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# Family and work-related consequences of addiction to organizational pervasive technologies

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## ABSTRACT

While organizational pervasive technologies, such as mobile computing, can contribute to increased productivity, their nature can also result in technology addiction. We applied the behavior–environment interface of social cognitive theory to explain several negative familial and organizational consequences of addiction to work-related pervasive technologies. Our empirical study of 241 organizational mobile email users revealed that their levels of addiction to mobile email increased their perceived work overload and technology–family conflict. Perceived work overload, in turn, reduced their organizational commitment. Furthermore, elevated levels of perceived work overload together with augmented technology–family conflict fostered work–family conflict. Implications for research and practice are suggested.

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## 1. Introduction

Organizational pervasive IS are technologies that may be used almost anytime and anywhere, thus they do not constrain employees to the physical location of their organization. For example, mobile email users can access work-related email while commuting, dining with their families, or on vacation. Although these technologies can augment productivity by allowing employees to be more connected and responsive to work issues, they may promote negative outcomes, such as addiction, work overload, and conflict, which stem from the potential excessive technology dependency and use.

Several potentially negative outcomes of pervasive technologies usage have been explored in both organizational [37] and leisure settings [12]. Nevertheless, little emphasis has been given to the organizational and familial consequences of technology addiction to work-related technologies. Our study helps to bridge this gap.

We relied on Bandura's concept of reciprocal determinism in social cognitive theory (SCT) [3], according to which one's behavior can alter the way the environment (family and work) is perceived by an individual, and the way that person interacts with the environment. We focused on a subset of important family and work-related consequences of technology addiction, concentrating on factors pertaining to users' families (work–family and technology–family conflicts). The work–family conflict concept captures the irreconcilable demands from work and family [14]. Extrapolating to the addictive technology itself, the technology–family conflict concept refers to the friction between family tasks and the use of a specific work-related pervasive technology (e.g., using mobile email instead of dining with the family). The organizational factors considered included perceived work overload and organizational commitment (the degree to which an individual identifies with his or her organization) [9]. The importance of such environment-related factors and their effects have been previously explored [23] but the influence of addiction to an organizational technology has not been studied. Our research model is depicted in Fig. 1.

By integrating technology addiction with social and work-related consequences under the SCT umbrella, the model makes several important theoretical and practical contributions. From a theoretical standpoint, the model proposes that there are varying levels of addiction to mobile email in the population; more attention should be given to potentially counterproductive effects

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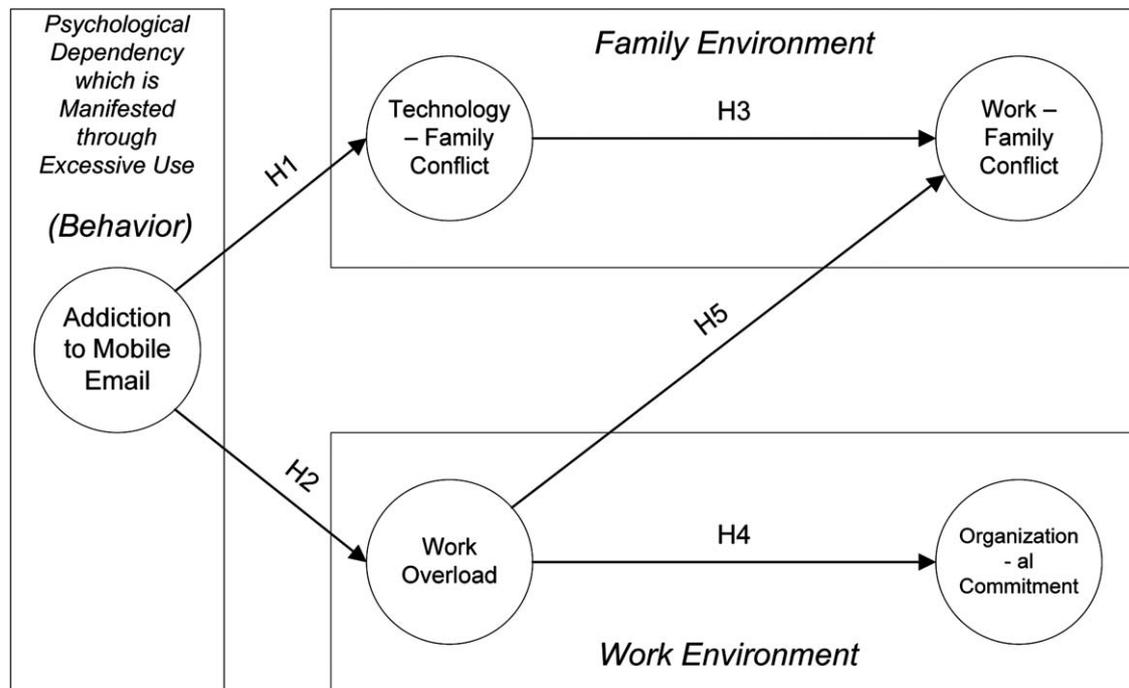


Fig. 1. The research model.

of the (over) use of such technologies; the family–technology–work interfaces may be sources of friction, i.e., users assume multiple roles, including the role of a technology user, and transitions between these roles create friction; and the increasing use of pervasive technologies makes technology–family conflict a viable and important concept.

**2. Theoretical background**

Every technological invention has a dual impact on individuals, organizations and society. The first effect refers to the initially envisioned outcome, for example, productivity. The second relates to the unintended consequences that emerge later. There is a growing concern that unintended consequences

of technology use result in challenges for users and their organizations [29].

*2.1. What is technology addiction?*

Users of modern technologies may exhibit high levels of psychological dependency on a technology resulting in excessive use [41]. Table 1 provides terms and definitions used to describe addictions in technological contexts. It also presents key negative outcomes that have been identified.

The term *technology addiction* is most relevant with respect to organizational pervasive technologies; it is a type of non-substance addiction: a pathological psychological dependency on using a technology. In a way similar to other behavioral addictions, an

**Table 1**  
Problematic technology usage conceptualizations.

Term	Conceptual definition	Key negative addiction outcomes	Sample works
Internet addiction	Excessive Internet usage so that it interferes with major aspects of a person's life. May be manifested through tolerance, withdrawal, dysfunction, and impulsive use	Negative influence on daily routines, school performance, parent/teacher relationships; family, peer, financial, health, work-related and interpersonal problems.	[22,40]
Internet sex addiction	Obsessive, compulsive, abusive and addictive disorder of engaging in online sexual activities	Eye strain and sleep deprivation	[10,28]
Problematic Internet use	A person's inability to control his/her Internet use; impulse control disorder	Excessive time commitment, shame, work performance decline, adultery, marital problems, isolation, duties neglecting	[12,31]
Pathological Internet Use	A distinct, disturbing pattern of dependency on the use or overuse of the Internet or its specific functions	Negatively affects social and emotional functioning, e.g., causes depression, mood alteration, sensitivity rejection, loneliness, impulsivity and procrastination. Excessive time commitment	[11,26]
Excessive use of role-playing games	Psychological and behavioral dependence on using online gaming	Reduced impulse control, poor school performance, inability to cease Internet usage, mood-altering, guilt, isolation, loneliness, lower self-esteem, ignorance of the off-line world and obligations, interpersonal problems and financial difficulties	[20]
Technological addiction	Excessive behavioral addiction involving non-human interactions	Online gender swapping, conflict with others, and little satisfaction with off-line world	[16,17]
Computer addiction	Computer-dependent individuals	Social and personal problems	[32]
		Low satisfaction when interacting with others, perception of computers more favorably than humans, and parenting issues	

addicted person can exhibit certain symptoms: (1) salience (dominating thoughts and behaviors); (2) relief (performing the activity results in thrill or relief); (3) tolerance (it must be conducted to a greater extent for producing positive emotions); (4) withdrawal (inability to perform results in negative emotions); (5) relapse and reinstatement (attempts to reduce its use are doomed to fail); and (6) conflict (engaging in it creates conflict with other individuals and tasks) [6].

High levels of technology addiction have been observed in many contexts, including the Internet, mobile phones and video games [4,21]. These addictions often result in multiple symptoms [13]. First, the social quality of life may be compromised through: others' complaining about the addict; the addict snapping when somebody interferes with his or her use of the technology; the addict trying to stretch technology use as much as possible; and the addict being ashamed of the extent of his or her use of the technology. Second, the addict may neglect various chores due to over-use of the technology and may feel withdrawal symptoms when not using it. Third, the compensatory technology usage shows the extent to which the technology has become a "mental safe haven" – it allows the user to escape from daily realities. Fourth, the addict's career can suffer because of potential compromised work quality. Fifth, reduced time control is indicative of addiction; addicts use the technology longer than intended to and find it difficult to reduce use. Finally, excitatory usage indicates addiction; addicts may prefer to use the technology than interact with their families and friends.

Addiction is typically captured by using self-reported continuous scales that measure the strengths or frequency of addiction symptoms [e.g., 7]. They will find it difficult to cross boundaries between work and family roles. Thus, it is a continuous variable that pertains to all individuals by ranging from weak or no symptoms (low addiction scores) to people with many, strong symptoms (high addiction scores).

Research has focused primarily on identifying predictors of technology addiction, such as demographics and personality factors [19], and determining or measuring addiction symptoms [8]. Nevertheless, it provided little insight on the potential family- and work-referenced outcomes of technology addiction.

## 2.2. The overarching framework: social cognitive theory and addiction

Social cognitive theory (SCT) was used as the basis of our research because it allows the simultaneous and dynamic consideration of the interplay among multiple social and personal factors, and also helped us to target interventions at personal (e.g., self-efficacy, deficient self-regulation), environmental (e.g., peer pressure), or behavioral factors (e.g., regulated behavior).

According to SCT, users of organizational pervasive technologies not only react to their environments (e.g., peer pressure effects on behaviors) but their behaviors (e.g., obsessive system usage, a key manifestation of technology addiction) can also affect their environments. This interplay between a person's behavior and the environment is reciprocal. Mobile email users, who exhibit addiction-driven behaviors and symptoms that often interfere with their other activities, alter their own environment and the way they perceive the environment. Because organizational pervasive technologies are used in both work and home locations, the environment includes, among other things, user families and organizations.

SCT includes two other "interfaces" that together create a "triadic-reciprocity": a dynamic interplay among a person, his or her behaviors, and his or her environment; however most SCT projects focus on parts of the theory, i.e., one interface at a time [e.g., 15]. In our study, the focus was on the behavior-

environment interface. While feedback from individuals' environments can change their behavior, for simplicity we focused on a snapshot, non-reciprocal, effect from the behavior to the environment.

## 3. The research model: a family-technology-work interface theory of the consequences of technology addiction

### 3.1. Work and familial effects of technology addiction

Addiction symptoms include increased technology use and inability to decrease the activity due to psychological dependency. Addicts tend to compromise their social lives (family and friends) and neglect themselves. They prefer the excitement of technology use to intimacy with their partners. In the case of organizational pervasive technologies, the increased and invasive nature of use (in bed, while on vacation, etc.) can exacerbate conflicts inside families because less time is spent on family activities, and more is devoted to interacting with the technology.

Addiction-driven behaviors result in frictions between users and their environment, and eventually alter the environment. To capture the conflict between an addict's family and the use of a technology, we introduced a "technology-family conflict" concept. Building on the definition of work-family conflict (an inter-role conflict in which pressures from work and family are irreconcilable), technology-family conflict was defined as irreconcilable demands for time from both the family and the pervasive organizational technology (i.e., competing for an addict's time and causing tension). Many activities, such as sport, studying and hobbies, conflict with family demands [24]. In our study, the friction between family and technology was assumed to depend on the degree of technology addiction, leading to the hypothesis:

**H1.** Greater addiction to an organizational pervasive technology increases the technology-family conflict.

Addiction to an organizational pervasive technology may also influence the work environment, and thus one's actual and perceived work overload. Using a pervasive technology, employees can be reached anywhere and anytime. Addicted mobile email users may check emails too frequently, respond immediately even without any explicit demand for timely communication, and do so beyond regular work hours. The constant engagement in work-related tasks may therefore make them feel overworked and burnt-out:

**H2.** Greater addiction to an organizational pervasive technology increases the perceived work overload.

### 3.2. Effect of technology-family conflict

An addict's disruptive and excessive interaction with a technology may be perceived, in part, as due to work pressures (i.e., attributed to the employer, who provided the family member with the system). Users of pervasive technologies may be expected to spend their spare time with their families, and not work from home. That is, when there are high levels of technology-family conflict, and the technology is associated to some extent with work, the conflict and blame may be attributed to the employer. In such cases, the friction between a user's family and work environment is likely to increase. Thus:

**H3.** Greater technology-family conflict, in the context of pervasive organizational technologies, increases the work-family conflict.

### 3.3. Effects of perceived work overload

Perceived work overload can have negative organizational and personal consequences, such as reduced wellbeing, increased work-exhaustion, and turnover intentions. In our study, the focus was on two outcomes: work–family conflict (family-related), and organizational commitment (the degree to which an individual is involved in, and identifies with, his or her organization).

There are three types of organizational commitment [2]:

- Affective commitment captures identification with and emotional attachment to an organization.
- Continuance commitment relates to the cost of leaving the organization.
- Normative commitment refers to a feeling of obligation to stay with an organization.

Whereas organizational commitment is best conceptualized as an affect-laden attitude towards an organization, the latter two forms of commitment are about retention and leaving behaviors, and they do not ideally capture general commitments [33]. Thus, we focused our study on affective commitment only.

Individuals who feel overworked tend to reduce their organizational commitment. When employees perceive that they are in an unfair exchange relationship [38], they reduce their efforts and intentions. Indeed, commitment is negatively associated with work overload [39]. Therefore:

**H4.** Greater perceived work overload reduces the organizational commitment.

Perceived work overload may also increase the friction between family- and work-related activities. Overworked individuals may feel stressed and exhausted, and thus be unwilling to spend time on family-related issues. They will find it difficult to cross boundaries between work and family roles. Thus, overloaded employees may be preoccupied with work matters during family

time. This notion received preliminary support in a different context [27]. Therefore:

**H5.** Greater perceived work overload increases the work–family conflict.

## 4. Research design

Data for our study were collected via an online questionnaire that was sent to mobile email users in three organizations.

### 4.1. The information technology artifact

The pervasive IT artifact that we chose for our study was mobile email: it has become an important new technology, which may lead to addictive behavior especially since it brings work home and may interfere with family and leisure life leading to family-related consequences.

### 4.2. The survey instrument

All measures were adapted from existing research instruments. The scale for *addiction* was adapted from Charlton and Danforth [8] because it has been shown to be valid and reliable. *Perceived work overload* was measured using Moore's instrument [25] for similar reasons, while *organizational commitment* was operationalized with the Tsui et al. scale [36], which has been frequently used in research.

Different instruments were chosen for measuring work–family conflict and technology–family conflict. The Adams et al. instrument [1] was selected for assessing work–family conflict because it has good psychometric properties and its items fit our context; the time-based conflict scale of Stephens and Sommer [34] was used for measuring technology–family conflict, because its items provide a good fit for the conflict between family and the technology used. The use of two separate scales for conflict mitigates some aspects of common method bias: with two

**Table 2**  
Study scales.

Construct	Measure source	Items
Addiction to mobile email	[8]	– I sometimes neglect important things because of my interest in my mobile email – My social life has sometimes suffered because of me interacting with my mobile email – Using mobile email has sometimes interfered with other activities – When I am not checking my mobile email I often feel agitated – (R) I have made successful attempts to reduce the time I interact with my mobile email <sup>a</sup> – I am sometimes late for engagements because I interact with my mobile email – Arguments have sometimes arisen because of the time I spend on mobile email – I think that I am addicted to mobile email – I often fail to get enough rest because I interact with my mobile email
Technology–family conflict	Builds on [34]	– The use of mobile email keeps me from my family and friends more than I would like – The use of mobile email takes up time that I feel I should spend with my family and friends – (R) The time I devote to the use of mobile email does NOT keep me from participating equally in my non-work related activities <sup>a</sup> – (R) I generally seem to have enough time to work with my mobile email and to spend time with family and friends
Work overload	[25]	– I feel that the number of requests, problems, or complaints I deal with is more than expected – I feel that the amount of work I do interferes with how well it is done – I feel busy or rushed – I feel pressured
Organizational commitment	[36]	– For me, this is the best of all possible organizations for which to work – I am extremely glad to have chosen this organization to work for over other organizations – This organization inspires the very best in the way of job performance – I show by my actions that I really care about the fate of this organization
Work–family conflict	[1]	– The demands of my work interfere with my home and family life – The amount of time my job takes up makes it difficult to fulfill family responsibilities – Things I want to do at home do not get done because of the demands my job puts on me – My job produces strain that makes it difficult to fulfill family duties – Due to work-related duties, I have to make changes to my plans for family activities

(R)-reverse coded item.

<sup>a</sup> Deleted item.

**Table 3**  
Attributes and demographics of the sample.

	Min	Max	Mean	Std. deviation
Typical number of mobile email messages sent daily	<1	200	20	26
Typical number of mobile email messages received daily	<1	500	52	59
Typical time spent interacting with mobile email during working hours (daily)	<1	480	42	66
Typical time spent interacting with mobile email during evening time (daily)	<1	240	23	32
Typical time spent interacting with mobile email while commuting (daily)	<1	240	11	24
Typical time spent interacting with mobile email on weekends (daily)	<1	480	38	64
Typical time spent interacting with mobile email while vacationing (daily)	<1	600	32	70
Typical monthly MB of mobile email data	<1	1000	53	122
Typical monthly payment (\$US) for data services	<1	300	54	48
Average daily % of time out of office	<1	100	39	26
Average daily % of time out of organizational premises	<1	100	19	24
Age	18	68	38	13

**Table 4**  
Descriptive statistics, construct reliabilities, and correlations.

	Mean	Std. deviation	Range of item-to-total correlations	(1)	(2)	(3)	(4)	(5)
(1) Addiction to mobile email	2.57	1.24	0.61–0.78	0.90				
(2) Technology–family conflict	2.16	1.21	0.53–0.84	0.71**	0.85			
(3) Work–family conflict	3.87	1.72	0.80–0.93	0.27**	0.35**	0.96		
(4) Organizational commitment	5.35	1.25	0.54–0.88	0.08	–0.09	–0.20**	0.90	
(5) Perceived work overload	4.03	1.67	0.75–0.84	0.18**	0.29**	0.65**	–0.16*	0.91

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .

different scales measuring two types of conflicts, the scales will not be a source of variance.

All items were scored by respondents by using seven-point Likert-type scales. The work overload items captured frequencies with which individuals experienced feelings, and thus were anchored from “Once a year or less” (1) to “Daily” (7). Other questions captured agreement with a given statement, and were anchored from “Strongly Disagree” (1) to “Strongly Agree” (7). These items are shown in Table 2.

#### 4.3. Procedure and sample

Five hundred and fifty mobile email users in three North American organizations (one private for-profit company and two higher education institutions) were contacted through a personalized email message sent by their IT Department asking them to volunteer to complete an online questionnaire. The invitation was sent to all employees who were on the mobile email user lists of the institutions. Most of the employees were IT experts or senior administrators. In all organizations, mobile email devices were given to the users by their employers.

In order to reduce possible bias due to a tendency to under-report less socially desirable behaviors, such as addiction, our study was described as a general attempt to understand user interaction with mobile email. Out of the invitees, 450 clicked through to read the invitation, and 241 completed questionnaires were obtained for a response rate of 44%. The sample involved 60% male respondents. Additional demographic and usage statistics are shown in Table 3.

### 5. Data analysis and results

Several steps were taken to test the measurement model. Reliabilities of the measures were calculated. Two reverse-coded

items (“I have made successful attempts to reduce the time I interact with my mobile email”, and “The time I devote to the use of mobile email does NOT keep me from participating equally in my non-work related activities”) did not perform well after recoding and were removed. Their corrected item-to-total correlations were 0.20 and 0.44 respectively, and dropping them showed significant improvement of the Cronbach’s Alphas of their corresponding constructs. The underperformance of these items may be in part due to the fact that they were negatively worded and might have produced artifact factors [30] that infringed on the construct validity. Following this step, scale reliabilities and descriptive statistics were re-computed (see Table 4, reliabilities are on the diagonal). All constructs were reliable because all Cronbach’s Alphas exceeded the 0.80 threshold, and item-to-total correlations exceeded 0.50.

Common method bias was assessed by using Harman’s [18] single factor test; while this test is imperfect, it indicated low likelihood of bias was observed because one factor explained only 29% of the variance, and there were other factors as well. Then age and sex were considered as potential control variables by examining their correlations with the model constructs. Age emerged as the only relevant control variable.

The Structural Equation Modeling (SEM) facilities of AMOS were used to test our model, following a two-step approach:

1. A confirmatory factor analysis (CFA) model, in which all five constructs were included and allowed to freely correlate with one another. The fit statistics for this model were acceptable (see Table 5), including a Chi-square to degrees of freedom ratio below 2. Its comparative fit index (CFI) and normed fit index (NFI) scores were over 0.95, and its root mean square error of approximation (RMSEA) of 0.050, which was not significantly different from 0.050 ( $p\text{-close} < 0.47$ ). The standardized root

**Table 5**  
Fit indices for the estimated models.

	$\chi^2$	df	$p$	$\chi^2/df$	SRMR	IFI	TLI	CFI	RMSEA	$p\text{-Close}$
CFA model	380.9	237	0.000	1.61	0.055	0.97	0.97	0.97	0.050	0.47
Uncontrolled research model	408.4	242	0.000	1.69	0.067	0.97	0.96	0.97	0.054	0.25
Controlled research model	475.8	261	0.000	1.82	0.069	0.96	0.95	0.96	0.059	0.05

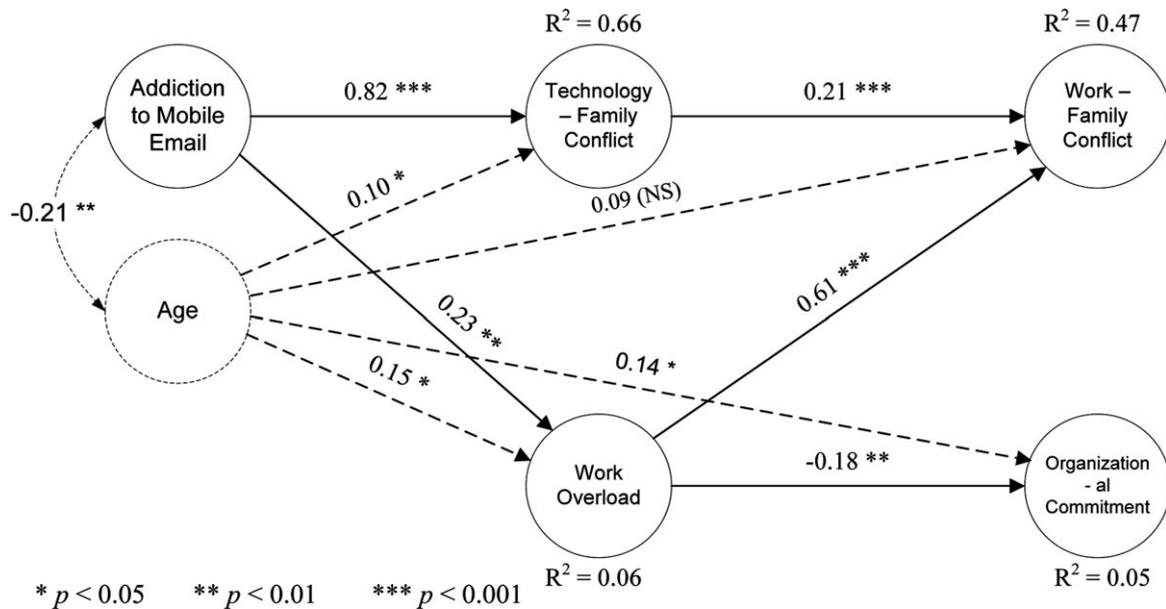


Fig. 2. The structural model.

mean square residual (SRMR) was considered simultaneously with the RMSEA. Scores of 0.054 and 0.050 respectively indicated that the criteria for good model fit (SRMR < 0.08 and RMSEA < 0.06) were met. Thus, we concluded that the CFA model fits the data well, and structural model specification and estimation were plausible.

- An uncontrolled structural model was specified and estimated. The fit statistics were subjected to common cutoff criteria, and were found to be adequate (see Table 5). Then a controlled model was specified in which age was allowed to correlate with addiction (an exogenous variable), and was also specified as a predictor of the endogenous constructs of the model. The fit indices of this model were adequate, indicating acceptable fit. The Chi-square to degrees of freedom ratio was below 2, CFI and NFI were over 0.95, and RMSEA below 0.06, barely significantly different from 0.05 ( $p$ -close < 0.05). The normal criteria for good model fit were also met in this model, with SRMR = 0.069 and RMSEA = 0.059. The fitted controlled model is shown in Fig. 2.

All the hypothesized relationships were supported at least at the 0.01 significance level. As such, our findings lend support to the model and demonstrate several negative consequences of addiction to mobile email. Addiction increases the perceived work overload and fosters conflict between users' family demands and addiction-driven use of mobile email. Work-family conflict is further augmented by work overload, and work overload also reduces the addict's organizational commitment.

As a control variable, gender had no effect in our proposed model. No difference in addiction levels was observed between male and female users ( $t(227) = 0.86$ , n.s.). At the same time, age emerged as a valid control variable with small (but significant) positive effect on the endogenous constructs of the model and having negative correlation with technology addiction. Overall, younger employees tended to have higher levels of addiction to mobile email and older employees tended to perceive higher work overload, stronger technology-family conflicts, and higher levels of organizational commitment. Furthermore, a marginally significant effect of age on work-family conflict ( $p < 0.07$ ) indicated that older employees had stronger friction between work demand and family life.

## 6. Implications

### 6.1. Implications for theory

We empirically validated that addiction to mobile email reduced organizational commitment and increased conflict between users and their family or home environment. The model accounted for a significant portion of the variance in work-family conflict (47%), and a small yet significant portion of the variance in organizational commitment (5%). Thus, our model allowed us to focus on the unexpected effects of the use of a technology originally supposed to enhance employees' productivity and improve their social life. It also introduced the concept of technology-family conflict and created a family-technology-work interface theory, which shifts attention to the potential frictions among these three elements. We further demonstrated that a broad socio-technical system should be taken into consideration in order to understand user interaction with organizational pervasive technologies. This system includes the individual user, the technology he or she uses, the organization for which the user works, and the user's family and friends.

Hypotheses 1 and 2 focused on the effects of addiction to pervasive technology on users' work and family life. The data analysis demonstrated that after controlling for age, addiction explained 66% of the variance in technology-family conflict and 6% of the variance in perceived work overload. This suggests that the concept of technology-family conflict is nomologically valid. Hypothesis 3 dealt with an important outcome of technology-family conflict: that technology-family friction may be attributed to work demands and thus may increase work-family conflict. Hypotheses 4 and 5 examined the effects of perceived work overload on organizational commitment and work-family conflict. The hypotheses above were supported. After controlling for age, work overload together with technology-family conflict explained 47% of the variance in work-family conflict. Individuals who spent "family-time" by working or using their pervasive devices may expect to face family discord.

The perceived work overload, after controlling for age, explained 5% of the variance in organizational commitment. While this may seem somewhat low, the correlation between

organizational commitment and work overload observed in our study ( $-0.16$ ) was in line with similar correlations reported in a meta-analysis [9]. This strengthens our confidence in the findings.

Our study also showed that the age of mobile email users affected many of their technology–family and work–family interfaces. First, age was negatively correlated with the users' levels of addiction, indicating that younger individuals have a stronger predisposition to addiction to mobile email; indeed, it has been demonstrated that younger Internet users employ the technology more frequently and in a more diverse manner [35]. The extent of technology usage, in turn, can be associated with technology addiction. Indeed, a *post hoc* correlation analysis revealed that age was negatively correlated with mobile usage in our sample, as measured by the average number of mobile email messages sent per day and the average time users spend on their mobile email devices ( $-0.14$  and  $-0.17$ ,  $p < 0.05$ ). Second, age positively affected users' organizational behavior. Older users perceived stronger work overload and organizational commitment. Older individuals may have changed jobs and obtained the position they like. They also may be more senior and receive higher pay. Third, age was found to positively affect technology–family conflict. Older individuals found greater friction between their usage of mobile email devices and family demands.

### 6.2. Implications for practice

Because the addiction-driven use of organizational pervasive technologies can lead to undesirable outcomes, managers may attempt to regulate the use of mobile email. Our study suggested several potential avenues of action by pointing to the factors that managers can control in order to reduce negative outcomes. First, organizations may impose an explicit policy on mobile email use to ensure its controlled employment outside the office. This policy may be communicated to all users, and the use can be monitored.

Second, communication expectations from mobile email users could be formulated, and conveyed to all managers and users. This measure can check that employees are aware of an expected extent of their technology use so that they feel less pressure to exceed. Third, employees can be educated on the potential addictive effects of mobile email and its associated consequences. In addition, user families could be informed about the potential effect of excessive use and be encouraged to intervene if needed.

### 6.3. Limitations

Some limitations were, of course, present in our study. First, only IT experts and managers from three North American organizations participated in our survey. Therefore, its generalizability is limited, as also was our concentration on only one technology (mobile email). Second, the use of a cross-sectional survey provided imperfect support for the hypothesized causality. Third, while this investigation relied on social cognitive theory as an overarching framework, it focused only on a snapshot of one interface (the behavior–environment line). Fourth, our study focused only on a small subset of negative outcomes of addiction to mobile email. Fifth, we could have controlled other factors than age and gender to increase the predictive power of the model.

Finally, this study, following prior investigations, treated addiction as a continuous rather than a dichotomous variable. We assumed that all users have some level of addiction to mobile email (from none/low to very high) and that this level of addiction is associated with organizational and familial outcomes. It may be

desirable to identify the percentage of “addicts” in the sample. Due to the lack of formal medical definition of technology addiction [5], it is difficult to precisely classify individuals as “addicted” or “not addicted”.

## 7. Conclusion

Our model established several key consequences of addiction to pervasive organizational technologies and formulated a more nuanced technology–family–organization interface theory. Our findings suggested that addiction to organizational pervasive technologies can affect family life and work. Thus, the psychological dependency on, and the resultant overuse of *pervasive* technologies may lead to undesirable outcomes which should be carefully weighed against any productivity gains. Overall, our findings strengthened our understanding of technology addiction, and defined a basis for studying the interplay among organizations, employees, their families, and the technologies they use.

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