCE OF TECHNOLOGY ON WORK/NON-WORK
BALANCE**

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Abstract

The subject matter of this master thesis project is *work/non-work balance*. The emphasis is on technology, how technology is important player in everyday struggle to achieve work – life balance. The purpose is to explore to what extent organizations and employees actually use technology and what are the consequences of such technology use on work/non-work balance. It is very important for HR departments to understand the way how technology shapes people lives in order to develop further HR policies that will help them to achieve balance between work and life of their employees. Thus, the question of this master thesis is *to what extent employees perceive balance between work and non-work domains due to the availability and use of technology?*

The work is divided into three sections; first one is theoretical part that describes work and non-work domain, and their interface. Second section describes the methodology and results from a survey study, and last, third section contains discussion and conclusion of the results. According to the results, technology progress did change people lives in one way or another, thus, HR departments cannot neglect technology in HR policies.

Key words: employee well-being, work-family balance, conciliation, new technology

JEL Classification system: 015 Human Resources, M14 social responsibility

Abstrato

O tema do projecto desta tese de mestrado é o balanço entre o trabalho e fora do trabalho. O enfãse é feito sobre a tecnologia e como a tecnologia é importante na luta do dia-a-dia para atingir balanço entra a vida pessoal e a vida profissional. O propósito está em explorar o nível extensivo que as organizações e respectivos colaboradores, actualmente, usam a tecnologia e quais são as consequências do uso da mesma para balançar o trabalho e fora do contexto de trabalho. É muito importante que os departamentos de Recursos Humanos

entendam esta relação e como ela formata a vida das pessoas de modo a desenvolver novas políticas de RH que ajudarão os colaboradores a atingir balanço entre a sua vida pessoal e profissional. A principal questão que se impõe nesta pesquisa é: *até que níveis os colaboradores percebem o balanço entre o seu trabalho e fora do contexto de trabalho, devido à possibilidade de usar a tecnologia?*

O trabalho está dividido em três sectores; primeiro encontra-se a teoria que descreve o trabalho e fora do contexto de trabalho e a sua interface. No segundo sector descreve-se a metodologia e os resultados do questionário e estudo. No terceiro e ultimo sector desenvolve-se a discussão e conclusão dos resultados obtidos anteriormente. De acordo com os resultados, o progresso tecnológico realmente apresentou mudanças na vida das pessoas de uma maneira ou de outra, o que leva a crer que os departamentos de RH não podem negar a tecnologia como factor nas políticas de RH.

Palavras-chave: empregado bem-estar, equilíbrio entre trabalho e família, conciliação, nova tecnologia

Sistema de classificação JEL: 015 Recursos Humanos, M14 responsabilidade social

1. Context of the issue

Many employees struggle to achieve a balance between work and private life. The peace of life, working conditions and required constant presence in solving business tasks requires maximum commitment of each individual. It is of great importance for the individual to evaluate the situation and based on his possibilities to react adequately and decide what is most important at a given moment. Otherwise, lack of balance can trigger negative affect that directly reflects on individual business skills (e.g., lack of free time and inefficient time management) and, in turn, decreases creativity and job performance. Moreover, lack of balance has been associated to higher level of stress overtime, which has a negative impact on individual well-being. Therefore, during the last years, work/non-work has gained importance due its relevant consequences for organizations' productivity and individuals' well-being (e.g., Frone, 2003; Geurts & Demerouti, 2003).

In that sense, the subject matter of this master thesis project is *work/non-work balance*. Work/non-work domains interface is a complex phenomenon that cannot be avoided or stopped, but it can be controlled and directed in positive way. As one of many tools technology can help putting work and non-work domain in balance if it is used properly. There are many gadgets, devices and online systems that allow employees to perform outside office, promoting work/non-work balance by offering more flexibility. In contrast, technology can be a cause of conflict instead of enrichment, making the boundaries between work and non-work domains very blurry. Technology can become our ally or enemy, depends how we use it and how it is used on us. Thus, considering that nowadays technology is extremely developed compared to previous years, the research question that drives this thesis is to *what extent employees perceive balance between work and non-work domains due to the availability and use of technology*.

-In other words, the focus of this master thesis project will be to explore to what extent organizations and employees actually use technology and its impact on work/non-work balance. Answering such research question is important to develop further HR policies aimed at balancing work and non-work. As Gossen and Anderson (1996) pointed out, there is a huge difference between the level of technology progress and the level of technology that organizations are using in order to achieve balance between work and non-work domain

among their employees. Indeed, logically the level of technology used is under the level of technology progress, which comes to the conclusion that there is still a lot of space for organizations to improve their HR strategies based on technology.

Based on such assumption, I divided my work into three main sections. First, I introduce a theoretical part in which work domain and non-work (also called life or family) domain will be described in order to better understand not only them as separated domains, but also their interface. Their interface is very important to understand how both domains interact and explain positive and negative consequences that may occur from such interference. After understanding how work interferes with non-work domain and opposite, I will introduce technology as a double-sword tool that can cause either conflict or enrichment between domains. This theoretical section will conclude with the conceptual framework of this thesis, in which work/non-work interface is connected with the use of technology in organizations. As mentioned above, the focus of this master thesis project will be to realize to what extent organizations and employees actually use technology and its impact on work/non-work balance.

As a consequence, the second section of this thesis describes the methodology and results from a survey study conducted in Croatia in order to answer such research question. In particular, I introduce the research question and specific hypotheses of this project, then I explain the design of the study and the procedure followed to gather data (with special emphasis in technologies that are available to use and technologies that organizations are actually using). This section ends with an explanation of the statistical analyses conducted and a report of the results derived from such analyses.

Finally, I discuss the results of the study, taking into consideration its limitations and implications. In turn, conclusions show the relevance of analyzing how availability and use of new technologies are affecting balance perceptions in order to improve further HR policies.

2. Literature review and conceptual framework

The term *work – life balance* emerged for the first time in early 70s. It expressed the balance between work and private life of the individual. The balance can be analyzed through a number of objective and subjective indicators. For example, research conducted in the 70s and 80s is focused on how activity at work and at home does not come into conflict with each other, and when one person can work in one field with no negative impact on another field. However, nowadays, those two fields exist side by side in everyday life, but in certain areas separated by time, place and function. In that sense it is important to understand that each field is formed by social roles or norms and directives that define the behavior of persons in a social system as a function of their status or position (e.g., worker, husband/wife, and soldier).

According to Frone (2003), social roles are described as important factor that helps to define who we are, what we do, how and with whom we interact, what we think about, and how we feel about things. Moreover, social roles, as a socially expected behavior pattern associated with an individual's function in various social groups, structure our use of time and our physical location, playing a crucial function in the lives of all individuals. Frone highlighted that every life domain has few social roles in which an individual should display a pattern of behavior developed in response to the demands or expectations of others; the pattern of responses to the persons with whom an individual interacts in a particular situation or life domain. To make it more understandable, in work domain social role does not consist just on being present in the office. Social role depends on our status or position because as a manager one individual performs different activities than normal employees. Managers interact with different people, think differently, and have different responsibility and different functions in an organization than their colleagues. Therefore, there are “normal employee social role” and “manager social role”. Furthermore, although normally their occupation differs, at the end both of them can be part of “Union representative”, which is another social role in work domain. In that sense, considering that social roles are crucial in providing meaning and structure in people’s life “any imbalance between social roles may be an important stressor that can influence outcomes in the affected life domain” (Frone, 2003: p. 143).

Among life domains, researchers have focused on work and family domains. In this regard, while work can be easily define as a set of activities and tasks that an individual performs while occupying a position in an organization (Geurts & Demerouti, 2003), work domain is more difficult to define since comprises several social roles. Indeed, work can be just one social role inside work domain. In addition, nowadays a lot of things have changed referring to work, making work domain interfering with non-work domain (or with people's private lives). Indeed, researchers have tried to define the concept of *non-work domain* primarily attending to the *family domain*. As Frone (2003) suggested, the relationship between work and family is much stronger than relationship between work and any other social role (e.g., community role or student role). Changes inside family role like divorce, death of a family member, childbirth, does affect more work domain than changes in any other social role. For that reason little empirical research exists on the relation between work and specific non-work roles other than family, simply researchers are more focused on family social role than on any other.

Following the implicit agreement of using non-work and family domains as interchangeably, Geurts and Demerouti (2003) indicated that non-work domain may refer to activities and responsibilities within the family domain, as well as to activities and obligations beyond one's own family situation. It *may* refer, but not necessarily, to other social roles beyond such carry out within own family situation. Thus, they maintain the focus of non-work domain on the activities related to the family domain. Moreover, they argued that non-work domain cannot be exclusively placed into the context of "leisure" and "pleasure" as other sociologists proposed. In that sense, these authors accepted Kabanoff's opinion (1980), who argued that non-work domain involves activities within and beyond the family domain that cannot be simply considered leisure because they involve similar to work domain obligations and responsibilities, such as: household activities, care-giving responsibilities, and social obligations; however, it is normal that every individual has needs for cultural life (e.g., leisure and pleasure) beside those activities.

Moreover, as work and non-work domains are interrelated instead of separated domains, imbalance between social roles in one domain may have side effect on other domain (see Figure 1). For example, nowadays in almost every country there is a growing number of people working overtime, working on Sunday, doing shift work or "nine-to-five" work. Accepting overtime (amount of time someone works beyond normal working hours), individual shows his willingness and commitment to his work and tasks that has been given to

him. For example, Evan Robinson (2012), engineer in the field of productivity, boosted by the fact “most employees think that time spent at work is measurement for productivity and success”, pointed out that “Overtime could have positive outcome if employees work overtime periodically and in short periods, otherwise it could have opposite effect”. True, overtime gives us more money at the end of the month which can be presented as one of the positive outcomes, but if individual overdo with overtime, tiredness, impaired concentration or stress, are very likely to occur. As a result, it will not affect just work domain but also non-work domain.

Focusing on the case of Croatia, magazine “Direktor” together with the consulting firm “Proago” conducted a research on overtime. Results show that 83% of employees in Croatia work overtime everyday or every second day, although only 16% of them are paid for overtime. With no doubt, overtime can result in progress for the organization, but on the other side working overtime and not being paid for it can also seriously affect work domain in negative way, workers most likely get on the close edge of burnout. Indeed, overtime work is closely connected with individual’s satisfaction (Shields & Ward, 2001). Those are important facts that define work, work domain and at the end affect non-work domain even though at first employees are not even aware of it.

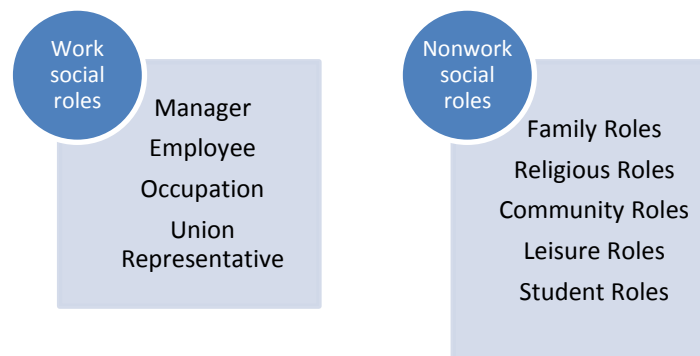


Figure 1: Work and non-work social roles

In addition, not only work domain affects non-work domain as mentioned above but there are also things that occur in non-work domain that affect work domain. For example, as work can be brought home, problems and obligations from personal life can be brought to work too. The growing number of women working is a very important structural change for

the family that caused higher interrelation between family and work. Nowadays both spouses need to take responsibilities for childcare or eldercare. There are more dual-earner than single-earner families. People are getting divorced more often, and life expectancy is increased. Non-work domain involves activities that are obligated to do or imposed by the society, while on the other side, work domain provides employees freedom of choice by accepting work as another obligation or simply and unfortunately being unemployed. Of course, no one's interest is to be unemployed, so everyone struggle with everyday life trying to harmonize private life with work and opposite. Thus, it is not surprising that organizations have recognized the problem that work/non-work interface can cause, and are implementing different strategies oriented on promoting work-life balance. In fact, HR departments are trying to bring personal activities into the workplace by different kind of benefits, but in return work obligations are also taken home. This interrelation practically erased boundaries between work and non-work domain.

In sum, based on the assumption that work and non-work are highly interrelated, experiences and decisions made by individual in one domain will definitely influence other domain (McMillan, Morris, & Atchley, 2011). It is very likely that obligations and responsibilities given at work will somehow affect individual's private life whether he like it or not, and the other way around. Therefore, Frone, Yardley and Markel (1997) preferred to use other terms instead of work/non-work domains like spillover, interference and tension, which describe better the relation between both domains because it becomes obviously that those two domains cannot be studied separately.

Work/non-work interface

Despite that the earliest hypothesis, segregation, denied existence of any relationship between work and private life domains, nowadays it is assumed that there is some kind of relationship between them. As McMillan et al (2011) claimed, work/non-work interface must be understood in order to design interventions for addressing issues that such interface may cause. Indeed, regardless to personal characteristics (e.g., gender, age, occupation, race,

education level or job status), work/life interface issues impact everyone. That is sufficient reason why HRD should give importance to work/life interface and their concepts.

In that sense, according to McMillan et al. (2011), there are three work/non-work interface concepts very important for HRD: conflict, enrichment, and balance. Each of them describes different relationship between domains.

Work/non-work conflict

According to Frone (2003; p. 145), the most widely cited definition of work/non-work conflict is the one written by Greenhouse and Beutell (1985; p. 77), which states that “work/non-work conflict is a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect”. That is, participation in the work (family) role is made more difficult by virtue of participation in the family (work) role. Nowadays, after more than 20 years of research, additional studies expanded the definition to include conflict that occurs when one role interferes with an individual’s effectiveness in the other role (Greenhouse, Allen, & Spector, 2006). Other authors also have pointed out that this definition implies a bidirectional dimension: work can interfere with family, causing work – to – non-work conflict, and family can interfere with work, causing non-work – to – work conflict (Frone, 2003; McMillan et al, 2011).

Three different types of conflict have been identified in the literature (for a review, see McMillan et al., 2011): time-based, strain-based, and behavioral-based. According to McMillan (2011), time-based conflict occurs when (a) spending an specific amount of time in one role requires deducting such amount of time available for other role, and/or when (b) dysfunction in one role is due to, despite the individual’s physical presence, preoccupations with the other role. For example, work-related time conflict will occur when someone is working shiftwork and overtime. In that way, the amount of time spent on commuting and work-travel will detract time that could be spent on family or friends. According to bidirectional dimension, family-related time conflict is also possible. For example, being late for work, or leaving the work place before office hours are over, in order to carry out some personal obligations can cause family-related time conflict.

Strain-related conflict occurs when the strain (or stressor) felt in one role make it difficult to perform in the other role. Work-related strain is related to “stressful events at work or job burnout that results in fatigue or depression in the family role” (McMillan et al., 2011; p. 9); whereas family-based strain conflict primarily occurs when stress arising from family expectations is transferred to work.

Finally, behavioral-based conflict occurs “when the behaviors required in one role are incompatible with the behaviors required in the other role” (McMillan et al., 2011; p. 10). An example of this type of conflict is “when one has difficulties in combining a professional, rational and business-like attitude at work with a personal, more open and sensitive attitude at home” (Geurts & Demerouti, 2003; p. 284).

Work/non-work enrichment

Different constructs have been introduced in the literature to describe diverse aspects of positive work/non-work interface, such as: enrichment, integration, enhancement, and facilitation. Although each one is introduced below, the constructs are more alike than they are different in both their definition and theoretical bases (McMillan et al., 2011).

Moreover, we agree with Frone’s theory that all those constructs are synonyms for positive side of work/non-work interface. However, in contrast with Frone’s decision to name it as facilitation, in this work positive side of work/non-work interface will be named as enrichment.

In that sense, Greenhouse and Powell (2006) defined *enrichment* as the extent to which experiences in one role improve the quality of life in the other role. According to Carlson et al. (2006) “enrichment occurs through one of two paths: (a) the instrumental path, where resources gains in one role directly increase performance in the other role; and (b) the affect path, where gains in one role indirectly increase performance in the other role due to overall improvements in the individual’s positive affect” (cf., McMillan et al., 2011; p. 11). Noteworthy, Carlson’s enrichment is composed of four types of gains; (a) developmental (e.g., acquisition of knowledge, skills, perspectives, or values); (b) affective (e.g., changes in

behavior and/or attitudes); (c) capital (e.g., acquisition of assets); and (d) efficiency gain (e.g., development of an increased focus level; McMillan et al., 2011).

Similarly, *integration* occurs when attitudes in one role positively spill over into another role, or when experiences in one role serve as resources that enrich another role in one's life; *enhancement* occurs when one role increases energy and attitude, and contributes to the development of skills in the other role; and *facilitation* refers to the extent to which an individual's engagement in one life domain provides gains (e.g., developmental, affective, capital, or efficiency) which contribute to enhance functioning of another life domain (see McMillan et al., 2011).

Despite negative consequences and outcomes of work/non-work interface that work/non-work conflict provides, enrichment has the potential to describe more positive qualities, connections, and benefits gained from work/non-work interface.

As with work/non-work conflict, enrichment is also a bidirectional dimension where work can enrich family life and family life can enrich work life. However, "in contrast to work/non-work conflict, much less research has been focused on prevalence, predictors, and outcomes of work/non-work enrichment" (Frone, 2003; p. 145).

Interaction between conflict and enrichment: balance and cross-domain effects

According to Frone (2003) conflict and facilitation (Frone's synonym for enrichment) are two components of work/non-work balance. He claims that "balance occurs when there is a lack of conflict or interference between work and family roles" (p. 145). Thus, balance is defined as absence of conflict between the work and life domain: low level of interrole conflict and high level of interrole facilitation represent work/non-work balance.

In contrast, authors like Greenhouse et al. (2003; p. 513) defined balance as "the extent to which individuals are equally engaged in and equally satisfied with work and family roles". Based on this definition there are three components of balance: time balance, involvement balance, and satisfaction balance. The time balance means that time is divided equally between work and life domain, the involvement balance means that individual has equal

psychological involvement in both domains, and satisfaction balance means that there is equal satisfaction gained from both domains (McMillan et al., 2011).

However, work/non-work conflict and enrichment are bidirectional: work can interfere (enrich or conflict) with non-work and non-work can interfere (enrich or conflict) with work (Frone, 2003). This bidirectional relationship between domains is also known as cross-domain effect, which leads to four possible different relations between work and non-work domains (see Figure 2):

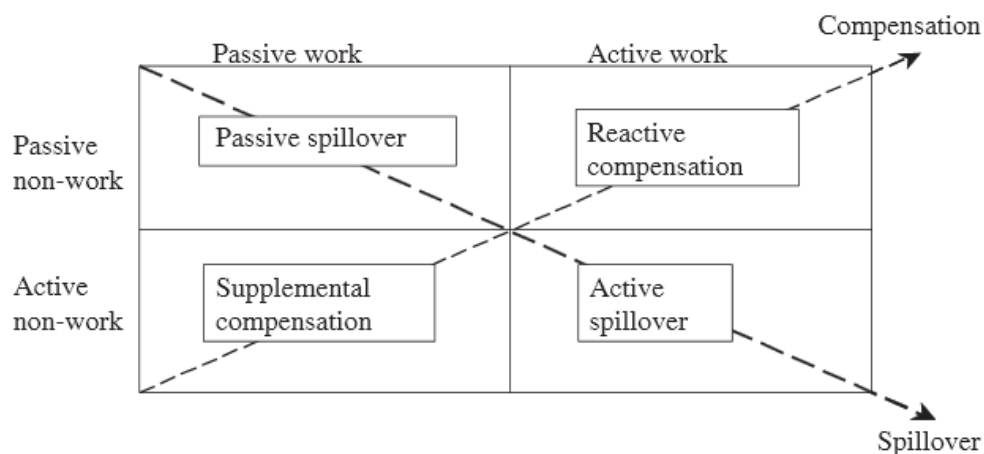


Figure 2: A model of four work, non-work patterns based on Kabanoff

These four relations indicate that interface between work and non-work is a dynamic and complex interface that includes cognitive, affective, social and behavioral dimensions of each dimension (Friedman & Greenhouse, 2000; McMillan et al., 2011). For example if individual has high level of skill utilization and high level of social interaction at work, it is considered that his work domain is positive or active. In opposite it is marked as negative or passive. Similarly, non-work can be positive (active) or negative (passive) in terms of cognitive, affective, social and behavioral dimensions, leading to the four possible interactions between domains:

- *Work positive/non-work positive, active spillover.* This first relation characterizes high level of all dimensions in both domains. Relation with positive work domain and positive non-work domain is also known as active spillover (Kabanoff, 1980). According to Kabanoff and O'Brien (1980) active spillover was predominantly found among intrinsically motivated workers with a relatively high education and income.

- *Work positive/non-work negative, reactive compensation.* Second relation characterizes high level of dimensions in work domain and low level of dimensions in non-work domain. Relation with positive work domain and negative non-work domain is also known as reactive compensation (Kabanoff, 1980). According to Kabanoff and O'Brien (1980) reactive compensation was found among extrinsically motivated predominantly male workers.
- *Work negative/non-work positive, supplemental compensation.* Third relation characterizes low level of dimensions in work domain and high level of dimension in non-work domain, or in other words relation with negative work domain and positive non-work domain is also known as supplemental compensation. According to Kabanoff and O'Brien (1980) supplemental compensation was found among older females with a low income.
- *Work negative/non-work negative, passive spillover.* And last, fourth relation characterizes low level of dimensions in both domains, or in other words negative work and non-work domain. According to Kabanoff (1980) this relation is also known as passive spillover and it was found among extrinsically motivated males with low income and low education (Geurts, & Demerouti, 2003; p. 283).

Work and non-work interface: The role of technology

In the '60 and the '70, with IT revolution going on, there was a belief that technology would reverse the ratio of work and leisure time, that is, employees would be able to spend less time working because there would be less work to do (Bardoel, 2012). The assumption "*there will be less work to do*" is certainly wrong; however, saying that people will need less time for same amount of work would be more precise. The issue is that the time save to perform the same amount of tasks has been replaced for new tasks. Thus, at the end, technology has helped to perform a higher amount of tasks in the same period of working time instead of helping workers to focus their attention to other aspect of their lives (e.g., more time for leisure activities). Thus, it seems clear that new technologies and communication services can help us become more efficient and productive at work; however, there is still the question about how technology can improve work-life balance.

In that sense, some authors indicated that technology can provide flexibility for doing your tasks, and no anymore is necessary to have fixed working schedules (MIT Sloan, 2005). Thus, workers can choose when and where to perform their tasks because nowadays smart-phones, tablets, tiny laptops and widespread wireless zones make it possible for us to stay in touch with work 24/7.

On the other hand, with technology enabling us to work anywhere, anytime, our personal time often gets eaten up by professional demands (MIT Sloan, 2005). Probably you are not the only one if you feel like you are taking the office with you every time you set out for some personal time. In this regard, a research conducted in Motion, a manufacturer of popular smart-phone BlackBerry, reports that people are able to work 250 hours more per year thanks to BlackBerry since they can now deal with simple tasks while working outside the office. Should we say “Thank you BlackBerry!” or what? In other words, one may ask: Is technology our ally or our enemy to balance work/non-work?

An illustrative example of how technology can be an ally or an enemy for balancing work and non-work domains is given by Mike Griffin, CFO of the Shared Insights (USA). In an interview for the MIT Sloan magazine (2005), he briefly explained how technology may be an ally but can become enemy over the night. According to his experience, in early 90s employees were allowed to set their own schedules considering the fact that every employee was outfitted with mobile devices that allows him to work anywhere, anytime. At first, company management saw an increase in workers’ efficiency and job satisfaction. However, over the time some managers began to think that capability to work anytime and anywhere meant that peoples are always available. Soon employees found that the very same devices that enable them to work more efficient and more flexibly can also throw their lives dangerously out of balance. Employees realized that technology-enabled flexibility comes with a price. As Griffin says, “employees with continuous, remote access to their workplace often find themselves “on call”, expected to respond employer and coworkers immediately”. Once people fit in these extra hours of work, opportunities to use the same hours for leisure activities, rest, or family interaction are lost, and suddenly work day is extended significantly.

In that sense, there is no denying that new technologies and communication services can help us be more efficient and productive. But information overload should be also recognized. With a BlackBerry or Iphone in your pocket, an instantaneous response is often expected and you may feel the burden of having the smart-phone with you while you are on

vacation. For example, Yun et al. (2012) showed that an increased work overload due to smart-phone use results in greater work-to-life conflict; however, productivity gained due to smart-phone use can reduce work overload. Who will decide which path will be taken? Will utilization of new technologies be main cause of increased work overload, or it will be used as a tool to help reduce work overload?

To better understand side effects of new technology utilization, it is necessary to introduce Role Theory. (cf., Yun et al., 2012) According to this theory, people will most likely face conflicts when their work environment blurs boundaries between work and private life. Two attributes can help blur boundaries between work and private life, job flexibility and productivity. However, there is no direct impact of these attributes on work-life conflict. According to Yun et al. (2012), flexibility and productivity affect work-life conflict only by the mediation of work overload. If work overload occur it will have direct impact on work-life conflict.

In their study, they are focused on job flexibility which is centered on the location and the timing flexibility of work. In other words, organizations can contact employees whenever and wherever they are located. Exploiting the availability, organizations are able to increase employees' workload. For example, nowadays when you leave the office probably in less than one hour you will receive an email on which, most likely, you will reply on. In that way, exploiting the flexibility mobile device provides, you are accepting extra work outside office hours. Thus, taking care of your work obligations and activities outside your office hours you will definitely increase your workload, which, in turn will have a negative spillover effect. In opposite, if you manage to control your flexibility not increasing workload, congratulation, enjoy your leisure time.

Same thing happens with other attribute, productivity. Increased productivity can become a double-edged sword in terms of employees' workload and work-life balance (Yun et al., 2012). Nowadays all mobile devices, unlike those one of the past, have increasing connectivity and computing power. You are able to send and receive company email, communicate via instant messaging software and access organization portals and other groupware systems based on wireless network. You can now perform many decision-making, administrative, and communication task to complete job-related assignments through personal mobile devices (e.g., smart-phone, tablet and laptop) whenever and wherever you want. In one way, use of technology is expected to increase employee productivity and operational

efficiency and improve organizational flexibility. However, as stated above, increased productivity can become a double-edged sword. Increased productivity in terms of work quality may actually decrease workload. Logically, if you manage to complete same tasks in less time, workload will decrease. But unfortunately, nowadays you will probably get more tasks to complete in same time and in this situation productivity will definitely increase workload. Same spillover effect happens here, increased productivity will increase workload and at the end negatively affect work-life balance, or in other word work-life conflict will occur.

As flexibility and productivity are attributes that can have positive and negative spillover effect on work-life balance, actually work overload is the enemy we get using technology. If flexibility and productivity cause work overload, it will definitely have negative spillover effect on work-life balance. The main cause of work overload existence is dual use of mobile devices, because mobile devices are those who provide us flexibility and productivity. The dual use (work and non-work use) of mobile devices has resulted in merger of work and personal life (Yun et al., 2012). For example, if you are using your personal smart-phone for work purposes also, you cannot avoid or disconnect you from receiving company email. This can cause a situation in which “we are all wired and we are all tired”, and employees perceive greater work overload than before using their smart-phones for work purposes (Yun et al., 2012).

On the other hand, the flexibility and productivity provided by technology, in case it does not increase work overload, can definitely have a positive spillover effect on work-life balance. Obviously flexibility and productivity can be controlled, by organizational culture or by employees itself. Many employees are consequently discovering the advantages of using technology to work from home. They feel they can be more efficient and productive without the distractions of the office, or by working whenever they feel they are most effective. If applied creatively and appropriately, the very same technology that was presented as an enemy can be used to legitimate people’s personal, life needs. However, it is very important to draw the line between personal life and work in order to keep work and life in balance. Employee’s personal lives should be supported by the organization, because that support only benefits what they bring to their work. Organizational culture should support segmentation of personal and work life valuing employee’s life and time. Research on creativity (MIT Sloan, 2005) has shown that people need time out from work, to think and to rest a little bit. If they

are not getting adequate time to do this, clearly their ability to be creative, innovative, and thoughtful suffers.

In sum, there is no sector of the economy that is immune from the influence of technology. Technology has changed the way people work and provides challenges for work-life balance, becoming a potential cause of conflict in such organizations that are using it in the way to make us slaves of technology. On the other hand, in current societies where work/non-work interface becomes more complicated, technology can be used as a tool to keep it simple and help reaching balance and in the best possible way enrichment at the same time that productivity and performance of employees is increased.

Research Question and Hypotheses

The question of this master thesis is *to what extent employees perceive balance between work and non-work domains due to the availability and use of technology?* In order to answer this question and based on the evidence mentioned above, it is important to notice that high tech products developed due to technology progress (e.g., mobile devices, internet applications, social networks, endless wireless zones) have changed people lives in one way or another.

Consequently, it is obvious that mobile devices combined with latest applications have opened a new door for business organizations. Nowadays, organizations are using technology to make employees available 24/7, or to improve their private life hoping it will have positive spillover effect on work performance. Anyway, organizations are those who will certainly have benefits because of technology utilization. But do they exploit the maximum of it? How much they actually utilize technology available on the market? Do they allow their employees to use technology while they are working in order to be more flexible and productive?

In other words, work/non-work policies will help the balance between work and non/work domain as well as will facilitate psychological detachment from work during leisure time. However, such relationship will be affected by the availability and the use of new technology, in positive and negative way. Those new technologies can be used by

organization in several ways; to provide employees flexibility and productivity in order to increase work load and in that way negatively affect work-life balance, or to provide flexibility and productivity in order to decrease work load and in that way positively affect work-life balance.

However, I hypothesize that availability and use of new technologies to perform task out of work will negatively affect work/non-work balance as well as will decrease psychological detachment from work. In addition, as Yun et al. (2012) showed, work overload due to 24/7 availability blurs boundaries between work and private life, mediating the relationship between technology and work/non-work balance (see Figure 3).

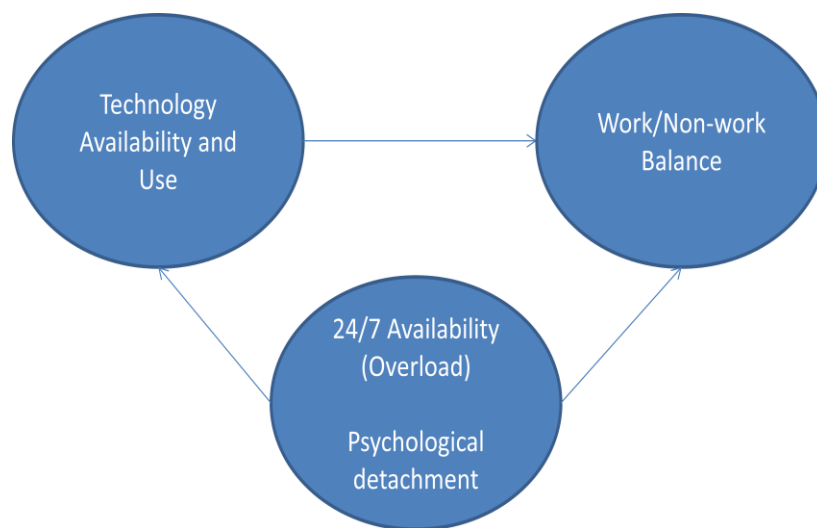


Figure 3. Model proposed in this master thesis.

Therefore, the following hypotheses will be tested:

Hypothesis 1: Availability and use of new technologies to perform task out of work will negatively affect work/non-work balance.

Hypothesis 2: Availability and use of new technologies to perform task out of work will decrease psychological detachment from work.

Hypothesis 3: Availability and use of new technologies to perform task out of work will increase overload (24/7 availability) due to technology.

Hypothesis 4: *Overload (24/7 availability) and psychological detachment will mediate the relationship between availability and use of new technologies and work/non-work balance.*

3. Methodology

In this section the methodology followed to test the hypotheses of this master thesis is described. First, I focus on the procedure to contact the organizations and gather data from their employees. Then, I describe the main characteristics of the participants. Finally, after mentioning the instruments used, the statistical analyses conducted and their derived results are presented.

Procedure and participants

An accidental sampling technique was followed in order to contact different Croatian organizations for participating in this study. Thus, a convenience sample of organizations were selected because their availability (having a contact person working in their HR department): a) a world's leading strategy consultancy company that has significant business activities in Croatia since 1997, serving market leaders in several industries; b) another organization that operates in telecommunication business providing fixed network telephony and online services, as well as mobile communication services; c) a leading Croatian hospitality management company with major presence in tourist regions; and d) one of the world's leading suppliers of cement and aggregates (crushed stone, sand and gravel), supplying ready-mix concrete and asphalt.

After achieving permission from HR directors to involve their employees into the study, organizations were sent e-mails with a link to the online questionnaire developed to gather data, which concerns about the use of new technology and the balance between work life and private life (see Annexes). Filling the questionnaire takes approximately 10 to 15 minutes and, as it was available online, the participants could fulfill it whenever they wanted and not necessarily during working hours.

Using this sampling technique implies that the researcher cannot make generalizations about the total population from this sample because it would not be representative enough;

however, is a very useful sampling technique for pilot testing. In that sense, considering the exploratory nature of the study and the differences between the organizations selected, this study focuses on such employees working on administrative positions (clerks). Unfortunately, organizations did not report the total number of employees working on such job positions; therefore it is not possible to establish the response rate in our study. In this regard, the questionnaire was published online in Google Drive (a file storage and synchronization service provided by Google, which enables cloud storage, file sharing and collaborative editing) on 1st of March 2013, and it was closed on 7th of April 2013. After that period, 91 valid responses were obtained. In the following Figure 4 you can see the number of daily responses for that period.

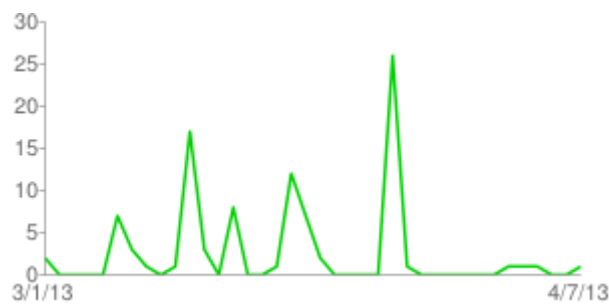


Figure 3: Number of daily responses

Regarding the participants, most of the participants have less than 5 years of work experience (70,3%), 14,3% have between 5 and 10 years, and the remained 15,4% have more than 10 years of work experience. Most of the participants work 5 days per week (74,2%), 7,8% work less than 5 days per week and 18% more than 5 days per week; with working schedules ranging between 8 and 10 hours per day (74,1%), 11,2% less than 8 hours and 14,7% more than 10 hours per day. Therefore, 49,5% reported having 2 hours or less time for leisure per day, 36,3% between 3 and 5 hours, and 14,3% more than 5 hours.

The gender of the sample is quite balanced, 42 participants out of 91, that is 46%, is male (see Figure 5). Their age ranged from 18 to 54 years old ($M = 27.54$; $SD = 6.26$). Regarding their marital status, 69.2% reported being not married or living together his/her partner, whereas the remained 30.8% reported being married or living together his/her partner (see Figure 6). From those who are married, the 92.8% reported that their partner is employed and 39% have children (see Figure 7).

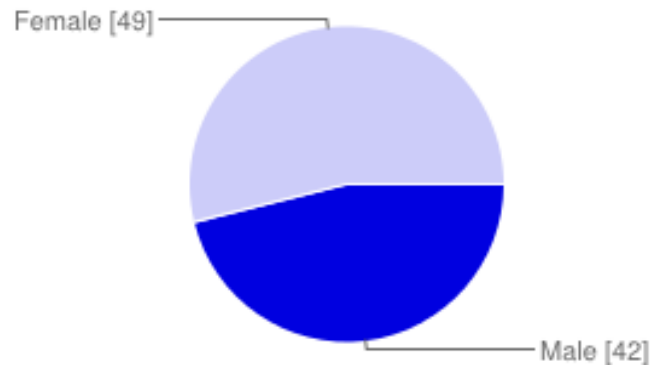


Figure 4: Gender percentage

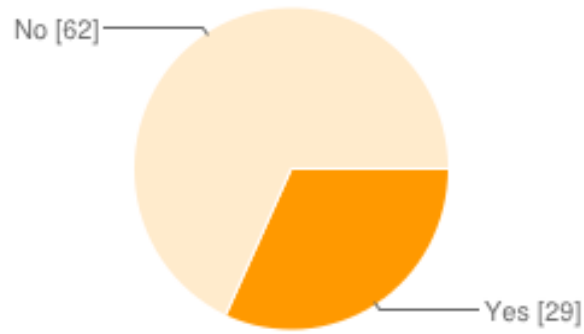


Figure 5: Marital status

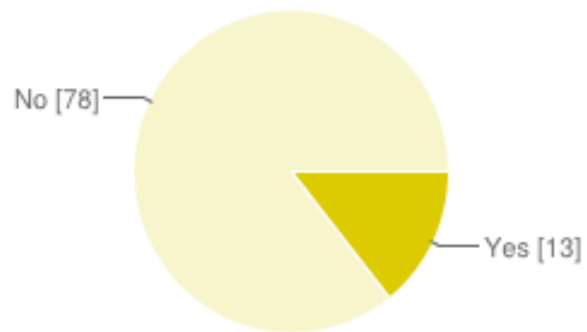


Figure 6: Children status

Measures

The questionnaire was composed by 5 different scales:

Socio-demographical variables.

Some socio-demographical variables were collected and treated as control variables in data analysis. In this study respondents need to give data about their gender, age, marital status, if they have children, work experience, average hours of work per day, and average hours of leisure time per day.

Technology availability and use.

This part focuses on getting data about technology utilization. This part will provide us data about availability and use of new technologies, to what extent employees are allowed to use new technology, and does organization they work for provides new technologies to their employees (e.g., mobile devices, software applications). For example, Skype can be used as a powerful tool to enable employee better communication and connection allowing him free video calls and data exchange all over the world. In this part of questionnaire, related to Skype, employees will provide us answers if they are using it for private or just for business purposes, or for both, further are they allowed to use such tool in their workplace, and are they familiar with the existence and availability of such technology at all. Beside Skype there are also other software technology included in the questionnaire such as Google Drive App, Dropbox, social networks (e.g. Facebook), and hardware technology such as smartphones, tablets and other portable devices.

Overload (24/7 availability).

Data collected in previous part will help us to understand why new technologies are associated with work-life balance (e.g., do you receive e-mails and business calls every day outside working hours?). In this part, on the scale form 1 (never) to 4 (always), employees are asked how often situation that can be potential start to get overloaded with work happens to them.

Work-private life balance.

Following Allen and Kiburz (2012), three items were selected to measure perceptions about work-family balance (e.g., “I experience a high level of work-life balance”). Participants indicated the level of balance between work and non-work domains according to a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Internal consistency of the scale was satisfactory (Cronbach’s alpha = .82).

Psychological detachment.

In everyday life psychological detachment from work is experienced as “switching off” and means leaving the workplace temporarily behind oneself in physical and in mental terms (Sonnentag et al., 2010). This variables was measured with four Likert-scale items (e.g., “During my non-work time, I forget about job”: Sonnentag & Fritz, 2007) that showed a good internal consistency (Cronbach’s alpha = .88).

Statistical Analysis and Results

The IBM statistical analysis package SPSS version 19 was used to analyze the gathered data. First, some descriptive analyses were performed. Then hypothesis were tested by means of hierarchical regression analysis and the “Process” macro provided by Hayes (2013).

Descriptive analyses

Regarding the availability of new technologies, 79.1% of the participants reported using smart-phones for performing their daily tasks (and the remained 20.9% indicated that

they do not need smart-phones for their work). Similarly, 86.8% reported using mobile devices such as laptops, tablets and other types of PCs. In the case of smart-phones, 50.5% indicated having one provided by his/her organization. This percentage rises up to 69.2% in the case of laptops (not including fixed PCs).

Social media (Facebook, Twitter) and internet calls (Skype, WhatsApp) are also quite extended during working hours. 68.1% of the participants indicated using such technologies during their working hours, including for private purposes. However, only 48.4% indicated that their organization allow using such services.

Online services for information/data storage and exchange (e.g., Box.net, ZumoDrive, Sugarsync, Google Drive, Dropbox) are used in less extent: 35.2% of the participants indicated that their organizations provide them such services, although 54.9% indicated that they use such services.

Finally, email accounts and diverse applications or web tools for data processing (e.g., Google apps) are used by most of the participants (81.3%), although only 50.5% of the participants reported that their organizations have provided them such tools (except for email account, which is typically provided by the organization: 82.4%).

In addition, participants indicated their perceptions about technologies and their role in work-private life balance. In that sense, 53.9% reported that mobile devices and internet technology can help achieving work-life balance; whereas 24.2% did not think so (22% considered new technologies as neutral). Moreover, 69.2% indicated that they can perform faster if they use new technologies (vs. 12.1% perceived new technologies as a barrier to their performance and 18.7% neutral).

In contrast, possible adverse of new technologies are: a) the fact that employers expect higher availability (or availability after working schedule) in their employees because of mobile devices and internet (57.2% vs. 25.3% that do not think that new technologies force them to be more available and 17.6% neutral). Furthermore, some participants reported feelings of being overloaded with work because of the availability that mobile devices and internet give to them (29.7% vs. 34.1% do not feel overloaded and 36.3% neutral).

Hypothesis testing

For testing the hypotheses of the study different hierarchical regression analyses were performed with the availability and use of different technologies (smartphones, laptops and tablets, social media applications, online data storage and exchange services, and online data processing webtools) as predictors and work-family balance and psychological detachment as dependent variables. In addition, socio-demographical were considered control variables. Thus, socio-demographics were introduced in the first step (control variables), the availability of each technology was introduced in the second step in order to estimate the variance explained by technology availability over and above socio-demographics. Similarly, technology use during non-work time to perform work tasks was introduced in the third step. All predictors were dichotomy variables (0 = technology non-available; 1 = technology available or 0 = technology non-used; 1 = technology used during non-work time, respectively).

In the case of work-family balance, results revealed that only the use of smartphones ($\beta = -.28$, $t(90) = -2.02$, $p < .05$) during non-work time were negatively associated with work-family perceptions. Thus, results suggest that using smartphones out working hours decreases work-family balance. Indeed, results from one-way ANOVA also supported this result, revealing that use of smartphones is associated with lower levels of work-life balance ($F(1, 89) = 4.79$; $p = .031$). Participants that indicated that their organizations provided them with smartphones reported lower levels of work-life balance ($M = 2.97$; $SD = .89$) than those participants who reported not having smartphones from their companies ($M = 3.36$; $SD = .78$), partially supporting hypothesis 1.

Regarding psychological detachment, results revealed that socio-demographics and availability of technologies were not associated to psychological detachment: whereas the use of online data storage ($\beta = -.26$, $t(90) = -2.04$, $p < .05$) and exchange services and the use of smartphones ($\beta = -.31$, $t(90) = -2.34$, $p < .05$) during non-work time were negatively associated with psychological detachment. Thus, results suggest that using such technologies decreases psychological detachment, partially supporting hypothesis 2 (see Table 1), explaining 27% of the variance.

In the case of overload, demographics were not associated to such variable, whereas the availability of technologies that include social media ($\beta = .35$, $t(90) = 2.26$, $p < .05$) and

online storage tools ($\beta = .33$, $t(90) = 1.91$, $p < .05$) are associated with higher levels of overload, explaining 25% of the variance. However, adding use of technology did not explain additional variance in a significant way. Thus, data partially supported hypotheses 3.

Table 1: *Hierarchical Regression Analysis with psychological detachment as criterion variable*

Predictors	Psychological detachment		
	Step 1 ^a	Step 2 ^a	Step 3 ^a
Age	-.03	-.04	-.03
Gender	-.29	-.39	-.40*
Married	.05	.12	.27
Children	-.11	-.15	-.18
Smarts_available	-	-.06	.31
Laptops_available	-	.29	-.22
Social_available	-	-.29	-.27
Storage available	-	-.24	-.48*
Webtools_available	-	-.09	.29
Smarts_use	-	-	-.69*
Laptops_use	-	-	.58
Social_use	-	-	-.35
Storage use	-	-	.60
Webtools_use	-	-	-.21
R^2	.08	.13	.27*
ΔR^2	-	.05	.14*

Note: ^aNon-standardized Betas; * $p < .05$; ** $p < .01$.

Finally, hypothesis 4 was tested by multiple linear regression analyses using a SPSS macro (Hayes, 2013). Such macro uses casual steps criteria for mediation forwarded by Baron and Kenny (1986) and bootstraps resampling results for the specific indirect (or mediated) effects through the Bias Corrected and Accelerated (BCa) estimates and 95% confidence intervals, a technique that is considered better to the normal theory Sobel tests since Type I error is less likely (see Hayes, 2013). Work-family balance was introduced as dependent

variable, technology availability and use as independent variable, and overload due technology (24/7 availability) and psychological detachment as mediators.

It is important to notice that technology availability and use was composed by the sum of the technologies that are both available and used out of work (ranging this variable from 0 = none of the technologies are both available and used, to 5 = all technologies are both available and used).

Although correlations were in the predicted way, results revealed no mediation effects of overload and psychological detachment on the relationship between technology and work-family balance, which did not support hypotheses 4.

4. Discussion and conclusion

The main focus of this study was to find out how technologies can affect our work-life balance. Providing productivity and flexibility technology can positively and negatively affect our work-life balance. Knowing that better productivity and higher flexibility can cause work overload employees will most probably have negative spillover effect on work-life balance while on the other side if with same level of productivity and flexibility work overload is not present, employees will have positive spillover effect on work-life balance (W-F balance).

-In this regard, results revealed that participants' perceptions about the possible consequences of new technology are also important: (a) First, the use of technologies such as online storage tools and smartphones out of work seem to decrease employees' psychological detachment from work and negatively affect their W-F balance; (b) Moreover, participants also perceived that they were 24/7 available (or experienced overload from technology) when storage (e.g., dropbox) and social media (e.g., whatsapp) are available out of work for performing work tasks, and (c) However, neither psychological detachment nor overload mediated the relationship between technology and balance.

The fact that technologies decrease psychological detachment and balance can be explained following work-life conflict theories. According to time-based conflict amount of time spent on work tasks after office hours takes away the amount of time available for private time. At first hour or two overtime will seem insignificantly, but latter on it can become a serious problem if work overload occurs. So, HR practices should find a way how to encourage employees not to use technology to extent that they become overloaded with work in their private time.

-According to the results of the research, it seems that availability of technology is not important in predicting balance and well-being; whereas the use of such technology will determine our perception of balance and well-being (psychological detachment). Particularly, the use of smart-phones is negatively associated with work-home balance. Moreover, the use of smart-phones and storage facilities is related to less psychological detachment. Knowing that technology utilization can lead to work overload which will definitely cause negative spillover effect on balance, psychological detachment from private life, lower satisfaction,

and burnout (see also Frone, 2003; Geurts & Demerouti, 2003), and therefore will definitely change employees' perception on use of technology and balance.

In addition, availability of some technologies out of work to perform your work tasks seems in our case to increase overload perception. As it is already mentioned several times, technology will definitely increase our flexibility and productivity, and it can cause two possible outcomes; work overload or decreased workload. According to participants' responses, one group of them sees technology as a way to perform faster and more efficient, while on the other side there is a group that sees technology as a main cause for being overloaded with work or available 24/7. The first group will probably accept technology as long as it does not cause work overload. On the other side, the other group may perceive technology as detrimental for them.

However, this latter group should not reject technology. They should take technology utilization into control. In that sense, Tom Stocky, a product marketing manager at "WZ" (*organization name is classified in order to prevent negative judgments of the same*), multinational corporation specialized in internet-related services and products, has a story that will show you how to take technology utilization into control (MIT Sloan, 2005, page 35). The dual use of smart-phone was presented before as a main cause for work overload that can negatively affect work-life balance. Tom decided not to accept BlackBerry when the company offered him one exactly for that reason. He likes to have a clear delineation between work and the rest of his life, and that was the first step to cut off emails from following him everywhere. He also tries to control demands on his time; if he needs to work on weekends, he will queue his emails to go out on Monday mornings so that he doesn't create the expectation that he will always be available on weekends. Setting limits for him is a winning combination how to be happier and more efficient in the long term.

Therefore, one of the implications of these results for HR policies is taking technology into control. If employees cannot control their utilization of technology, organizations should support such kind of policies. Having control over technology utilization negative spillover effect on work-life balance can be avoided.

Finally, different mechanisms can explain these results and buffer the negative association between use of technology and balance. In our case, contrary to previous findings (Yun et al., 2012), psychological detachment and overload did not play a mediating role on

the relationship between technology and balance. In that sense, the limitations of the study can help to explain such result.

Limitations and further studies

First limitation is the sample used in this study, which was a small non-representative sample from different organizations. Considering that 91 participants fulfilled the questionnaire, further studies should increase the number of participants to be more representative, and then more precise conclusions and result would be obtained. Furthermore, this study was conducted on employees of different organizations, some of them have some particularities that can affect the results. For example, one tourism organization is well known for shift-work and overtime, and such as organization differs from other types of organizations that were also part of the study like a consulting organization, which only by the nature of job, is known for work overload and younger employees. The point is that, although participation of diverse companies can help to generalize the results, the conclusions obtained in this study cannot be applied equally on both organizations. For example, as a result of this study older employees reported lower levels of burnout what was unexpected concerning the tourist organization. In consulting business younger people are more exposed to work overload and closer to burnout than others.

Second, the cross-sectional and self-reported nature of the data can introduce some bias in the results and do not allow researchers to infer causality. Thus, future studies should introduce time-series (also known as longitudinal data) and look at multiple sources of information (e.g., supervisors, partners, etc.) in order to ascertain change over the course of time.

Finally, further studies should incorporate other variables than can affect the relationship between technology and balance, such as: the segmentation culture and preferences, the type of job. For example, the segmentation culture is already mentioned before, described as a support provided by organizations in using new technologies to balance one's life (Yun et al., 2012). Depending on what preferences employee has; office work, or

telecommuting, and organizational culture that support employee's preferences, employee can easily detach work from private life, or harmonize work and private life as much as possible.

Practical recommendations

Although this study has some limitations (e.g., small non-representative sample from different organizations, cross-sectional data, self-reported measures) and further studies are needed in order to generalize the results, some implications for developing work-family balance policies based on technology availability and use can be enumerated.

For example, Yun et al. (2012) pointed out the necessity of strengthening a organizational culture that supports segmentation and employee's preferences of working from home office.

As technology is developing every day even more, mobile devices have increased the expectation of being available anytime, anywhere (Email, BlackBerry, iPhone, and laptops have increased people's ability to work from home and outside of regular hours), HR departments should work on adopting segmentation organizational culture that will support work-life balance in the way to educate employees how to use new technologies in order to increase flexibility and productivity.

Regarding organizational culture, it is important to notice that telecommuting would not be possible if required technology is not provided by the same organization. Supportive organizational culture as itself is worthless if new technologies are not used as a tool to achieve it. For example, just with smart-phone equipped with various applications (e.g., Skype, Dropbox, Google Drive) employees are able to retrieve critical information from the central office system and perform job assignments, scheduling, and many other tasks, including sending/receiving company email and files, outside the organization. Organization's obligation is to ensure such applications and to educate their employees how to use them in order to have maximal utilization. In case of telecommuting that kind of supportive culture is desirable.

However, on the other side with clear employees' preferences of segmenting work from private life organizational culture will not support technology utilization in proportion as in the previous situation. Instead of supporting employees to utilize technology whenever and wherever they want, some organizations are supporting their employees to shut down from technology world after regular office hours. According to the study made by Yun et al. 2012, authors claim that business organizations are those who can minimize negative effects of technology utilization promoting organizational culture that support segmentation of work and attempts to minimize work-to-life conflict and its consequences.

The best example is Volkswagen. Being aware of negative effect that new technology and communication services may cause, German company Volkswagen started new trend where they deactivate emails during non-work hours and employees can only receive email a half hour before and a half hour after office hours. In that way they are taking less hours of employee's leisure time allowing him to focus more on obligation and responsibilities from private life. As organizational business culture in Croatia is way behind German one, in Croatia this trend is still just a dream waiting to become reality. Mostly Croatian employers are taking advantage of the fact that almost everyone who carries a mobile device such as smart-phone, tablet or laptop, can deal with organizational duties at home or while traveling, as well as they are present in the office.

Thus, according to Linda Duxbury (2012) there are two different types of technology users. There were those who were called slaves to the technology. She described them as people who had high expectations and workloads, people who felt they need to work long hours and be available 24/7. Particularly, when they occupied high positions in their organization and were addicted to work. They also often worked for organizations where the culture drove this kind of use and it was not acceptable to say "no". The other type of people were moderate users of technology who used technology as a tool for both personal and work life and these people reported that technology increased their ability to manage their time and increase control of their lives (Bardoel, 2012). How can we decide who to become, a slave of technology or moderate user? Most likely that organizational culture will determine what type of technology user we become; however, in organizations with most rigorous organizational culture employees can become moderate users of technology.

Unfortunately not all organizations have organizational culture that supports segmentation of work and private life. Without a collective understanding of where

boundaries are set or of a work culture that support their non-work life, some users of new technologies are finding their own, individual ways to keep work from encroaching on their lives. In that case, you can use your connection to the office to create more time for your personal time. For example, using one of many applications available on the market you can divert several email accounts to your smart-phone, so you don't have to be present in the office in early mornings, and you can easily check your emails from home or on the way to work. Simply you can organize your mobile devices so you can be connected with the office all the time.

Let see an illustrative example. Meg O'Leary has full time job at "XY" (*organization name is classified in order to prevent negative judgments of the same*), an organization well known as one of the global leaders in consulting. Not even the organization but the job itself requires 24/7 availability from everyone who decide to do such kind of work, so balancing between work and private life can be very hard, often even impossible. Her story is interesting because Meg is a mother of two children, one 6 and another 3 years old. She never thought about quitting the job, instead of she organized her private and work life in the way she managed to be a good mother and good employee, her performance in the organization was on the same level like before. The most important thing is that she was supported by the organization. She began telecommuting full-time adjusting her schedule to three days a week. Having wireless connection in her home office allows her to put in a full work day, while also taking breaks to be with her children. She has handled the constant presence of work in her home in two ways. She tried to set clear limits upfront and let people know that certain hours and certain days she will not be able to be as responsive. She and her team have also collaboratively agreed on what they expect as a reasonable response time (24 hours) from each other and have decided on the signals they will use to let each other know when something is more urgent. Because she feels fortunate that her organization is very supportive of her telecommuting arrangement, she is even more motivated to deliver on her work. Supporting her telecommuting organization also requires feedback. She has to let them know when work begins to encroach on the rest of her life, so organization could shape a work-family policy for her and others (MIT Sloan, 2005, page 34).

Two stories previously mentioned about how to use new technologies in order to balance your life can provide us different conclusions. We can even set limits in using new technologies or we can set rules for using new technologies. It is obvious that Meg's story is about setting rules for using technology, because that approach proved as efficient for her life

situation. Beside organizational culture that supports her telecommuting work, she needs rules in order to achieve work-life balance. On the other side if she decided to set limits like Tom did, she would probably find herself unemployed in less than a month. Moreover, setting limits while you have full-time telecommuting job prevents you in efficient performance of your work. So in that case accepting technology as a tool can help you in balancing your private life and work.

If you noticed, in both stories organizations provided necessary technology, but it was not accepted in the same way. Tom decided to refuse organization's BlackBerry knowing that dual use of smart-phone will definitely have negative spillover effect on his private life. It is obvious that he set limits on using technology after regular office hours. While, on the other side, Meg's life is in balance because of technology her organization provided to enable telecommuting and rules she set with her colleagues in order to perform her duties.

In sum, so far we can say that there are two different kinds of organization concerning the technology they provide to their employees, organizations with intention to help employees to achieve work-life balance, and organizations with intention to increase work load. However, there are still organizations that do not use any kind of technology to support segmentation of personal life and work. New technologies are all around them ready to be used but the only question is "How?". Using technology to work more flexibly has caused people to think differently about work, which is very empowering. Flexibility can lead to work-life balance, but very often it can cause exploitation of employees. In that case attitude towards technology can become negative. However, no matter what their attitude toward the use of new technologies is, these technologies are here to stay. The challenge now is to wisely and thoughtfully integrate new technologies capabilities with employees' needs. It is very important that employees and employers continue to set limits, create rules and norms, and, especially, train the next generation how to use technology in a balanced, productive way (MIT Sloan, 2005). Organizations should educate their employees how to use technology in most productive and effective way so both sides could benefit from it. It is important to notice that organizational culture can play significant role supporting such a relationship between organization and employees. Collective understanding of where boundaries are set between work and private life is important in order to facilitate conciliation. Organizations can support technology with intention for overload, or with intention for work-life balance. It is important to understand that with work and private life in balance, employee's productivity and efficiency can also increase.

Conclusion

Results from the research show that technology has significant influence on employees' work-life balance. Participants who have smartphone provided by the organization reported lower levels of work-life balance in contrast to those who does not have smartphone provide by their employee. Furthermore, using technology such as data storage, exchange services and smartphones after office hours decreases psychological detachment from work, and increase work overload. In other words, employees without control over the technology utilization become a victim of his work. Those one who manage to set barriers between office and home putting technology utilization under control will manage to put their work and life in balance. A huge support is required from organization also. Organizations should have supportive culture and policies that will allow employees to use technology in order to increase productivity and flexibility without being overloaded with work. Technology can be used as an ally, it can help us finishing work in time whenever and wherever we are but inside working hours. If it takes out of control, it will definitely become our enemy.

Executive summary

Nowadays technology can be a double-edge sword for work-life balance as it can offer more flexibility and increase employees' performance but, on the other hand, it can also be very demanding (overloading) because it connects employees 24/7, buffering the boundaries between work and private life, which in turn increase work-life conflict. In that sense, several models have been proposed to explain work-life interface such as: conflict, enrichment, and balance. Each of them describes different relationship between work domain and life or family domain. Although there is a lack of studies focusing on the role of new technologies on work-life interface under the perspective of such models, model applied in our study shows that work overload due to 24/7 availability blurs boundaries between work and private life, mediating the relationship between technology and work/non-work balance. In that sense, we specifically hypothesize that availability and use of new technologies to perform task out of work will negatively affect work/non-work balance as well as will decrease psychological detachment from work and increase overload (24/7 availability) due to technology. To test such hypotheses we conducted a cross-sectional survey study following an accidental sampling technique to contact different Croatian organizations for participation. Organizations were sent e-mails with a link to the online questionnaire developed to gather data. The questionnaire was composed by 5 different scales to collect some socio-demographical variables, to measure technology availability and use, overload (24/7 availability), work-life balance, and psychological detachment. In results participants reported lower levels of work-life balance considering new technology utilization provided by the organization. Also results suggest that using such technologies decreases psychological detachment, and in case of overload, the availability of technologies is associated with higher levels of overload. Finally, results revealed no mediation effects of overload and psychological detachment on the relationship between technology and work-family balance. Thus, although some methodological limitation such as small non-representative sample from different organizations, the cross-sectional and self-reported nature of the data, according to our results we recommend HR professionals to adopt segmentation organizational culture that will support work-life balance in the way to educate employees how to use new technologies in order to increase flexibility and productivity in order to increase work-life balance and take advantage of the positive consequences of having work-life balance policies, and avoid

negative consequences of having employees that perceive there is no balance in their work-life domains.

Sumário executivo

A tecnologia de hoje em dia pode ser uma faca de dois gumes para o equilíbrio entre a vida profissional e pessoal. Por um lado, ela pode oferecer uma maior flexibilidade e aumentar o desempenho dos funcionários, mas por outro lado pode ser muito exigente uma vez que liga os funcionários ao trabalho 24h por dia, diminuindo assim a barreira que separa a vida pessoal da vida profissional, e que por sua vez faz aumentar o conflito entre a vida pessoal e profissional. Neste sentido, foram propostos vários modelos para explicar os factores que não só afectam, mas também interferem na relação entre a vida profissional e a vida pessoal, tais como: conflito, enriquecimento e equilíbrio. Cada um dos modelos propostos descreve as diferentes relações existentes entre a vida profissional e a vida pessoal ou familiar. Embora não exista muitos estudos focados na interferência das novas tecnologias na relação entre vida profissional e vida pessoal sob a perspectiva destes modelos, o modelo aplicado ao nosso estudo mostra que a sobrecarga de trabalho devido a disponibilidade 24/7 diminui a fronteira entre a vida profissional e a vida pessoal mediando assim a relação entre tecnologia e equilíbrio entre a vida pessoal e profissional. Neste sentido nos hipotetizamos que a disponibilidade e o uso das novas tecnologias para realizar tarefas laborais fora do horário de trabalho não só vai influenciar negativamente o equilíbrio entre a vida profissional e pessoal como também vai diminuir o distanciamento psicológico do trabalho aumentando assim a sobrecarga de trabalho (Disponibilidade 24/7). Para testar a nossa hipótese foi realizado um estudo transversal usando uma técnica de amostragem acidental. Neste estudo foram contactadas diversas organizações croatas. Posteriormente foi enviado um e-mail para as organizações com o link do questionário online de modo a recolher os dados necessários. O questionário é composto por 5 escalas diferentes e permitiu não só recolher alguns dados sócio-demográficas, como também medir o uso e a disponibilidade das tecnologias, o excesso de trabalho (disponibilidade 24/7), equilíbrio entre a vida pessoal e profissional, e o distanciamento psicológico. Nos resultados obtidos os participantes reportaram que o uso das

novas tecnologias fornecidas pela organização diminuiu o equilíbrio entre a vida profissional e a vida pessoal. Os resultados sugerem ainda que o uso das novas tecnologias não só diminuiu o distanciamento psicológico do trabalho como também está associado a maiores níveis de excesso de trabalho. Finalmente, os resultados não revelaram nenhum efeito de mediação entre o excesso de trabalho e o distanciamento psicológico na relação entre o uso de tecnologia e o equilíbrio entre vida profissional e familiar. Ainda assim, de acordo com os nossos resultados, e apesar de algumas limitações metodológicas, tais como o uso de uma pequena amostra não representativa de diferentes organizações, a natureza transversal e auto-relato dos dados, nos recomendamos os profissionais de RH a adotar uma cultura organizacional segmentada que irá apoiar o equilíbrio entre a vida pessoal e profissional através da educação dos funcionários de como usar as novas tecnologias a fim de aumentar não só a flexibilidade e produtividade no trabalho como também melhorar o equilíbrio entre trabalho e a vida pessoal. Deste modo irá ser possível aproveitar os efeitos positivos que advêm de ter uma política que reforce o equilíbrio entre trabalho e vida, evitando assim as consequências negativas de ter funcionários que não percebam a barreira existente entre a vida pessoal e profissional.

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Annexes

Questionnaire used in survey study

Part 1

1. *Age: __ years.*
2. *Gender:*
 - a. Male
 - b. Female
3. *Are you married/living with your partner?*
 - a. Yes
 - b. No
4. *If yes, is your partner employed?*
 - a. Yes
 - b. No
5. *Do you have children living with you?*
 - a. Yes, no. of children ____
 - b. No
6. *Work experience:*
 - a. <5 years
 - b. 5 to 15 years
 - c. >15 years

Part 2:

1. *Does your employer provide you mobile device such as iPhone, BlackBerries, and other smart phones?*
 - a. Yes, it is the only one I am using
 - b. Yes, beside business one I have personal one also

- c. No, I use my personal one for work
 - d. No, I bought one on my own
 - e. No, I don't need such a device for my work
2. *Does your employer provide you mobile device such as laptop, tablets and other types of PC?*
- a. Yes, it is the only one I am using
 - b. Yes, beside business one I have personal one also
 - c. No, I use my personal one for work
 - d. No, I bought one on my own
 - e. No, I don't need such a device for my work
3. *Does your employer allow you to use Skype during working hours?*
- a. Yes, for business purposes only
 - b. Yes, for all purposes
 - c. No
 - d. I do not have Skype account
4. *Does your employer allow you to use social networks such as Facebook and Twitter during working hours?*
- a. Yes
 - b. No
 - c. I do not have account on any of it
5. *Do you use any social network such as Facebook and Twitter during your working hours?*
- a. Yes
 - b. No
 - c. I do not have account on any of it
6. *If yes, for which purpose you use social network during working hours:*
- a. For business purposes
 - b. For private purposes
 - c. For business and private purposes
7. *Does organization you work for have online service for storage and exchange of data, such as Box.net, ZumoDrive, Sugarsync, Google Drive and Dropbox?*
- a. Yes
 - b. No
 - c. I don't know

8. *Do you use online service for storage and exchange of data such as Box.net, ZumoDrive, Sugarsync, Google Drive and Dropbox?*
- Yes, for business purposes only
 - Yes, for private purposes only
 - Yes, for private and business purposes
 - No I don't use
9. *Does employer provide you possibility of using web tools for data processing such as Google apps (Gmail, Google Docs, Calendar...)?*
- Yes
 - No
 - It doesn't matter which tools we use
10. *Do you use web tools for data processing such as Google Apps (Gmail, Google Docs, Calendar...)?*
- Yes, for business purposes only
 - Yes, for private purposes only
 - Yes, for private and business purposes
 - No, I am not familiar with such tools
 - No I don't use
11. *Does employer provide you business e-mail address?*
- Yes
 - No
12. *Do you use your private email address for business purposes also?*
- Yes
 - No

Part 3:

Please mark with an "X" the option that suits better your situation.

How often does it happen that...	Someti			
	Never	mes	Often	Always
	0	1	2	3

a1. You receive emails outside working hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
a2. You receive calls outside working hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
a3. You try to be available 24/7 for business purposes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
a4. Your employer allows you to take work home with you	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
a5. Your employer requires you to take unfinished work home with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
a6. You handle your private matters during working hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
a7. You handle work-related matters in private time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b1. You are irritable at home because your work is demanding?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b2. You find it difficult to fulfil your domestic obligations because you are constantly thinking about your work?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b3. You have to cancel appointments with your spouse/family/friends due to work-related commitments?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b4. Your work schedule makes it difficult for you to fulfil your domestic obligations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b5. You do not have the energy to engage in leisure activities with your spouse/family/friends because of your job?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b6. You have to work so hard that you do not have time for any of your hobbies?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b7. Your work obligations make it difficult for	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

you to feel relaxed at home?				
b8. Your work takes up time that you would have liked to spend with your spouse/family/friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b9. The situation at home makes you so irritable that you take your frustrations out on your colleagues?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b10. You have difficulty concentrating on your work because you are preoccupied with domestic matters?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b11. Problems with your spouse/family/friends affect your job performance?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b12. You do not feel like working because of problems with your spouse/family/friends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b13. After a pleasant working day/working week, you feel more in the mood to engage in activities with your spouse/family/friends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b14. You fulfil your domestic obligations better because of the things you have learned on your job?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b15. You are better able to keep appointments at home because your job requires this as well?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b16. You manage your time at home more efficiently as a result of the way you do your job?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b17. You are better able to interact with your spouse/family/ friends as a result of the things you have learned at work?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b18. After spending a pleasant weekend with your spouse/family/friends, you have more fun in your job?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b19. You take your responsibilities at work more	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

seriously because you are required to do the same at home?

b20. You are better able to keep appointments at work because you are required to do the same at home?

b21. You manage your time at work more efficiently because at home you have to do that as well?

b22. You have greater self-confidence at work because you have your home life well organized?

Part 4:

Please mark with an “X” the option that suits better your situation.

Strongly disagree	I disagree	Neutral	I agree	Strongly agree
1	2	3	4	5

1. I am able to balance the demands of my work and the demands of my family

2. I experience a high level of work–family balance

3. I am satisfied with the balance I have achieved between my work life and my family life

4. During my nonwork time, I distance myself from work

5. During my nonwork time, I don't think about work at all

6. During my nonwork time, I forget about work.

7. During my nonwork time, I get a
break from the demands of work
