# IT-Consumerization: Domain Control, (Reversed) Presenteeism, and Stress

Short Paper

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## **Abstract**

Today, many employees use privately owned digital solutions for professional and non-professional purposes, a phenomenon known as IT-consumerization. Apart from its positive outcomes, IT-consumerization entails a loss of control over the integration of the work- and non-work domain, which causes domain conflict. Domain conflict appears when work interferes with non-work (i.e., 'presenteeism') and vice versa (i.e., 'reversed presenteeism'). This last direction lacks research, although studies suggest that both directions induce similarly grave adverse effects. Building upon boundary theory and the person-environment fit model, we propose an overarching perspective to simultaneously assess how IT-consumerization affects presenteeism and reversed presenteeism, how these affect each other, and how they affect perceptions of strain. The results of our prestudy provide first evidence on the relationships between IT-consumerization, presenteeism, reversed presenteeism, and stress. Furthermore, they uncover the need for further investigation to understand the interrelationship between (reversed) presenteeism and individual - and organizational factors.

**Keywords:** IT consumerization, Bring Your Own Device, Boundary theory, Person environment fit model, (Reversed) presenteeism, Domain control, Stress, Work life conflict

## Introduction

According to estimations, more than 50% of all employees are impacted by what is called 'Information Technology (IT) consumerization' (Junglas et al. 2018). IT-consumerization refers to the phenomenon that employees use their privately owned digital solutions dually, that is, for both professional and non-professional purposes (Harris et al. 2012; Ortbach et al. 2013). Consequently, these employees use the same privately-owned digital solutions to check e-mails, to communicate via instant messenger, to place calls, to exchange files, etc. for work purposes, while they are in their work domains, and for non-work purposes,

while they are in their non-work domains. However, neither their work nor their non-work acquaintances do necessarily take much notice of their (non-)working hours.

An example would be Becky, who uses an instant messaging application, to which she subscribes privately, to communicate with Albert on private (i.e., non-work) matters, and to communicate with Charles on work matters. Yet, they all work on different schedules. Thus, it happens that Albert sends private messages to Becky while she is at work, and that Charles sends work messages to Becky after she has left work. It really depends on what she is currently doing, but sometimes a private message from Albert during her work can end up in a proper chat that lasts for more than an hour – obviously, she does not stop working completely while she chats, but she is certainly slower and less attentive while she chats. Similarly, Becky does not mind to get work messages outside her working hours. However, both kinds of interferences bother her if they grow out of proportion. What is more, Becky also uses her private phone for work. Thus, she also receives work-related phone calls outside her working hours and non-work-related calls during her working hours. And then there are all the other devices, applications, and services that she privately owns or subscribes to, and that she uses for both work and non-work purposes, like applications for (a)synchronous communication, social networking sites, and content sharing platforms to perform her work.

This example demonstrates two consequences of IT-consumerization: first, IT-consumerization makes it difficult to anticipate whether a dually used digital solution will draw work- or non-work-related attention, and to separate between the work and non-work domain. This loss of control over the level of integration of the work- and non-work domain can cause domain conflict for the individual. Domain conflict reflects an unsatisfactory level of integration of the two domains and has two directions: (A) interference of the work domain with the non-work domain, which we refer to as 'presenteeism', and (B) interference of the non-work domain with the work domain, which we refer to as 'reversed presenteeism'.

Second, this example demonstrates that the IT-consumerization phenomenon is composed of the different bring-your-own phenomena such as bring-your-own-device, -service, -application, and further bring-your-own instances (e.g., Harris et al. 2012; Thomson 2012). It is necessary to consider all these different instances, as Chen and Karahanna (Forthcoming) show that for example e-mail and phones have substantially different effects on individuals. Furthermore, it is necessary to distinguish between presenteeism and reversed presenteeism, as the work and non-work domains differ by nature (Chen and Karahanna Forthcoming), thus also their boundaries differ and the degree of interference which employees perceive as desirable will differ. Hence, presenteeism and reversed presenteeism have different antecedents, mediators, moderators, and consequences (Chen and Karahanna Forthcoming). Presenteeism for example is affected by schedule flexibility and manager support, while reversed presenteeism is affected by dependent care benefits and family structure (Anderson et al. 2002). Furthermore, while the former affects turnover intentions, the latter (reversed presenteeism) affects absenteeism (Anderson et al. 2002).

Presenteeism is widely discussed inside and outside the Information Systems (IS) research field (e.g., Ahuja et al. 2007; Ayyagari et al. 2011; Chen and Karahanna Forthcoming). It plays an important part also in practice. Certain companies identify presenteeism to entail such negative consequences that they have started to limit employees' access to the companies' IS during certain times of the day (Weinert et al. 2016). Yet, reversed presenteeism, which also induces adverse effects such as absenteeism and perceived strain (Anderson et al. 2002), has so far been relatively neglected by IS researchers (Chen and Karahanna Forthcoming). Within the IS discipline, Min (2016) assesses reversed presenteeism based on onetime interruptions through a social networking site and finds its consequences to be comparable to unique breaks. This finding stands in contrast to the IS and non-IS studies which find reversed presenteeism to significantly adversely affect work performance, absenteeism, and perceived strain (Anderson et al. 2002; Chen and Karahanna 2014). While Köffer et al. (2014), Yun et al. (2012), and Ahuja et al. (2007) argue that this reversed direction of presenteeism exists, they do not elaborate on this phenomenon and they do not empirically assess it. Finally, the majority of IS studies that assess work interference with non-work do not mention this reversed direction altogether (e.g., Avvagari et al. 2011; Ragu-Nathan et al. 2008; Sarker et al. 2010; Tarafdar et al. 2007, 2011, 2015). Consequently, this short paper proceeds to respond to the call for "... studies that investigate the other type of cross-domain interruptions (i.e., nonwork interruptions that occur at work) and its effects." (Chen and Karahanna Forthcoming, p. 35).

Outside the IS discipline, "[...] researchers have begun to realize that the various domains of an individual's life interact with one another and must be studied in an integrated manner and within a common framework [...] the fact that they [the work and family domain] interact is clear. It is this

interaction that has become important to understand because how individuals react to and deal with the interaction between the work and family domains have vital consequences for the individual and the organization" (Carlson and Kacmar 2000, p. 1031). Nonetheless, although Carlson and Kacmar (2000) study reversed presenteeism, they focus on non-IS related antecedents for reversed presenteeism such as 'marital status', and hence neglect IS related antecedents (e.g., Anderson et al. 2002; Carlson and Kacmar 2000). Yet, these non-IS antecedents originate in and primarily affect one particular domain only (Nohe et al. 2015), while IT-consumerization originates in and affects both the work- and non-work domain directly.

Thus, in this short paper, we aim to integrate and assess in one common framework how IT-consumerization effects the work- and non-work domain and how both domains eventually effect perceptions of strain. We focus on perceptions of strain, out of the numerous adverse effects of domain conflict on employees (Ayyagari et al. 2011; Carlson and Kacmar 2000), due to their severity. Furthermore, we focus on the non-work domain rather than the family domain, as critics voiced that employees without family pressures are underrepresented in studies (Parasuraman and Greenhaus 2002).

The remainder of this short paper proceeds as follows: in the subsequent section, we discuss boundary theory and the person-environment fit model. This theoretical background serves as the foundation for conceptualizing presenteeism, reversed presenteeism, and the advent of perceptions of strain. Subsequently, we develop those hypotheses that are tested in this short paper's pre-study and present the corresponding data collection and analysis. We conclude by presenting initial findings that help in explaining our extended research model and in anticipating future results.

# **Theoretical Background**

In this section, we briefly discuss boundary theory and the person-environment fit model. Together they lay the theoretical foundation for this study.

## **Boundary Theory**

A number of disciplines use the concept of boundaries to define the limits of certain separate domains. For example, in the field of Marketing, boundaries are used to discuss individuals' boundary-spanning activities. In Psychology, boundaries are useful in discussing the beginnings and ends of the self. One reason for employees (and any individual for that matter) to develop boundaries is to organize their environment; i.e., boundaries are drawn around seemingly related and associated domains such as geographical areas, people, ideas, etc. Thereby, boundaries permit individuals to focus on one domain while ignoring others (Ashforth et al. 2000). Such drawn domains can vary in their degree of spatial and temporal flexibility. Additionally, they can vary in their permeability, which refers to the degree of disconnectedness between individuals' physical and mental domain presence (Ashforth et al. 2000). Both flexibility and permeability affect the transition from one domain to the other. Such transition can happen rapidly; for example, if a person reads work e-mails on the smartphone while being in his/her non-work domain. Or the transition may be lengthy, for instance, if the commute between work and non-work is long (Ashforth et al. 2000; Cousins and Robey 2015).

The work- and non-work domains are, for the most part, socially constructed and institutionalized. Consequently, different individuals will mostly agree on what the domains refer to, such as the set of patterned activities, perceived expectations, and responsibilities, and the roles that are associated with the respective domains (Biddle 1986; Dubé 2014). Yet, the exact definition, especially regarding the preferred level of integration and segmentation of different domains, varies among individuals. That is, while two individuals may generally agree over the two domains 'work' and 'non-work', they may disagree on how much of the one domain may cross over into the other (Nippert-Eng 1996). Kreiner (2006) coins the process of integrating and segmenting two domains as 'boundary negotiation'. IT-consumerization (i.e., the phenomenon that individuals use private IT solutions for both work and non-work purposes) has powerful effects on this boundary negotiation. As IT-consumerization affects an individual's values regarding the level of preferred domain integration, and the level of domain integration that the individual's environment demands. This boundary negotiation induces perceptions of strain if it fails (Kreiner 2006). An individual will, for example, experience strain, if his/her expectations regarding the level of domain integration conflict with what his or her employer demands (Middleton and Cukier 2006).

One of the most widely used models to explain the emergence of perceived strain is by French et al. (1974), referred to as 'person-environment fit model' (Ayyagari et al. 2011). This model can be closely related to IT-consumerization. Additionally, this model circumvents two important issues: first, that too many studies rely on role conflict as an antecedent of domain conflicts (Parasuraman and Greenhaus 2002); and second, that most studies incorporate either individual or environmental predictors for domain conflict instead of measuring both (Kreiner 2006).

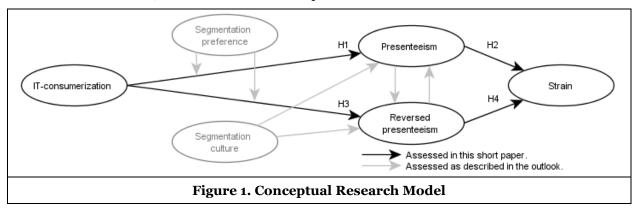
#### Person-Environment Fit Model

"Stress arises when an individual appraises the demands placed by the environment as exceeding the individual's resources" (Ayyagari et al. 2011, p. 833). Ayyagari et al. (2011, p. 834) further define stressors as "the events or properties of events (stimuli) encountered by individuals"; and strain as "the individual's psychological response to the stressors". Fox et al. (1993) distinguish between two broad theoretical perspectives to understand stress: the epidemiological perspective, which links for example industrial noise with coronary heart diseases, and the cognitive appraisal model, which is also referred to as the transactional perspective (Galluch et al. 2015). For this study, we embrace the latter perspective in which strain is induced through the transaction of individuals with their environment. Here transaction refers to the appraisal of, and coping with, the posed environmental challenges. Consequentially, strain is not solely a factor of the environment, nor solely of the individual (Ayyagari et al. 2011; Fox et al. 1993; Galluch et al. 2015; Lazarus 1991).

To understand the advent of perceptions of strain, we follow Galluch et al. (2015) and Ayyagari et al. (2011) and employ the person-environment fit model. This model assumes an equilibrium relationship between individuals and their environment. Thus, strain results from a loss of this equilibrium; or, in other words, from an insufficient person-environment fit. This person-environment fit can be divided into two kinds: the values-supplies-; and the abilities-demand fit. 'Values' refer to conscious desires like interests and preferences such as individuals' preferences regarding the level of integration of the work- and non-work domain. 'Supplies' refer to individuals' environments such as the digital infrastructures of organizations, which may facilitate or hamper the integration of the two domains. Further, 'abilities' refer to individuals' skills, knowledge, time, etc., and 'demands' refer to individuals' appraisals of the requirements that are placed on them; e.g., the perceived necessity to quickly reply to work (non-work) messages (Ayyagari et al. 2011). The values-supplies- and the abilities-demand approaches are complementary. Together they describe how well an individual and his/her environment meet the reciprocally imposed requirements.

# **Conceptualization and Hypotheses Development**

The conceptual research model in figure 1 is based on the boundary theory and person-environment fit model. It depicts (in black) the core research model, which is tested in this short paper, and (in grey) the extended research model, as delineated in the anticipated contribution.



Hypotheses one and three (H<sub>1</sub>, H<sub>3</sub>) discuss how IT-consumerization affects an individual's boundary negotiation, hence increasing presenteeism and reversed presenteeism. Hypotheses two and four (H<sub>2</sub>, H<sub>4</sub>) discuss how presenteeism and reversed presenteeism affect perceived strain.

## IT-Consumerization, Presenteeism, and Strain

The term 'presenteeism' has been diversely defined; for example, as working while being sick (Johns 2010) or as the degree to which digital solutions enable reachability (Ayyagari et al. 2011). The gist of both definitions is that employees work at the expense of their health or, slightly more abstract, that employees permit their work domain to interfere with their non-work domain despite potentially adverse consequences. Subsequently, we define presenteeism as the degree to which an employee's work domain interferes with his/her non-work domain.

One may argue that IT-consumerization entails productivity increases, since it permits employees to use known and intuitive digital solutions. Eventually this gain in productivity would reduce the necessity to work while being in one's non-work domain. Yet, IT-consumerization provides almost constant opportunity to work. But increased opportunity to work easily translates into increased pressure to work, as most working cultures increasingly reward those who are constantly available, work harder, and for longer hours (Ayyagari et al. 2011; Kouzmin and Korac-Kakabadse 2000; Spruell 1987). Hence, this leads to increased presenteeism and thus we hypothesize that:

## H 1 IT-consumerization leads to increased presenteeism.

The effects of increased presenteeism have been assessed in multiple studies (for an overview see Yun et al. 2012). Generally, two contradictory explanations exist on how presenteeism may affect an employee: the negative perspective argues that presenteeism hampers post-work recovery, which increases perceptions of strain; the optimistic perspective argues that presenteeism increases an employee's control over the domain boundaries, which facilitates the transition between these two domains (Piszczek 2017). We oppose the optimistic perspective as we argue that IT-consumerization reduces an employee's boundary control; i.e., boundary control refers to an employee's perception to have mental, physical, and temporal control over the timing, frequency, and direction of transitions between the work- and non-work domain (Kossek et al. 2012; Piszczek 2017). Yet, if an employee uses his/her privately owned digital solutions for work and non-work purposes, he/she can hardly anticipate if a certain digital solution will draw work- or non-work-related attention, as exemplified in the introduction.

Furthermore, increased presenteeism adversely affects an employee's person-environment fit: First, presenteeism directly affects employees' environment, which is reflected by an increased opportunity (i.e., supply) to work. Yet, as we explained previously, increased opportunity to work easily translates into increased pressure (i.e., demand) to work (Ayyagari et al. 2011; Kouzmin and Korac-Kakabadse 2000; Spruell 1987). Second, presenteeism adversely affects employees' ability to disengage from work. Finally, presenteeism per se does not affect employees' values to work more or to integrate the two domains. In combination, this unbalances employees' person-environment fit and leads us to hypothesize that:

H 2 Presenteeism leads to increased perceptions of strain.

## IT-Consumerization, Reversed Presenteeism, and Strain

In line with the definition of presenteeism, we define 'reversed presenteeism' as the degree to which an employee's non-work domain interferes with his/her work domain. For example, an employee may attend to his/her non-work domain within the stipulated office hours. Anderson et al. (2002) and Carlson and Kacmar (2000) discuss reversed presenteeism in the context of family interference with work. They find family structures and family obligations to be significant antecedents of reversed presenteeism.

We build on neutralization theory to base our claim that IT-consumerization increases reversed presenteeism. This theory explains certain techniques that permit employees to avoid the feeling of guilt for breaching policies, like the 'metaphor of the ledger'. With this metaphor, employees neutralize their actions "[...] by rationalizing that their overall past good behavior justifies occasional rule-breaking" (Siponen and Vance 2010, p. 491). In the context of this study, the good behavior is reflected by the professional use of private digital solutions to increase employee's work productivity; thus, a behavior which is beyond the scope of an employee's stipulated obligations. Such good behavior then 'permits' the employee to justify occasional rule-breaking, which is reflected by paying attention to non-work matters while being at work, as the previous good behavior neutralizes feelings of guilt or shame. Thus, we hypothesize:

H 3 IT-consumerization increases reversed presenteeism.

The fact that reversed presenteeism can induce perceptions of strain has, among others, been found by Anderson et al. (2002) and Nohe et al. (2015) in the context of work and family. We argue that reversed presenteeism induced by IT-consumerization affects perceptions of strain in both work and non-work contexts, beyond the more limited work/family context. This is because reversed presenteeism reduces an employees' person-environment fit, although neutralization techniques permit employees to avoid feelings of shame and guilt for paying attention to non-work matters while being at work: First, because reversed presenteeism reduces employees' available working time, as it is being consumed for non-work purposes, it negatively affects employees' abilities. Second, reversed presenteeism per se does not affect employees' values regarding the integration of the work and non-work domain; neither does it affect the work domain's demands and supplies. Consequently, IT-consumerization unbalances the person-environment equilibrium, which leads us to hypothesize that:

H 4 Reversed presenteeism leads to increased perceptions of strain.

# Methodology

The aim of the research project is to study the relationship between IT-consumerization, presenteeism, reversed presenteeism, and perceived strain, including the conditions that facilitate or limit their interrelations. Since the emphasis here is limited to the development of the corresponding model and an analysis of its feasibility, we restrict ourselves to a pre-study that provides first insights into the relationships between the four core constructs. Further, as we explained in the development of our hypotheses, we expect that IT-consumerization will adversely affect an employee's person-environment fit. We have, however, no expectation regarding the 'point of departure'. That is, we expect IT-consumerization to adversely affect an employee's person-environment fit independent from its fit without IT-consumerization.

#### **Measures and Data Collection**

Methodologically, we rely on existing scales that were slightly adapted to the context of this study. Items for the construct IT-consumerization were adopted from Junglas et al. (2018) and specified as a formative construct with three items covering consumerization through personal devices, software applications, and online services. The measures of person-environment fit follow a gestalt approach as suggested by Ayyagari et al. (2011) to obtain a direct measure of misfit or congruence. Accordingly, presenteeism and reversed presenteeism were measured reflectively with a total of nine items building upon the measures by Kossek et al. (2012) (e.g., 'I allow work to interrupt me when I spend time with my non-work acquaintances, family or friends' for presenteeism and 'I respond to personal communications (e.g., emails, texts, and phone calls) during work' for reversed presenteeism). The five items that reflect perceived strain are based on Anderson et al. (2002) (e.g., 'During the past 3 months, I often felt burned out or stressed by my work'). All items were assessed on 7-point Likert type scales.

To investigate the effects of IT-consumerization; i.e., the professional use of privately owned digital solutions (Harris et al. 2012; Ortbach et al. 2013), membership in the working society rather than studentship is the only requirement for participation in our pre-study. Due to these low requirements concerning the sample, we decided to obtain the data from Amazon Mechanical Turk - a platform, which connects around 400,000 registered users with micro task tenderers. Tenderers can offer their micro tasks to registered users, who receive a monetary reward for the processing of usually fairly simple tasks (Deng et al. 2016). To validate the hypotheses postulated in this pre-study, we obtained 75 responses that were assessed with Smart PLS 3 and bootstrapping using 5,000 subsamples.

# **Pre-study Results and Discussion**

Our research model consists of four variables and their interrelations; namely (A) employee's IT-consumerization behavior, (B) presenteeism, i.e. the interference of the work domain with the non-work domain, (C) reversed presenteeism, i.e., the non-work domain's interference with the work domain, and (D) perceived strain. Before assessing their interrelationships, we validated the measurement model in terms of internal consistency reliability (composite reliability), convergent validity (indicator reliability, AVE), and discriminant validity (Fornell-Larcker criterion; cross-loadings; heterotrait-monotrait ratio of

correlations). The measurement model fulfills all requirements as suggested by (Hair Jr et al. 2017) (detailed statistics had to be omitted due to space limitations). We also checked for variance inflation (below 1.2) and the largest correlation between any construct in the dataset was between IT-consumerization and presenteeism (r = .48)

Our results suggest a significant effect of IT-consumerization on presenteeism (H1:  $\beta$  = .42, p < .001) and on reversed presenteeism (H2:  $\beta$  = .48, p < .001). Presenteeism has a significant impact on perceived strain (H3:  $\beta$  = .26; p < .05), but we did not identify a significant effect of reversed presenteeism on perceived strain (H4:  $\beta$  = .13; p = .42). Thus, our pre-study provides support for H1-H3, while we have no evidence in favor of H4.

Our results suggest that IT-consumerization can be a source of two types of domain conflict: it induces tensions by spillovers from the work- to the non-work domain and vice versa. At the same time, we find that the interference of the work domain with the non-work domain causes strain. The fact that reversed presenteeism was not identified as a driver of perceived strain in our study is surprising since research in the work family context suggests a significant relationship between those two constructs (Nohe et al. 2015). In summary, the findings indicate the importance of understanding domain conflicts since the direction of the spillover effect seems to lead to distinct outcomes that are related to perceptions of strain and thus eventually also on well-being and work performance (Ayyagari et al. 2011). At the same time, it signifies the necessity to derive a deeper understanding of when and how reversed presenteeism induced by IT-consumerization increases perceptions of strain. Following this pre-study, we are therefore going to extend our model by introducing explanatory (mediating and moderating) variables for the tested relationships and by considering the interrelationships between the two types of domain conflicts.

# **Outlook and Anticipated Contributions**

After having established the basic relationships between the four core constructs, our findings reveal the necessity for an extension of our research approach in two ways. First, domain conflicts and their antecedents are specific to individual - and organizational factors (Köffer et al. 2014). Particularly, employees' segmentation preferences and organizations' segmentation culture were found to shape presenteeism (Köffler et al. 2014; Yun et al. 2012). Based on the differential impact of presenteeism and reversed presenteeism in our pre-study, we integrate those two factors in our extended research model to gain a deeper understanding of the relationships between IT-consumerization and the two types of domain conflict. Second, the results of our pre-study also necessitate a better understanding of the effects of presenteeism and reversed presenteeism themselves. Literature assessing both constructs in the context of work to family conflict, identifies a significant, positive, direct, and reciprocal relationship between both constructs (Nohe et al. 2015). We consequently include this reciprocal relationship to meet the demand for a deeper understanding of the effects of both constructs beyond their effect on perceived strain.

Thus, upon completion of the full study, we anticipate to make a number of distinct contributions to IS research. First, our study will contribute to the IT-consumerization literature by improving the understanding of how IT-consumerization affects employees' use behaviors of digital solutions, and in particular, how IT-consumerization affects cross-domain use behaviors (i.e., presenteeism and reversed presenteeism). This extends current IS research models that predominantly focus only on how ITconsumerization affects presenteeism. Moreover, this research will extend non-IS research models that omit digital antecedents (Nohe et al. 2015). Second, our study will contribute to the domain literature by furthering the understanding of how IT-consumerization affects employees' boundary negotiation between the integration and separation of the work- and non-work domain. Additionally, we contribute to the domain literature as we particularly focus on the reciprocal effects of the interference of both domains with each other. Third, this study will contribute to the understanding of the person-environment fit model as we employ it as our theoretical perspective, and as it thus mandates our measurement items. Thus, the assessments of the effects of IT-consumerization on the equilibrium of the person-environment fit model will help to deepen our understanding of its explanatory power. Finally, our study will contribute to IS research by simultaneously assessing how IT-consumerization affects presenteeism and reversed presenteeism, how these affect each other, and how they eventually affect perceptions of strain in one integrated model. We thereby aim at broadening the scope of prior studies that assess the effects of ITconsumerization on either the work- or non-work domain only.

Our study will also present important implications for managers. Today, IT-consumerization concerns a large number of employees (Junglas et al. 2018) and will increasingly do so. Thus, it is important for employers to understand how the governance of IT-consumerization will likely affect employees' motivations, behaviors, perceived strain, and consequently their productivity.

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