Conceptualization, Operationalization, and Empirical Evidence for an Individual's Dispositional Resistance to IT-Induced Changes

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ABSTRACT

As information systems (IS) usage is the missing link from information technology (IT) investments to the business value impact of IT (DeLone and McLean 2003), it is a significant issue for IS researchers and practitioners, if individuals resist using these systems. Several recent models have been developed in order to offer insights which perceptual beliefs foster user resistance. Results reveal perceptual beliefs as perceived threats, technostress, or switching costs as major determinants for user resistance. Nevertheless, user resistance has not been researched from a perspective of predisposed individual differences so far. Consequently, this paper proposes the new construct dispositional resistance to IT-induced changes. This reflects inclinations to resist any kind of IT-related change and discusses resistance from the perspective of individual differences. Within this approach, it is theoretically hypothesized, how this inclination influences perceptual beliefs, intentions, and behaviors. Empirical results reveal strong impacts of the newly proposed construct on technostress.

Keywords

Dispositional Resistance to IT-induced Changes, Personality Traits, Technology Adoption Behavior, User Resistance, Technostress, Scale Development.

INTRODUCTION

Why some individuals accept newly implemented technologies and others resist them, are two of the most widely studied questions in IS-research (Williams et al. 2009). The significance of this two-folded question is reflected in the high impact of IT in organizations as IT is critical for organizations' survival and profit (Melville et al. 2004). However, the full potential of IT can often not be exploited as individuals resist IT-induced changes. To be able to fight this phenomenon, prior research concentrates on examining which perceptual beliefs foster such resistant behaviors (Kim and Kankanhalli 2009). Nonetheless, it has not been researched so far, which factors are responsible that some individuals have negative perceptual beliefs fostering user resistance more often than others. Here, research suggests external factors as individual differences as a source of such perceptions (Ajzen and Fishbein 1980; Devaraj et al. 2008) providing essential insights in understanding the origins of perceptual beliefs.

In order to investigate individual differences influencing perceptions about IT, we conducted several case studies with organizations introducing new information systems within their human resources (HR) department. In this process, several project managers of different organizations make always comparable statements that "*when planning the introduction of a new IT, always the same employees complain about the change, create negative atmosphere, and try to avoid using the IT. I got the impression they simply do not like IT and complain about, resist, or get stressed by every change an IT innovation induces in our organization.*"[1] This suggests that individuals differ regarding their general opinion about a specific IT innovation based on their predisposed inclination to resist IT-related changes. Consequently, this research approach focuses

[1] Our research is based on several observations of information system implementations in the HR context, which are used here to motivate the development of the new scale. Over a period of more than five years, the authors conducted case studies to understand the impact of IT on the work routines of HR personnel. The examples used in the paper are derived from more than 50 interviews with HR experts or HR personnel of several large- and medium-size organizations (for some of these case studies, see Laumer and Eckhardt (2010); Laumer et al. (2012); Maier (2012)).

on this phenomenon, suggests, conceptualizes, and operationalizes a new concept that reflects these individual differences concerning the predisposed inclination to resist IT-induced changes. This construct is based on recent psychological research broaching the issue of dispositional resistance (Oreg 2003). In this paper we will provide first theoretical foundations and empirical evidence for the newly developed concept of dispositional resistance to IT-induced changes (DRITC) and its influence on individuals' perceptions and behaviors related to information systems.

THEORETICAL BACKGROUND AND CONCEPT DEVELOPMENT

Technology Adoption Research

Williams et al. (2009) review articles discussing technology adoption and identify 345 articles in the top 19 peer-reviewed journals of the community over the last 20 years. Most of them examine why individuals adopt technologies and identify perceptual beliefs as performance expectancy or effort expectancy influencing usage behavior (Venkatesh et al. 2003). However, over the last years, more and more researchers also start to discuss which perceptual beliefs foster non-usage or user resistance behaviors (Polites and Karahanna 2012). This is essential, as non-usage or user resistance is not just the opposite side of acceptance. This development is observable since Cenfetelli (2004) provides theoretical evidence that usage is driven by other perceptions than non-usage behavior. He posits that negative perceptions as perceived threats are a main contributing factor for non-usage behavior. Based on that, research concentrates on identifying perceptual beliefs fostering non-usage and user resistance behaviors. Among others, switching costs, switching benefits, (Polites and Karahanna 2012), technostress (Ragu-Nathan et al. 2008) or perceived threats (Bhattacherjee and Hikmet 2007) are identified as influencing perceptions. Prior approaches investigating user resistance have in common that they focus the specific change situation and the characteristics of the respective information system as driver of resistance behavior. Thus, the impact of individual differences is only discussed as an accompanying effect; also technology acceptance research has discussed this phenomenon in more detail as explained in the following paragraphs.

Next to perceptual beliefs, technology adoption research also focuses on researching factors influencing perceptual beliefs. Here, individual differences are identified as influencing factors (see Maier 2012 for a review). These are factors such as predisposed personality like extraversion or neuroticism (McCrae and Costa 2001) situational, or demographical variables as age, which are grounded in biology and have an influence on individuals' perceptual beliefs about and use of IT (Thatcher and Perrewé 2002). Their significance in the context of human behavior research is highlighted years ago by Ajzen and Fishbein (1980), who suggest that dissimilarities across individuals determine perceptual beliefs to a certain degree. In addition, Agarwal (2000) emphasizes theoretically that individual differences are an influencing factor for beliefs, attitudes, and the acceptance of IT. This is also proven empirically in further approaches (Devaraj et al. 2008).

In line with Thatcher and Perrewé (2002), the described general understanding of individual differences has to be distinguished in situation-specific individual differences on the one side and broad individual differences on the other side. Research categorizes personal innovativeness in IT (Agarwal and Prasad 1998), computer self-efficacy (Marakas et al. 2007), or computer playfulness (Webster and Martochhio 1992) among others as situation-specific individual differences. These reflect how individuals differ concerning their situation-specific patterns of behaviors, thoughts, and emotions. In the context of IT, IT-specific differences reflect how individuals differ in their thoughts, emotions and patterns concerning the usage of IT. In contrast to situation specific differences, broad and stable individual differences as the Big Five are cross-situational and temporally stable (McCrae and Costa 1987).

Both types of individual differences are integrated in theories and models of IS research. Devaraj et al. (2008), Junglas et al. (2008), and McElroy et al. (2007) investigate the effect of the broad and stable differences as extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience on perceptual beliefs and usage behaviors in distinct IT-related settings. Results of these articles reveal that they have an influence on perceptual beliefs. Other articles concentrate on IT-specific differences as personal innovativeness with IT (PIIT), which is a widely studied IT-specific individual difference in IS research. It reflects individuals' willingness to try out new IT. While validating the scale of PIIT, Agarwal (1998) confirms an effect on computer playfulness. In (2002), Thatcher and Perrewé identify PIIT as an antecedent of computer anxiety and computer self-efficacy. Next to its influence on cognitive absorption (Agarwal and Karahanna 2000), the effect of this IT-specific individual difference is investigated concerning its impact in the technology acceptance model. Lewis et al. (2003) suggests PIIT as antecedent of perceived usefulness and Lu et al. (2005) extends this knowledge by validating its significant effect on perceived ease of use.

Of particular interest are articles comparing the influence of IT-specific and general differences on perceptions (Marakas et al. 2007). Results of these researches reveal that IT-specific differences have a significantly higher explanatory power for perceptual beliefs than general traits. Based on this prior research on individual differences, this research approach

establishes a more IT-specific construct of dispositional resistance to IT-induced changes, which is expected to explain a significant variance of IT-related perceptions. In the following section, the concept of dispositional resistance to IT-induced change is introduced and conceptualized as a situation-specific trait (Thatcher and Perrewé 2002), which is valid when researching IT-related behaviors and beliefs.

Dispositional Resistance to IT-induced Changes

Dispositional resistance to IT-induced changes represents a concept that is designed for research focusing on the phenomenon of user resistance from a perspective of predisposed individual differences. It is defined as an individual's predisposed inclination to resist IT-induced changes and models an individual's basic tendency towards changes caused by IT (McCrae and Costa 2001). Based on this definition, we have to acknowledge the analogy to dispositional resistance to change, which has been proposed by personality research as predisposition and hence as stable individual traits to resist any change in general and thus depicts a broad, stable, and general personality trait (Oreg 2003). Nonetheless, we develop the new concept DRITC, because more specific predispositions have a greater impact on perceptions than general predispositions (Paunonen and Ashton 2001). Thus, the following section describes the origin of the proposed concept.

The Origin of Dispositional Resistance to IT-induced Changes

The concept of dispositional resistance to IT-induced change has its origin in personality research and especially in the general, broad trait of dispositional resistance to change. Here, it is defined as dispositional inclination to resist changes (Oreg 2003) and has been proposed based on an extended literature review of resistance to change research. Within this review, six causes that foster resistance and are derived from personality are identified. Based on research of Conner (Conner 1993), who reveals the loss of control as major factor fostering resistance, Oreg (2003) names reluctance to lose control as one cause for preferring the status quo. Another factor fostering resistance that has its origins in predispositions is cognitive rigidity. In particular, dogmatism and closed-mindedness foster individuals' willingness not to adjust to unknown situations (Fox 1999). Lack of psychological resilience is the third identified source and raises feelings that changes are perceived more or less as a kind of stressful situation (Judge et al. 1999). The intolerance to the adjustment period involved in change suggests that individuals can support a change but still prefer the status quo as new situations require a plenty of additional work in the short term (Kanter 1985). Others have a general preference for low levels of stimulation and novelty so that they would neither support not prefer changing habitual routines. The last source of resistance that lies in individuals' personality is reluctance to give up old habits. (Oreg 2003)

Based on these sources, a scale named resistance to change is developed that captures directly individuals' predisposed inclination to resist changes in general (Oreg 2003). This scale is divided into three (Oreg 2003) or four sub-dimensions (Oreg et al. 2008), as it is suggested that dispositional resistance to change is sourced in individuals' routine seeking, cognitive rigidity, and an affective factor. The affective factor can be distinguished into the factors emotional reaction and short-term focus to transform the three-factor model into a four-factor model of dispositional resistance to change.

This psychological scale is recently used in IS research. Polites and Karahanna (2012) make use of this predisposition as control variable, while investigating the effects of inertia and status quo bias theory on technology perceptions. They provide empirical evidence that the predisposition is closely related to employees' attitude to maintain the status quo. The influence of dispositional resistance to change on the three attitudinal beliefs utilitarian, hedonic, and social outcomes are also investigated in the household context (Maier et al. 2011). Results reveal that the affective factor short-term focus is in particular of importance for adopters' of networking sites, whereas routine seeking is the main contributing factor for current non-adopters.

Dimensions of Dispositional Resistance to IT-induced Changes

Based on the definition of dispositional resistance to IT-induced change as a situation-specific personality trait (Thatcher and Perrewé 2002) and its origin in personality research (Oreg 2003), we also assume six dimensions of an individual's inclination to resist IT-induced changes. In the context of IT, reluctance to lose control reflects individuals' worries that one loses control over the current situation. Among others, Bhattacherjee and Hikmet (2007) describe this situation and verify that some resist due to this fact IT-induced changes. During our interviews[1], a project manager mentions that some employees resist using IT-induced staff selection methods, as they fear that they cannot apply the right criteria to select these candidates that will be employed. This represents one example for the loss of control of HR employees. Another cause is that some individuals are rigid toward IT innovations, so that for example, HR managers' report that employees are not willing to understand the advantages of innovative IT. Besides, the reason to resist IT changes can also be inherent in individuals' resilience, as one manager reports that almost no employee, who has coped IT changes effectively, resist its usage afterwards.

In addition, IT changes entail effort in the short term. Among others, employees have to exercise working with the new IT, but this acts as a deterrent, as we noticed during the case studies. Here, employees have reported that they are not willing to accept short-term efforts as to work overtime in order to participate in training courses, even if this simplifies work in the long-term. Another reason for resisting IT changes is the preferred level of novelty. Interviews with employees indicate that individuals, who accept IT changes, have both lots of new technologies at home, and prefer experiencing new things in their private life. The last reason, reluctance to give up old habits is also of significance in the context of IT. Polites and Karahanna (2012) report that individuals have a higher attachment to their existing IT-related habits than others have. This is confirmed within our series of interviews as employees of the HR department quote that they internalized the past procedure and its skills, so that they do not intend to let go of these habits.

Dispositional Resistance to IT Changes and its Influence on IT Acceptance and User Resistance

As recent research discuss user resistance as a central phenomenon in technology adoption research (e.g., Polites and Karahanna 2012) and individual differences as situation-specific traits influence, how individuals perceive technologies (Agarwal and Prasad 1998), dispositional resistance to IT-induced changes (DRITC) represents an IT-specific trait, which is essential to research the phenomenon of user resistance from a perspective of predisposed individual differences. In this context, the influence of DRITC on individuals' perceptions and decision-making process to use IT or not is multifaceted. In a first step, it might affect perceptual beliefs such as effort expectancy, performance expectancy, or technostress. Ajzen and Fishbein (1980) argue theoretically that individual differences depict external factors, which have an influence on perceptual beliefs. This means that individuals, who score high on DRITC and have a high general negative tendency towards any IT, innovation, perceive an specific IT innovation changing aspects of their private or business life more often as stressor, appreciate IT as less useful, and difficult to use. Thus, we assume, that

> *H1: Dispositional Resistance to IT-induced changes has an impact on how an individual perceives a specific IT innovation in his/her private or business life, such that those individuals high on Dispositional Resistance to IT-induced changes perceive IT more negatively.*

In addition, we assume that DRITC affects, whether individuals' transfer intentions into behaviors or not. Consequently, it is assumed that relation between behavioral intentions and behaviors will be moderated by individual differences (Ajzen 2002). This is due to the connection between hypothetical intentions and far-reaching behavioral consequences. Hypothetical intentions are often overestimated, by neglecting costs as behavioral efforts, which are included within behaviors. Especially low resistant individuals will neglect efforts as working additional overtime or even ignore risks by being overwhelmed by the idea of changing IT and thus overestimate positive characteristics of IT-induced changes. In contrast, high resistant individuals will underestimate the potential of IT-induced changes but overestimate efforts, which are linked with changes. This is in particular due to their short-term focus so that high resistant individuals are not willing to take hazards and thus are independent of their intentions less willing to change behaviors (Oreg et al. 2008). Thus, we assume that

> *H2: Dispositional Resistance to IT-induced changes moderates the relation between intentions and behaviors.*

To verify the assumption that DRITC is an important predictor of an individual's beliefs and behavior related to IT-innovation the following section develops and validates a measurement model to capture an individual's inclination to resist IT-innovation in general which can be used to analyze and discuss the impact of the proposed concept on technology acceptance or user resistance models.

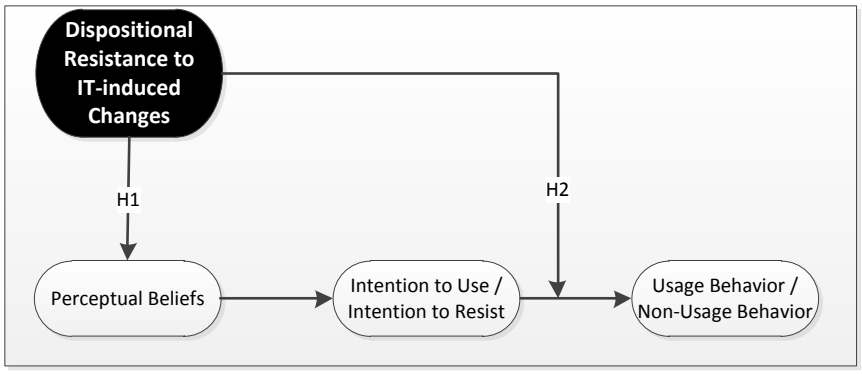

Figure 1: Hypothesized Effects of DRITC on Technology Acceptance Constructs and Relationships

CONSTRUCT DEVELOPMENT AND EMPIRICAL EVIDENCE

Based on the theoretically development of the concept of dispositional resistance to IT-induced changes, within this section we develop and validate a measurement model and provide empirical evidence that the newly proposed concept influences individuals perceptual beliefs.

Scale Development and Research Study Design

Based on the discussed six predisposed sources of resistance, which are caused in personality as well as the general resistance to change scale (Oreg 2003), we developed a scale for dispositional resistance to IT-induced changes scale. Therefore, we discussed the specific characteristics of IT and matched them with the six sources of resistance. The result of this step was a list of nineteen questions, in which each question reflected at least one source of resistance.

In a next step, this list was discussed with students and we asked them to read each question and rate its comprehensibility. During this step, three items had to be removed. The remaining sixteen questions were included within an online-survey and complemented by questions concerning perceptual beliefs, behavioral intentions, and usage behaviors in the context of social networking platforms in August 2011. To generate a high number of respondents, we sent out 400 emails in which we asked participants to take part in our survey. These emails were collected in prior surveys, in which participants agreed that we can contact them for upcoming surveys. Hence participants are of different age, have distinct educational backgrounds and participate in a voluntary manner. To motivate individuals to take part, we raffled a digital camera and a navigation device. In the end, 174 individuals fulfilled the survey completely and their responses represent the basis for the following results. In Table 1, the demographical data of all participants are provided.

Gender		Age					
Men	Women	<20	20-29	30-39	40-49	50-59	>59
35.1%	64.9%	2.9%	42.6%	17.7%	18.7%	9.9%	8.2%

Table 1: Demographics of the 174 participants

Validation of the DRITC Measurement and its influence on the Perception Technostress

The key property of any measurement model is construct validity. For validating the proposed dispositional resistance to IT-induced change scale, a principal axis factor analysis with varimax (orthogonal) rotation is used. Next to the developed items of DRITC, the items of a scale in a related domain, namely PIIT (Agarwal and Prasad 1998) were pooled and factor-analyzed in order to evaluate validity with the help of standard procedures from recent literature concerning reflective measurement models. Results reveal a three-factor model for DRITC, as it is suggested in general resistance to change research (Oreg et al. 2008). These three factors are provided in Table 2 and consist of the three dimensions; routine seeking, affective factor, and cognitive rigidity. In addition, Table 2 verifies that PI IT falls on a separate factor.

Label	Question	Component			
		1	2	3	PIIT
DRITC-1	While dealing with IT, I would rather be bored than excited.		0.858		
DRITC-2	I generally consider IT changes to be a negative thing.		0.660		
DRITC-3	I prefer the daily work with known IT than with unknown IT.		0.528		
DRITC-4	For me, changes to information technologies are regarded positively (reverse).		0.585		
DRITC-5	If I would be informed that there's going to be a significant change regarding the IT, I would probably feel stressed.	0.837			
DRITC-6	I feel a bit tense when being informed that IT, which I have used daily will be changed.	0.898			
DRITC-7	I become a bit nervos, when hearing about plans in which IT changes are discussed.	0.929			
DRITC-8	If someone determines me to use IT, I feel uncomfortable.	0.685			
DRITC-9	When I am informed of IT changes, I tense up a bit.	0.781			
DRITC-10	For me, IT changes depict an additional burden.	0.825			
DRITC-11	IT changes seem like a real hassle to me.	0.806			
DRITC-12	Even if IT simplifies my life, I feel a bit uncomfortable concerning IT changes.	0.813			
DRITC-13	When someone pressures me to use new IT, I tend to resist it even if I think the change may ultimately benefit me.	0.675			
DRITC-14	Once, I have come to a conclusion concerning an IT, I am not likely to change my mind.			0.578	
DRITC-15	My opinion that I have after using IT for a long time, is often equal to my inital evaluation.			0.864	
DRITC-16	My views concerning IT are very consistent over time.			0.855	
PIIT-1	If I hear about a new information technology, I would look for ways to experiment with it.				0.912
PIIT-2	Among my peers, I am usually the first to try out new information technologies.				0.920
PIIT-3	In general. I am hesitant to try out new information technologies.				0.892
PIIT-4	I like to experiment with new information technologies.				0.521
EIGENVALUE		8.120	1.797	1.257	2.923

Table 2: White-labeled DRITC-Items are included within the final Measurement

Additionally, we intend to verify indicator reliability, construct reliability, and discriminant validity, which depict other standard criteria to verify reflective measurement models. Therefore, PLS-technique is used.

For this purpose, we investigate the influence of the well-studied IT-specific individual PIIT (Agarwal 2000) and the newly introduced IT-specific individual difference DRITC on a negative perception of IT. In this context, technostress has been proposed by prior research (Ragu-Nathan et al. 2008) as a negative perception of IT and is defined as stress that is experienced by users of ICTs. It consists of the five sub-dimensions *overload*, *invasion*, *complexity*, *insecurity*, and *uncertainty* (see table 3), and depicts an individual's perceptual belief (Ragu-Nathan et al. 2008). With technostress, a negative perceptual belief is chosen out of the potential beliefs about a technology (e.g. switching costs, effort and performance expectancy) as DRITC depicts a negative associated predisposition.

Thus, we will focus on technostress as a dependent variable in our research model to explain the influence of the suggested DRITC concept on perceptual beliefs about IT. If an individual has a higher inclination to resist IT-induced change, a higher technostress will be perceived. Therefore, we assume a direct positive correlation between DRITC and technostress (see Figure 1 with technostress as perceptual belief) as well as a positive one between our control variable personal IT innovativeness and technostress. In the following, we will validate this influence based on a PLS analysis of these constructs such that indicator and construct reliability as well as discriminant validity of the suggested measurement model have to be observed.

Concerning *indicator reliability*, which shows the proportion of the variance of an indicator that derives from the relevant latent variables, all indicators should be 0.707 or higher to guarantee that at least 50 per cent of the variance of a latent variable is explained by the used indicator (Carmines and Zeller 2008). This is fulfilled for all indicators except for DRITC-1 and DRITC-14 (Table 2). Nonetheless, DRITC-1 is maintained within the model as it is greater than 0.6, which is enough for newly developed scales (Hulland 1999). However, the item DRITC-14 is removed as the corresponding loading is beneath this threshold.

Construct reliability is guaranteed by focusing on Composite Reliability, which should be 0.7 or higher and Average Variance Extracted (AVE) that should be 0.5 or higher (Fornell and Larcker 1981; Bagozzi and Yi 1998). These two criteria are fulfilled for each construct, as visualized in Table 3.

Discriminant validity indicates the extent to which measurements differ from others that theoretically should not be equal (Campell and Fiske 1959). To verify that this holds true in the following model, construct correlations should be smaller than the square root of the corresponding AVE (Hulland 1999; Fornell and Larcker 1981). As this is also true (Table 3), the whole measurement model is valid.

Constructs			# of Indicators	Mean	S.D.	Factor Loadings	Composite Reliability	AVE	Cronbach's Alpha	Latent Variables Correlation								
										1	2	3	4	5	6	7	8	9
Resistance to IT-induced Changes	1	Routine Seeking	4	3.51	1.16	0.605-0.869	0.872	0.597	0.753	0.773								
	2	Affective Factor	9	3.31	1.40	0.708-0.898	0.954	0.698	0.945	0.694	0.835							
	3	Cognitive Rigidity	2	4.53	1.15	0.761-0.958	0.923	0.748	0.703	0.008	-0.068	0.865						
Control	4	Personal Innovativeness of IT	4	3.88	0.85	0.750-0.906	0.748	0.709	0.799	-0.504	-0.454	-0.125	0.842					
Technostress	5	Techno-Overload	5	3.76	1.43	0.729-0.918	0.923	0.707	0.894	0.367	0.463	0.003	-0.251	0.841				
	6	Techno-Invasion	3	3.48	1.31	0.708-0.876	0.813	0.594	0.701	0.099	0.203	0.095	-0.066	0.403	0.771			
	7	Techno-Complexity	3	3.15	1.27	0.842-0.890	0.904	0.759	0.841	0.485	0.696	-0.056	-0.310	0.396	0.210	0.871		
	8	Techno-Insecurity	4	2.63	1.12	0.760-0.878	0.898	0.688	0.848	0.439	0.522	-0.019	-0.154	0.455	0.483	0.572	0.829	
	9	Techno-Uncertainty	4	5.86	1.19	0.925-0.950	0.966	0.877	0.953	-0.115	-0.120	0.316	0.003	0.005	-0.011	-0.115	-0.300	0.936

Note: All loadings are significant at $p < 0.001$; Square Root of AVE is listed on diagonal by Latent Variables Correlations and is highlighted.
PIIT is measured using the four items proposed by Agarwal and Prasad (1998)
Technostress is measured using items of Ragu-Nathan et al. (2008), but some items have to be removed due to small loadings

Table 3: Quality Criteria of DRITC and Validation of the Measurement Model

Subsequent, the structural model is focused (Figure 2). In particular the coefficient of determination (R^2) and the significance levels of each path coefficient are discussed in order to evaluate the structural model. The two IT-situation specific individual differences PIIT and DRITC explain 51 percent of individuals' negative perception technostress. Both, DRITC as well as technostress is conceptualized as a second-order formative, reflective first-order construct. This is in line with recent research in technostress (Ragu-Nathan et al. 2008) and in research discussing the conceptualization of second-order constructs (Jarvis et al. 2003). By focusing the path coefficients, results reveal a highly significant influence of DRITC on the creators of technostress, whereas PIIT has no significant influence.

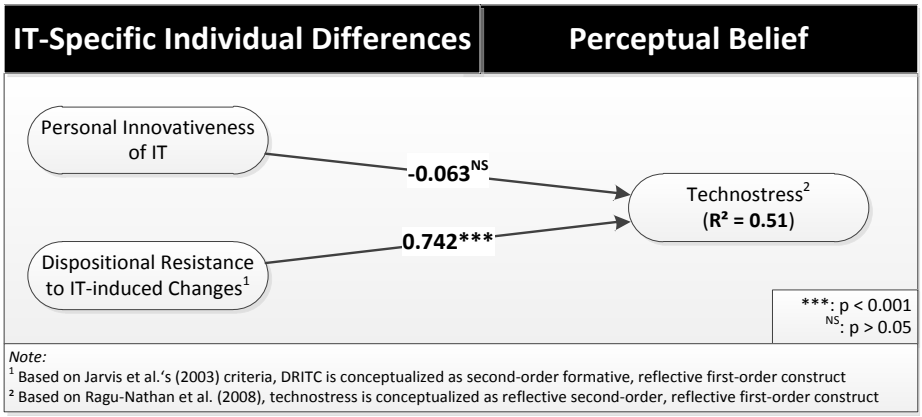

Figure 2: Research Results: The PLS-Model

Subsequent to that, a post-hoc analysis is performed to investigate the strength of effect of DRITC on creators of technostress (Table 4). Here, results unfold a strong strength of effect of DRITC on technostress (Cohen 1988).

Independent Variable	PIIT	DRITC
Dependent Variable	Technostress	
f^2	0.000	0.625
Interpretation	no effect	strong effect

Note: PIIT = Personal Innovativeness in IT; DRITC = Dispositional Resistance to IT-induced Changes
f^2 = Effect size of the independent variable(s) on the dependent variable.
$f^2 > 0.35$ = strong, $f^2 > 0.15$ = medium, $f^2 > 0.2$ = weak (Cohen, 1988)

Table 4: Post-hoc Analysis: The Strength of Effect

In addition, the Haman-single-factor test is run to verify that the underlying data do not include common method variance. The test examines, whether the majority of the variance can be explained by one factor. To ensure that no signs of common method bias are observable, it is commonly required that less than 50 percent of the variance is explained with one factor. In the case of this article, results reveal that 27 percent of the variance is explained with one factor so that no signs of common method bias are observable (Podsakoff et al. 2003).

DISCUSSION, FUTURE RESEARCH, AND LIMITATIONS

This research suggests a new IT-specific individual difference for explaining negative cognitions and perceptions about IT. The proposed dispositional resistance to IT-induced changes (DRITC) reflects individuals' predisposed inclination to resist changes in the context of and an individual's basic tendency towards IT and the corresponding IT-induced changes. We suggest six sources of DRITC, which are grounded in an individual's personality such that the proposed concept is a situation-specific trait (Thatcher and Perrewé 2002) that is valid when researching IT-related beliefs and behaviors

In order to enable an empirical based discussion of this phenomenon a three-factor model is provided based on Oreg et al. (2008). The first factor is named routine seeking and reflects individuals' preference for an ongoing routine concerning the use of IT. The second one is called cognitive rigidity and reflects that some individuals are more consistent within their views about IT than others. The third one is an affective factor and includes individuals' emotional reaction when being informed about new IT innovations or IT-induced changes as well as their short-term focus.

For the resulting second-order construct DRITC, two hypotheses are theoretically derived. We assume that the newly derived construct is an antecedent of perceptual beliefs as well as a moderator of the intention-behavior relation. For the effect of DRITC on perceptual beliefs our approach shows that it influences negative beliefs about technologies like technostress.

In this context, we investigate the influence of two IT-specific individual differences on technostress, whereby technostress is chosen as it reflects a negative perception about the usage of IT. For the two IT-specific differences, the widely PIIT is selected as well as the newly developed DRITC. In this context, both individual differences fall into distinct components within the conducted factor analysis (see Table 3), so that both represent distinct constructs, and PIIT is not just the opposite of DRITC. PIIT concentrates on individuals' willingness to try out new IT, whereas DRITC focuses the *predisposed inclination* to maintain the current IT status quo and the basic tendency of an individual towards IT (McCrae and Costa 2001). Thus, PIIT concentrates solely on the willingness to try out IT, whereas DRITC includes a wide range of predisposed sources that lead to preferences to maintain the status quo. Results of this small research model reveal that 51 percent of the variance of technostress is explainable through two IT-specific differences. It is in particular of interest that personal innovativeness in IT has no impact, whereas DRITC has a strong effect on technostress (Cohen 1988). Consequently, we can contribute to technostress-research that predisposed individual differences concerning DRITC is of high importance when investigating technostress-antecedents.

The empirical validation for DRITC as moderator of the intention-behavior relation has to be done in future research. This is not included within this research as longitudinal data would be necessary and we only performed a single point of time study to validate the concept in general. Nonetheless, the theoretical argumentation for moderating the intention-behavior relation is presented within this approach.

Based on this knowledge, future research can benefit in two different ways. First, DRITC can be integrated in new research models and theories as predisposed control variable. Besides, the IT-specific individual difference can be used to research its influence on a wide range of perceptual beliefs. This helps to understand how and why perceptual beliefs are developed. Here, DRITC represents a promising factor as a high explanatory power in technostress is revealed in this article and prior research emphasizes the superiority of situation-specific individual differences over general differences (Marakas et al. 2007).

Future research might investigate, which measurement supports organizations to reduce consequences of DRITC. General management literature supposes modernity climate, empowering leadership, and supportive coworkers among other as measures to reduce the influence of the general dispositional resistance to change on creative performance (Hon et al. in press). However, for IT-specific DRITC, research might investigate if these or other measures help to overcome this new phenomenon. This knowledge would encourage organizations to exploit the potential of IT. Besides, DRITC and the more general dispositional resistance to change (Oreg 2003) have to be compared. Here, it should be examined whether all individuals who score high on dispositional resistance to change score also high on DRITC or whether some individuals like general changes but not IT-related changes.

This research includes also some limitations, which might be addressed in further research. First, this research includes just one particular perceptual belief in the measurement model. Here, technostress is chosen, but future research might investigate the effect of DRITC on other perceptual beliefs, which are included in prior technology acceptance models as effort expectancy, performance expectancy, or attitudinal beliefs. Second, the dimension of DRITC, routine seeking, includes an item with a loading of smaller than 0.707 (DRITC-1). Here, further research should try to rephrase the item, even if it is no problem when measurements are used for the first time (Hulland 1999). A part from that, the sub-dimension cognitive rigidity includes just two items. This is as one item has to be removed due to its inappropriate loading (DRITC-14). Although recent research measures several constructs just with the usage of two items (e.g. Polites and Karahanna 2012), we encourage future researchers to add additional items.

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