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“I just cursed and opened a beer”: **Explaining Mobile Users' Non-Complaining Behavior Through Coping**

Completed Research Paper

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Abstract

Many users experience frustrating incidents with mobile applications. However, most users do not complain about their highly negative incidents to the application providers. Such dissatisfied non-complainers cause damage to application providers: they tend to exit, switch, and spread negative word-of-mouth. Therefore, it is important to understand why mobile users do not complain about their highly negative incidents. Within information systems (IS), there are no explanations for this dilemma. To address this gap, we conducted a qualitative study. By utilizing the theory of coping as a theoretical lens, we generated a mobile-specific theory that comprises problem-focused and emotion-focused coping strategies as well as control aspects. As a theoretical contribution, we attempt to advance IS research on post-adoptive behaviors and offer one answer to the calls for studying the role of emotions within IS. We also provide practical implications for application providers to better support their users to cope with negative incidents.

Keywords: Non-complaining, post-adoptive behavior, coping, mobile application

Introduction

Nowadays, mobile applications have a significant influence on humans' lives and daily routines. Particularly, many of us have experienced or observed negative incidents with mobile applications that are crucial for the course of everyday events. For example, a mobile application could fail to provide an electronic train ticket just before the train leaves and a user would have to buy a more expensive ticket from the conductor instead. Sometimes, such negative experiences of mobile applications also affect other people. For instance, a whole group of snowboarders may be freezing on top of a mountain while waiting for one of their fellows to set up a mobile sports tracking application.

However, a vast majority (94%) of mobile application users do not complain to the application providers about their highly frustrating experiences (Salo and Makkonen, 2014). This dilemma is important, because non-complaining customers can cause serious damage to product and service providers

(Davidow, 2003): dissatisfied yet silent users tend to quit usage without informing the providers about their reasons, switch to competing alternatives, and spread negative word-of-mouth about the products and services (Chebat, Davidow, and Codjovi, 2005; Stephens and Gwinner, 1998; Voorhees, Brady, and Horowitz, 2006). Retaining these silent users is vital, since it is much more expensive to attract new customers than to keep old ones (Fornell and Wernerfelt, 1987; Liu, Guo, and Lee, 2011). Therefore, it is crucial for product and service providers to understand the reasons why dissatisfied users remain silent.

Within information systems (IS), there appears to be no theoretical explanations for the dilemma of dissatisfied customers remaining silent.¹ In this study, we aim to explore and understand mobile users' non-complaining behavior by asking the following research question: *Why do mobile application users not complain about their highly negative incidents?* We conducted a qualitative study, since qualitative methods enable researchers to attain rich, context-specific insights of an uncovered phenomenon (Berg, 2004; Venkatesh, Brown and Bala, 2013). As a result of our initial data analysis, we adopted the theory of coping (Lazarus and Folkman, 1984) as a theoretical lens. Using this theoretical lens benefited our research by raising our initial analysis to a higher level of abstraction. Previously, IS researchers have recognized that coping theories are a promising base for understanding information technology (IT) users' post-adoptive behaviors (Fadel and Brown, 2010).

The contribution of this paper is twofold. First, as a theoretical contribution, this study introduces a coping-based process theory that explains mobile users' non-complaining behavior. The theory comprises four problem-focused and five emotion-focused coping strategies, as well as two control aspects that guide the selection between the strategies. With the theory, we attempt to advance IS research on post-adoptive behaviors. In addition, the theory also answers to the calls for better understanding the role of emotions in IT usage (Beaudry and Pinsonneault, 2010; Stein et al., 2012). Second, as a practical implication, the findings of the study will aid mobile application providers to increase their chances for successful product or service recovery by promoting their understanding on the potential coping processes of their non-complaining users. As such, the contributions of the paper resonate very well with the conclusion put forward by Stephens and Gwinner (1998, p. 172) that *"insightful managers want to understand not only persons who voice their complaints but also those who do not."*

The rest of the article is structured as follows. First, we review prior studies and discuss theoretical aspects related to coping. Second, we describe how we conducted the research. Third, we present our findings, based on the empirical evidence. Finally, we discuss the theoretical and practical implications, limitations, and suggestions for future research.

Theoretical Background

In this section, we first discuss complaining behavior in general and then review studies on non-complaining behavior. Even though complaining (and, thus, non-complaining) has been acknowledged as one type of post-adoptive behavior in IS, no IS studies appear to explain IT users' reasons for non-complaining. Therefore, we review marketing and service research studies that have sought to understand individuals' non-complaining motives. After reviewing these studies, we describe our theoretical lens: the theory of coping (Lazarus and Folkman, 1984). Finally, deriving from the classification of emotion-focused and problem-focused coping, we elaborate more on the role of emotions within IT usage, as it has been found to be an under-researched phenomenon (Stein et al., 2012).

Non-Complaining Behavior

Understanding complaining and non-complaining behavior is central, since it is significantly more cost-effective to retain old customers than to acquire new ones (Fornell and Wernerfelt, 1987; Liu, Guo, and Lee, 2011). More specifically, dissatisfied non-complainers posit a risk for product and service providers, because they are apt to exit, switch, and circulate negative word-of-mouth (Chebat, Davidow, and Codjovi, 2005; Stephens and Gwinner, 1998; Voorhees, Brady, and Horowitz, 2006). It is important to differentiate non-complaining behavior from complaining behavior: the reasons why individuals choose to complain are different from the reasons why they do not complain. Non-complaining behavior can also

¹ Except for our preliminary conference paper that included initial investigation of the topic (Salo and Makkonen, 2014).

be “*more difficult to observe than complaining behavior*” (Chebat, Davidow, and Codjovi, 2005, p. 329). In this article, by non-complaining we refer to cases where individuals do not complain about their dissatisfaction related to products and services to product and service providers, or other official third parties. Thus, the notion of individuals voicing their dissatisfaction to their peers, for example, is excluded from this study.

Unlike non-complaining behavior, complaining behavior has been studied to a great extent. For example, researchers have investigated the individual characteristics and propensity to complain, types of product and service failures, complaint channels, and post-complaint service recovery (Kim, Wang and Mattila, 2010). Within IS, researchers have put less specific emphasis on complaining but recently started to recognize it as one of the behavioral consequences of IT usage, adoption, or purchase (Son and Kim, 2008; Wu and Huang, 2015; Zhou, 2011). Within the contexts of Internet services, Son and Kim (2008) found that individuals' perceptions about information privacy concerns and societal benefits influenced their intention to complain. Wu and Huang (2015) recently confirmed that satisfaction, distributive justice, and interactional justice influence online shoppers' complaining intentions. With mobile services, Zhou (2011) found that satisfaction and monetary costs of usage affected users' intentions to complain. Even though the previous studies have provided valuable knowledge about complaining behavior, complainers, and service recovery, they do not reveal sufficient insight into non-complaining behavior or non-complainers. Thus, there is still a clear lack of research that focuses specifically on non-complaining behavior (as indicated earlier by Chebat, Davidow, and Codjovi, 2005; Stephens and Gwinner, 1998; Voorhees, Brady, and Horowitz, 2006).

As the closest studies to the area of our interest, we were able to locate a limited set of studies that have sought to understand non-complaining behavior, and mainly within the fields of service research and marketing. Stephens and Gwinner (1998) appeared to be among the first to address the non-complaining research gap, as they aimed to understand why older, retired women did not complain about their purchases. By applying theories on appraisal and coping, they identified that the women engaged in three types of coping strategies: problem-focused coping (complaining), emotion-focused coping (non-complaining), and physical avoidance (non-complaining). They presented four sub-strategies for emotion-focused coping: self-blame, self-control, denial, and seeking social support. Chebat, Davidow, and Codjovi (2005) also utilized coping theories to investigate why dissatisfied bank customers failed to complain. Instead of focusing on coping strategies, they showed that the types of emotions caused by a problem affected the outcome: emotions of resignation triggered non-complaining, while anger triggered complaining. They also added that personal redress-seeking propensity affects whether an individual complains or not. Voorhees, Brady, and Horowitz (2006) conducted an empirical evidence-driven analysis (without a guiding theory) and identified several explanations why individuals did not complain after their dissatisfactory experiences of various services. The reasons they identified include time and effort, service provider responsiveness, personality factors, organization-initiated service recovery, late realization of the failure, loyalty, firm's quality reputation, internal attributions, social factors, brand switching, and reduced tip. With mobile network operators, Nimako and Mensah (2012) compared customers' rankings on several potential reasons for non-complaining. The highest ranked reasons include: being too late to complain, nothing would be done about the problem, the customer being busy or not having time, and the customer not knowing where or how to complain. Snellman and Vihtkari (2003) investigated technology-enabled banking services and, on the grounds of their evidence, listed reasons for non-complaining: ineffectiveness, time, hopeless situation, lack of seriousness, the person does not know where and how to complain, the problem was solved, user's own failure, and embarrassment.

Although these studies unveil several reasons for non-complaining behavior, mainly in traditional service contexts, none of them examines how the characteristics of IT influence non-complaining. Therefore, our aim is to extend these studies by tapping into the IT context and identifying the mobile-specific reasons for non-complaining behavior.

Theoretical Lens: Theory of Coping

To identify and position the mobile-specific reasons for non-complaining, we chose to apply the theory of coping (Lazarus and Folkman, 1984) as a broad theoretical lens. The prime reason for selecting this theory was its fit with our empirical evidence: the evidence made us pay attention to how people behaved after their negative mobile incidents by either handling their emotions or addressing the problem (or

both). These aspects of the evidence guided us toward the concept of coping. Additionally, we became more confident about our theoretical lens, since coping had been named a central concept in non-complaining behavior (Chebat, Davidow, and Codjovi, 2005; Stephens and Gwinner, 1998), and coping theories had previously “emerged as a promising foundation for understanding users’ varied post-adoptive reactions to an information system” (Fadel and Brown, 2010, p. 108).

Coping has been defined as “constantly changing cognitive and behavioral efforts exerted to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus and Folkman, 1984, p. 141). Numerous psychologists and other researchers across different disciplines have used the concept of coping to understand how humans deal with major drawbacks of life such as divorce, death, and unemployment. In addition to major events, researchers have found the concept of coping to also be useful in the context of daily stressors (Neupert et al., 2015), such as negative incidents with mobile applications. By referring to previous studies, Neupert et al. (2015) argued that negative everyday events can directly affect an individual’s wellbeing.

Based on the seminal work by Lazarus and Folkman (1984), the coping process consists of five main steps (Figure 1): a negative event, primary appraisal, secondary appraisal, coping strategies as efforts, and an outcome (Beaudry and Pinsonneault, 2005; Folkman and Moskowitz, 2004; Liang and Xue, 2009; Ortiz de Guinea and Webster, 2011). Coping is typically initiated by a certain event (or series of events) that conflicts with the goals of an individual, which leads to the individual’s evaluation of the significance and the relevance of the event as the primary appraisal (Beaudry and Pinsonneault, 2005; Folkman and Moskowitz, 2004). The more significant the event is, the more essential a role that coping plays in it. As the secondary appraisal, an individual estimates his/her personal control over the situation (Beaudry and Pinsonneault, 2005; Lazarus and Folkman, 1984). The secondary appraisal influences the individuals’ selection between the two main coping strategies: problem-focused coping and emotion-focused coping (Lazarus and Folkman, 1984; Liang and Xue, 2009). With problem-focused strategies, an individual attempts to address the problem at hand. In contrast, an individual engaging in emotion-focused coping aims to handle his/her emotions. Even though there have been controversial findings, it is rather typical that a sense of control leads to problem-focused strategies while a lack of control results in emotion-focused strategies (Folkman and Moskowitz, 2004). It is important to note that these strategies may appear simultaneous, alternating, or intertwined. Finally, the process results in an outcome that can be, for example, a certain type of behavior.

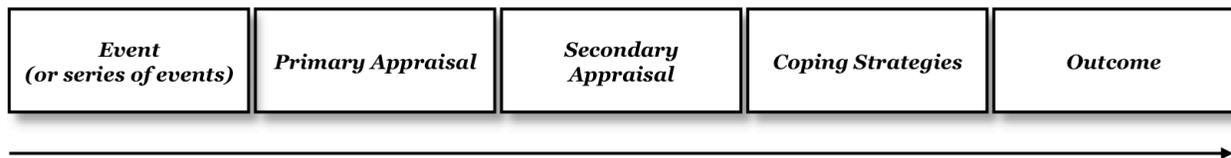


Figure 1. Simplified Illustration of the Coping Process.

Lazarus and Folkman (1984, p. 142) highly emphasized the role of the specific context in question as “coping thoughts and actions are always directed toward particular conditions.” Therefore, we apply this broad theoretical lens to gain rich insight about the mobile-specific reasons for non-complaining behavior (which, in this case, is the outcome of the coping process).

Emotions and IT Usage in IS Research

According to the theoretical lens, individuals have two main coping strategies: problem-focused and emotion-focused. When looking at IT usage and its related behaviors, the vast majority of IS research has traditionally focused on the problem-side, including approaches that are based on practical, functional, and rational aspects (McGrath, 2006). Instead, researchers have paid less attention to the role of emotions. Therefore, we briefly present the related literature on emotions and IT usage as follows.

Among the studies that have tried to examine the emotional aspects of IT usage, researchers have utilized psychological and sociological theories (e.g., Thompson, 2012) and models (e.g., Isomursu et al., 2007). For example, Thompson (2012) applied Giddens's broader philosophy in order to gain a deeper understanding of the relationship between self-identity and affect with IT. Isomursu et al. (2007, p. 404) measured the emotional responses to mobile applications and claimed that "*emotions are at the heart of user experience' and influence how people plan to interact with products.*" IS researchers have also compared positive and negative emotions during initial IT usage: for example, Cenfetelli (2004) showed how negative emotions influenced usage intentions more than positive emotions. Further, Kim, Chan, and Chan (2007) presented a thinking-feelings model, where perceived usefulness and pleasure are examined related to use continuance.

Though there has been a growing interest in IS to study emotions and IT usage (Stein et al., 2015), it has been argued that the role of emotions has been understudied (Beaudry and Pinsonneault, 2010; Stein et al., 2012). Stein et al. (2012) claimed that there is a lack of studies and theories that focus on non-use behaviors as well as the role of emotional aspects in users' choices to continue using new technology. They also indicated that there is a lack of knowledge about the specific triggers that elicit emotions during IT usage. It has been emphasized that tracing the use patterns back to affective, emotional responses "*allows researchers to better understand how and why users make the IT use choices that they do*" (Stein et al., 2015, p. 389).

In this paper, we are interested in understanding why the mobile application users do not complain to the application providers about their highly frustrating experiences; we believe that a comprehensive way to explain this comes from acknowledging both the problem-focused as well as emotion-focused perspectives.

Method

We chose to apply a qualitative approach because of its suitability for our previously uncovered research question: *Why do mobile application users not complain about their highly negative incidents?* Researchers have found qualitative methods useful in uncovering rich, context-specific information and generating theoretical explanations (Berg, 2004; Venkatesh, Brown and Bala, 2013).

Collection of Empirical Evidence

In order to grasp our research question, we conducted a three-phased collection of empirical evidence:

In the first phase, we collected mobile application users' negative incidents with the critical incident technique (CIT) through an online questionnaire. A critical incident is defined as a single experience that a person perceives to be "*unusually positive or negative*" (Edvardsson and Roos, 2001, p. 253). The well-established CIT, originally developed by Flanagan (1954), allowed us to reach our aim of collecting mobile application users' self-reported incidents with several strengths: the technique sorts out critical incidents from other incidents; users can freely choose what is crucial for them and easily report the incidents in their own words; and the descriptions are open and, thus, not limited to the researchers' framework or terminology (Gremler, 2004; Holloway and Beatty, 2008; Serenko and Stach, 2009).

We followed the main CIT procedures set by Gremler (2004) and applied specified wordings from the previous studies (e.g., Bitner, Booms and Tetreault, 1990; Meuter et al., 2000): we asked the respondents to "*think of a time when [they] had an outstandingly positive or negative experience*"² with a mobile application. We distributed the questionnaire to Finnish mobile application users in 2012 via online channels and forums related to news, sports, hobbies, parenting, family, women's magazines, seniors, technology, gaming, business, science, and agriculture. We aimed to reach users with different backgrounds with this multi-forum targeting approach. As a result, 89 users reported a negative incident such as becoming frustrated with an email application that could not fetch mail and freezing while waiting outside for a sports tracking application to function. With this phase, we discovered that only 6% of the 89 users had complained about their negative incidents.

² However, we only examined the negative incident descriptions in this study.

In the second phase, we submitted open-ended follow-up questions in 2013 by email for those respondents who had not complained after their critical negative incidents and gave us permission to ask further questions. The open-ended questions were: “Which reasons have affected you not to complain to the service or application provider?” and “How did it affect you that the service or application in question is mobile and not another type of service or product?” We received responses from 22 users of the approached 36 users. The responses averaged approximately half a page of written text.

In the third phase, we wanted to deepen the insights gained from the previous phases by carrying out 13 interviews during 2013–2015 (11 individual interviews and one interview with two users). We followed the main guidelines of interviewing by Myers and Newman (2007). One of the authors was the main interviewer while another author also participated in a few interviews. To reach a rich variety of perceptions, we gathered interviewees (with which the interviewers had no appreciable relationships) who varied in terms of age, gender, employment status, IT use experience, and personal propensity to complain. We applied an open interview scheme (based mainly on the second phase) but always left room for new themes emerging from the interviews. We also utilized the mirroring technique. The interviews, lasting between 36 and 68 minutes, were recorded and transcribed for the relevant parts. The background information of the study participants is presented in Table 1.

	Phase I (N=89)	Phase II (N=22)	Phase III (N=13)
Gender			
Male	58	14	9
Female	31	8	4
Age			
≤ 24	22	3	3
25–34	33	10	3
35–44	23	8	5
≥ 45	11	1	2

Analysis of Empirical Evidence

The analysis was handled in two phases. In the first phase, the analysis process began simultaneously with the collection and initially focused highly on the empirical evidence: we utilized open coding for qualitative content analysis (Berg, 2004) to find mobile-specific reasons for non-complaining behavior. As we had collected the critical incident descriptions and the email follow-ups, we constructed initial categories with the NVivo software, on the grounds of the evidence. As we collected further evidence from the interviews, we constantly compared whether newly collected evidence supplemented, modified, or challenged our previous analyses. We went through the evidence and coded each relevant text portion (set of words, sentence, or a set of sentences) into a category and sorted the categories according to their relationships with each other. Even though one of the authors was mainly responsible for the analysis, we discussed the categories and their relationships among the authors and with other scholars, as well as drafted hand-written memos. As a result, we possessed a set of mobile-specific reasons for non-complaining behavior.³

In the second phase, however, we thought that the gained knowledge—even though it was specific and potentially practical—could be advanced theoretically. We had noticed in our previous analysis that the users' reasons for non-complaining were related to either handling their emotions or addressing the actual problem. Thus, the empirical evidence guided us to look at the theories of coping as a potential theoretical lens for our further analysis. At best, a theoretical lens assists researchers in focusing and making sense (Reeves et al., 2008). After carefully evaluating the evidence–theory fit, we became convinced that we could use a coping theory as a lens to understand the phenomenon better.

³ The findings of the first analysis phase are reported in our preliminary conference paper (Salo and Makkonen, 2014).

By utilizing the theoretical lens, we realized that non-complaining behavior was an outcome of the coping process: the process starts with a negative incident, continues with an evaluation of the perceived significance and possibilities of control, then is handled by a coping strategy (or interplay of two or more strategies), and finally results in not complaining about the incident. More importantly, we continued the earlier analysis by going through the previously formed mobile-specific categories one by one and noting that they can be positioned into three main coping constructs: problem-focused coping, emotion-focused coping, or control. Hence, two of the authors placed the categories into the three main constructs, and the authors reached a mutual agreement by discussion. Based on these placements, we formed coping strategies and coping aspects that would reflect the evidence. For example, the emotion-focused coping strategy named “*downplaying the role of the application*” was formed based on the content of the mobile-specific categories, such as “*staying independent from the applications*” and “*entertainment as the (main) use purpose.*” Overall, we aimed to ensure that, on one hand, each of the mobile-specific reasons was placed into a coping strategy or a control aspect and, on the other hand, the coping strategies and control aspects reflected all of the empirical evidence.

Our research process is summarized in Figure 2.

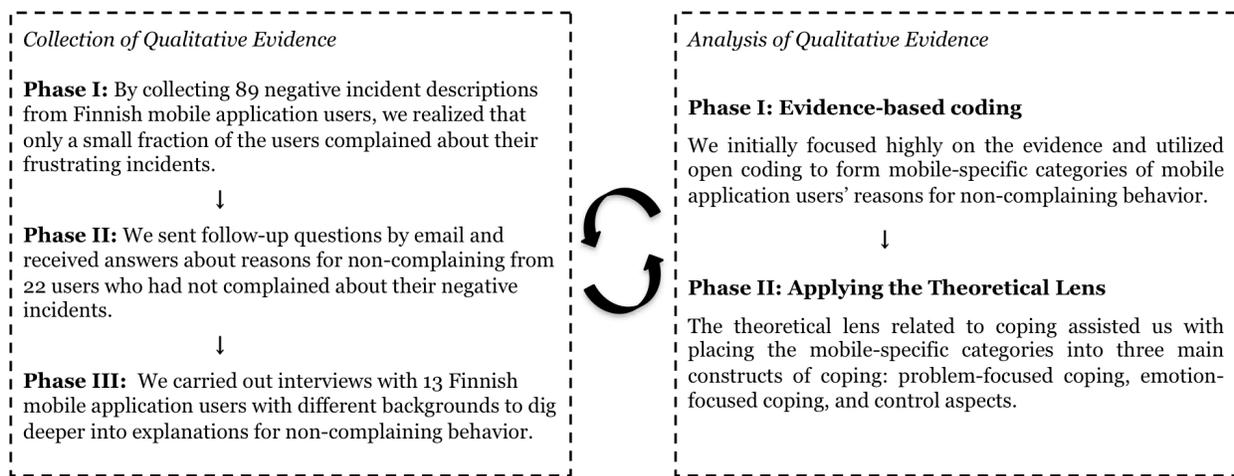


Figure 2. Summary of Our Research Process.

Results

By analyzing our empirical evidence through the theoretical lens of coping, we created a theory that explains mobile users' non-complaining behavior (as summarized in Figure 3). The abstract, general constructs are derived from the theoretical lens, but the mobile-specific coping strategies and control aspects are based on our empirical evidence.

According to our findings, mobile application users occasionally experience negative incidents while using applications. As a result of the incident, the users evaluate the perceived significance of the incident in the primary appraisal stage and their perceived control over the situation in the secondary appraisal stage. Then, perceived control, in particular, guides the selection between the different problem-focused and emotion-focused coping strategies.

With problem-focused coping strategies, the users aim to address the problem and do something about it. With emotion-focused coping strategies, the users try to handle the negativity caused by the incident on an emotional level. It should be noted that the coping strategies can be intertwined and occur subsequently; also, reappraisal might occur. For example, a user might first aim to fix the problem by himself/herself, but, if unsuccessful, then react by downplaying the role of the app, as a form of emotion-focused coping. Finally, non-complaining behavior results as the outcome. It is noteworthy to mention that (re)appraisal may sometimes lead directly to non-complaining behavior if the user does not perceive the incident as significant enough. The theory and its mobile-specific aspects are described with more detail and examples as follows.

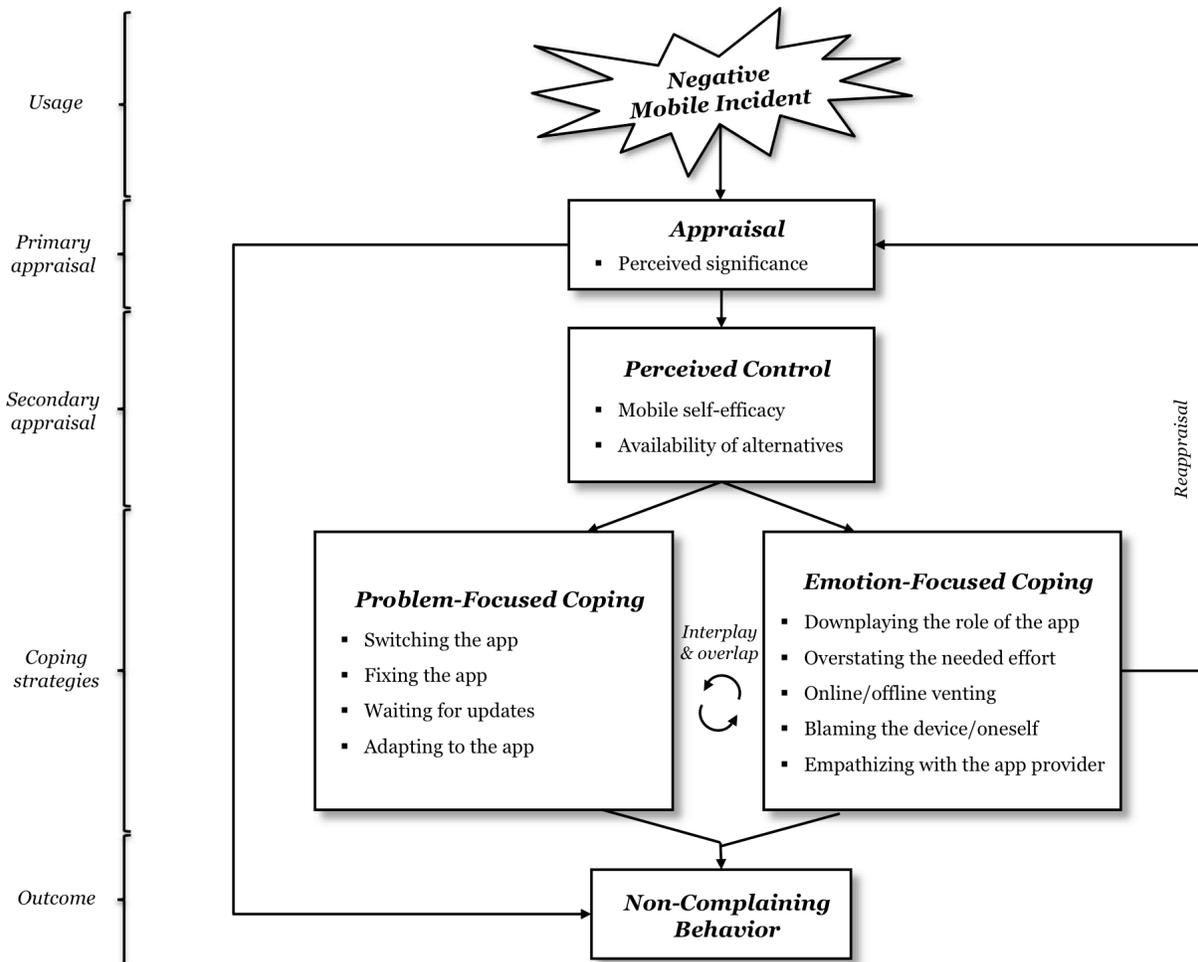


Figure 3. The Resulting Theory Explaining Mobile Users' Non-Complaining Behavior.

Negative Mobile Incident

We collected numerous negative incidents that the mobile application users had experienced in their daily life. The incidents were related to different applications across various categories, such as social networking, location-based information, sports, music, and images. They were caused by a wide range of failures, such as application crashes, bugs, and inconvenient designs, and occurred in various environments, such as outdoors, in vehicles, and within groups of people. A majority of the users spiced their descriptions with highly negative emotions, such as frustration, dissatisfaction, and annoyance.

The incidents reflected **perceived significance** through several different consequences related to the users' actions, such as lost time, catching a cold while struggling with the application outdoors, and social embarrassment. The following two examples demonstrate the collected incidents:

A user's incident with a sports tracking application: "[I was] tracking an exercise performance [while running in the street]. I was recording a running route. I don't know [what happened]; the application just didn't record the whole route, but, instead, it had stopped on its own accord five kilometers before the goal. [As a post-incident feeling, he used a foreign language abbreviation for "f**k how s**tty this is"]. [I told about my experience] for readers of an online forum."

A user's incident with a barcode scanning application: "At the picnic, I wanted to store information about a wine that my friend recommended. I scanned the barcode of the wine bottle with the application's own barcode reader, so that I could automatically receive the information on the screen. The scanning didn't work. Despite the guiding lines on the screen ("align the barcode in this area"), the application didn't

provide any feedback about my attempt and didn't report any kind of activity. I felt embarrassed [when I attempted this task], looking stupid with my new and expensive smart phone. The others were not convinced."

Perceived Control

The users' perceptions of control guide their selection between the coping strategies. It appeared that, in the cases of higher perceived control over the situation, the users aimed to address the issue at hand with problem-focused coping strategies. Correspondingly, with lower perceived control, users tended to react with the incident using emotional-based coping strategies. We found that the two main aspects that affect perceived control are mobile self-efficacy and the availability of alternatives.

When a user has a strong feeling of control via **self-efficacy**, he/she is more likely to attempt to fix the problem himself/herself (or, in some minor cases, blame the device for the failure). For example, one interviewee with high technology self-efficacy usually addresses minor problems by himself:

"Let's say, for example, that there is a broken link. Something simple like that—it's not a big effort anyway, but probably some people don't have a clue if they should add a slash or [a letter L]. I've fixed [minor problems] more than once... At my work, I get to fix things like that there."

In contrast, low self-efficacy tends to guide the user towards emotion-focused coping strategies, since he/she believes that there is little that he/she could do about the problem. For example, one user stated that she just settles for the application's failures, because she cannot have any influence on issues she does not understand.

The amount of perceived control is also influenced by the **availability of alternative ways** to handle the issue at hand. Many users emphasized that they can often find and download similar substitutive applications easily from the application marketplace. As the users narrated, *"there is usually an alternative option for mobile applications"* and *"you can always find more functional applications and leave the poor ones behind."*

If the users believe that they have reasonable alternative opportunities, they are more likely to deal with the problem and switch the application (as a form of problem-focused coping). However, in cases where they do not see alternatives (or there is an overabundance of them), they are more likely to engage in coping strategies other than switching.

In addition to alternative applications, this aspect also relates to other alternative ways for doing whatever the application is used for. For example, a pen-and-paper list could be considered an alternative for a password manager application.

Problem-Focused Coping

Switching the Application

As one of the main problem-focused coping strategies, several users referred that, instead of complaining, they address the problems caused by negative incidents by switching the concurrent application to another similar alternative. For example, one user had used a sports tracking application but ended up switching it because it stopped working. Even though she was upset about the failures with the original application and had preferred the original application, she found new features from the alternative application:

"First, [the application] stopped working so I had to test a new one. Then, I found various features that I liked from the new [application]." ... "I deleted [the original application] quickly. It was a shame it didn't work. I had another phone earlier and used [the application] with it for a while, but not that much."

She highlighted that even though she had typed in profile information and tracked some occasional sports entries, *"it wasn't a big deal to download another application and test it."* Further, she anticipated that she could reconsider the original application when she buys a new phone, since it might have better compatibility with the new device.

Fixing the Application

At times, users who are knowledgeable and enthusiastic about technology aim to solve the application failure on their own. For example, one of the interviewees stated that he is a sort of “*technology freak*” and occasionally desires to find a fix for application problems. He described that he might put a considerable amount of effort into defining the problem and seeking ways to overcome it:

“A: [I carry out] a careful detection of what might have gone wrong [the application].”

Q: What does this “careful detection” mean?

A: Going through the user manual and the [application] menus, and then Google. So, [I Google] the name of the application and the malfunction, with different combinations of search words. Could I find a reason from there that reflects, for example, my device, network settings, and network operator? Should I adjust a setting differently from how the manual instructs, for example? And particularly, will some of the settings of my device influence it, even though it's not stated in the instructions? Usually, you can find pretty good tips for such things from other users.”

He further concluded that the fixing procedure has become a routine for him, as he has resolved such application-related challenges numerous times. As a consequence, the initially negative incident may even result in a positive sense of achievement.

Waiting for Updates

Since the update cycles of mobile applications are fairly frequent, users may engage in a passive problem-focused coping strategy by waiting for a fix via an update. Users may have indeed noticed certain failures with the applications but might think that the application providers would notice them, with the help of other users' complaints. As the following quotation exemplifies, they may sometimes confirm this by conducting search queries:

“I searched for information about the bug with a search engine, and others had filed complaints about [this particular] problem on the producer's online forums and so on.”

Hopes for improvements and updates are higher, especially with applications from well-known brands with a large user base. For example, one user thought about deficiencies with a popular instant messaging service.

“If it was like that, if it was a little bit bigger flaw, there are so many users that someone else would probably bring it to the table or something. Maybe it would be fixed then.”

Adapting to the Application

Users may also adapt to the negative incidents by settling: they do not expect to get “*a perfect package*,” because the majority of mobile applications are free or very inexpensive. Since the monetary sacrifices are relatively low, it is easier for the users to accept the possible deficiencies. Users particularly adapt their behavior in situations where there are few or no alternatives, or the application is otherwise meaningful or necessary for the user. For instance, one user stated that she did not like the new changes that the application provider had introduced, yet she had just learned to live with the negative issues:

“...a service that I had previously found good, but they modified it in a worse direction. The service itself was necessary for me, anyway, so I found it useless to start fighting against the change.”

Emotion-Focused Coping

Downplaying the Role of the Application

Many users appeared to handle their frustration and negative incidents by belittling the role of the application in their life. For example, one of the interviewees described how he had engaged with the online services of a fast food chain rather frequently. After following the brand online and using its related services, he noticed that the fast food chain had launched a new, seasonal mobile application. He downloaded the application but soon faced a highly disappointing incident. His words and phrases were strong, as he narrated the failure:

"...I totally broke down because [the fast food application] didn't work." ... "I was very disappointed, like, 'What is this crap? I will delete the application...'"

Despite these strong first reactions, he later downplayed the incident and the role of the application in his life. Even though the application failure had caused substantial frustration and additionally resulted in a concrete loss (a free cheeseburger), he managed his emotions by reinterpreting the situation:

"...I had no need to [complain]." "...maybe partly because of the redundancy of the application. I did not find it necessary there; if I lose one cheeseburger, it is not crucial for me."

This reinterpretation appeared to result in a reappraisal, through which he re-evaluated the significance of the incident as lower than in the beginning (as illustrated by the feedback loop from emotion-focused coping to the appraisal in Figure 3).

Overstating the Amount of Effort

To manage their emotions, various users believed that the complaining process with a mobile device would require too much effort. Many of them thought that it would be almost impossible to picture themselves going through the complaining process with their mobile device in a mobile situation. For example, one interviewee considered the situation after a negative incident and described:

"You would have to put in terrible effort, so that, somewhere there [in the field], where you have your mobile phone, you don't have too much time, then you shove it... You would have to go home or take a laptop from your bag and put your mind to it..."

In particular, he stated that, instead of giving a simple star rating in an application marketplace, using the mobile device to write the good text required for a complaint would be difficult. Hence, the user seemed to engage in emotion-focused coping by rationalizing that it would not be reasonable to put such effort into the complaining process.

Additionally, many users thought that it would take too much effort to figure out a reasonable complaint channel. Even though the users can give feedback through the application marketplaces, they did not perceive it as the proper complaint channel. For example, one user stated that she *"felt it was difficult to reach the application provider."*

Online/Offline Venting

Some users had not complained about their negative incidents; rather, they seemed to soften their frustration through online or offline venting. Typical online channels for venting included application marketplaces, forums, and instant messengers. For example, one user described that he had attempted to exchange picture files between two devices with the help of near-field communication. The attempt had failed and he described his post-incident feelings with strong curse words and stated that he had vented about his incident with his peers who use Internet relay chat (IRC).

Within offline contexts, many users share their negative incidents with friends, family, and colleagues. Yet, venting may also occur when alone. One of the interviewed users described his experience as follows:

"Q: Have you approached the service provider? Have you thought about complaining?"

A: No, I just cursed and opened a beer."

Blaming the Device/Oneself

A share of the users did not end up complaining, since they directed their emotions towards their devices or themselves, instead of accusing the application for the failure. With devices, users may blame mobile devices in general or the particular device they possess. For example, one user doubted her device, since she was not sure *"if the failure lays in [her] own mobile device or its compatibility with the particular application."*

As an example of blaming oneself, one interviewee had an incident where he tried to find information about a seasonal train ticket. Even though he was disappointed that he could not find the much-needed information, the doubts about his own actions and capabilities prevented him from complaining:

"[In that particular case], I don't know if it was my own mistake. So, I wouldn't prefer complaining if I wasn't 100% sure that I could complain it for real." ... "If I know that it's not my own fault, or it's not dependent on me, then maybe yes [for complaining]."

At times, both device and self-blame are intertwined, as the following quotation demonstrates:

"So if some problems occur, I immediately think that it's just a result of [my] overly old phone, that I should buy a new one if I want the application to function."

Empathizing with the Application Provider

The emotions may also be regulated with the help of users' compassion for the application providers. For instance, one interviewee had experienced an incident with a railway company's application. She had attempted to purchase a mobile ticket for her and her friend, but the application sent both tickets to one email address. She described that *"the ticket purchase doesn't work with the application"* and that the application *"is lacking features when compared to the normal full [website] version."* However, she did not complain about the incident. Instead, she thought that the mobile application was still under development and that the railway company probably received a lot of feedback related to issues other than the application:

"I think I've given feedback to the company about so many [other] issues, [laughs], that I wouldn't bother [complaining] about a mobile application anymore..." ... "The winter season is coming, [laughs], so I bet they will get a lot of complaints about other issues..."

As these quotations hint that she empathized with the application provider, she also specifically stated that she had *"even a little sympathy [for the company], so [she] wouldn't bother to complain."*

Discussion

This study contributes to existing knowledge by introducing a new theory that explains a previously uncovered phenomenon: mobile application users' non-complaining behavior. When compared to the earlier studies addressing non-complaining behavior in traditional product and service settings (as reviewed in the Non-Complaining section), our theory adds to current knowledge by specifying the role of IT and presenting nine mobile-specific coping strategies and two control aspects that guide the selection between the strategies. With this gained knowledge, we have attempted to push IS research on post-adoptive behaviors forward, as well as to assist application providers with better supporting their users to cope with negative application incidents. These theoretical and practical implications are specified as follows.

Theoretical Implications

Four theoretical implications result from this study. First, although IS researchers have recognized complaining (and thus non-complaining) as an important type of users' post-adoptive behavior (Son and Kim, 2008; Wu and Huang, 2015; Zhou, 2011), they have not provided any sufficient explanations for this phenomenon. More accurately, prior IS research has concentrated on the pure *use dimension* (use intention, actual use, and use continuance) when studying adoption and post-adoption behaviors. This has resulted in complaining and other post-adoptive behaviors, such as word-of-mouth, typically being presented as only substitutive (or additional) outcomes instead of (or besides) the use dimension. That is, researchers have frequently merely applied the traditionally used factors to explain the use dimension as explanatory factors for also other post-adoptive behaviors. However, in this article, we have attempted to take these rather simplified models a step further by opening one part of the *"black box of system use"* (Benbasat and Barki, 2007; Straub and Burton-Jones, 2007, p. 224) and explaining how and why non-complaining behavior occurs. Our theory demonstrates that non-complaining as well as the other post-adoptive behaviors are, by themselves, complex phenomena comprising specific elements that share some similarities but also significantly differ from the antecedent factors of the use dimension. Therefore, we suggest that researchers consider non-complaining and other post-adoptive behaviors as multifaceted phenomena, instead of just using them as simple substitutive (or additional) dependent factors in the

rather general models and theories on IT usage.⁴ In this way, IS research will be able to progress towards a better understanding of a wide variety of users' post-adoptive behaviors that are taking place daily in the real world.

Second, by utilizing the theory of coping as a theoretical lens, we were able to reveal that users have two main types of coping strategies that result in non-complaining: problem-focused and emotion-focused. Traditionally, IS research has primarily focused on the practical side and rationality-based reasoning when investigating IT usage and its related behaviors (McGrath, 2006). However, according to our findings, the emotional side is at least as important as the practical side, when it comes to non-complaining behavior. We were able to introduce five mobile-specific emotion-focused strategies that users engage in when coping with negative application incidents. These strategies appear to be crucial in shaping the users' beliefs, attitudes, and intentions underlying their behaviors with mobile applications. For example, the users seemed to resolve their cognitive dissonance by regulating their emotions: several users, at first, made it clear that the applications had caused significant frustration and changed the course of their everyday events, but they later reappraised and belittled the role of mobile applications in their life. With such findings, our study offers one piece of an answer to the recent calls for research that takes emotions into account when examining IT usage and its related behaviors (Beaudry and Pinsonneault, 2010; Stein et al. 2012).

Third, our empirical evidence helped us to notice that there is no clear cut between the two main types of coping strategies. In contrast, they can sometimes be applied simultaneously and the strategies can also form intertwined chains. For example, a user may initially prefer addressing the problem, but if failed, then shift to emotion-focused coping. These findings conflict with many previous coping studies that have assumed a clearer separation between the two strategy types (even though findings similar to ours have been made also by Folkman and Moskowitz, 2004). Also within IS, prior studies seem to have ignored this more complex interplay between the two strategy types. Therefore, we suggest IS researchers to notice that the boundary between the two types is fuzzy and to examine the simultaneous and chained nature of the strategies in the future.

Finally, we were able to identify IT and mobile-specific characteristics that stamp the different coping strategies (Table 2). Particularly, the complexity of IT, features of the mobile application marketplaces, and the rapid update cycles influence non-complaining behavior and steer different forms of coping. These are characteristics that are not present with regular products and services. More specifically, we noticed that the very same fundamental IT characteristics can evoke very different reactions in the users. For example, while the complex and covert operational principles of IT can push some users to emotion-focused coping (e.g., strategy of blaming oneself), some IT enthusiasts are able to perceive negative incidents as mystique challenges that drive them to problem-focused coping (e.g., strategy of fixing the app).

Coping strategy	Main findings regarding IT-specific characteristics
Switching the app	The search engines and related listings in application marketplaces offer easy ways to find, compare, and download numerous alternatives for low or no cost.
Fixing the app	The covert operational principles of IT fascinate and inspire some users to self-fix the problem by themselves.
Waiting for updates	Users are, at times, accustomed to the rapid update cycles of the apps.
Adapting to the app	Some users believe that the IT products and services are typically designed to serve large masses rather than to consider the unique needs of a single individual.
Downplaying the role of the app	IT failures may evoke users' desires to be more independent from the IT.

⁴ The multifaceted nature of the post-adoptive behaviors seems to be emphasized even more in the context of voluntary IT, since the users often have multiple choices and alternatives that may affect their behaviors across different post-adoption stages. In mandatory organizational contexts, boundaries are set by the organization and the specific work system (Jasperson, Carter and Smud, 2005).

Overstating the needed effort	Complexity of complaint channels (marketplace vs. provider vs. developer) and the poor keyboard of the mobile device discourage users from complaining.
Online/offline venting	As users believe IT failures are common also for their peers, they reduce negative emotions by venting.
Blaming the device/oneself	With IT, it is often difficult to tell whether the failure is caused by the application, the device, or the user.
Empathizing with the app provider	Users believe that the app providers have already enough troubles in the complex world of IT products and services.

Practical Implications

As the main practical contribution, the findings of this study promote the chances of successful recovery among application providers after actual product or service failures, or other kinds of negative incidents with the applications. Traditionally, most of the literature on product or service recovery has only concentrated on the active role of the providers in reacting to failures in their products or services. However, coping can be considered as an alternative way for the users to recover from such failures. In fact, from the providers' perspective, it can often be seen as a more preferable means of recovery because, if successful, users are typically able solve the problems causing negative emotions or handle the negative emotions themselves in an autonomous manner, without any active participation from the providers. Moreover, especially in the case of non-complaining users, coping may even be the only way for the users to reach successful recovery because the lack of complaints often leaves the providers unaware of any failures to which they could then react to. Therefore, it is in the providers' interest to try to understand the coping process related to their applications as thoroughly as possible and to use this gained understanding to proactively support the execution of the various coping strategies employed by their users.

How this is done in practice obviously depends on the coping strategy in question. The problem-focused strategies are typically quite straightforward for the providers to support. For example, the providers can aim to promote the users' self-fixing activities by making the information needed to develop the fixes more easily available and accessible for the users, as well as by establishing online forums and other types of online communities in which the users can discuss the errors and the fixes with their peers and potentially also with actual developers. In contrast, the emotion-focused strategies are typically somewhat more difficult for the providers to support, due to their more personal nature, but some insightful ways to do this can be found. For example, the providers can aim to make themselves easier for the users to empathize with by creating more in-depth and interpersonal relationships with them through the use of social media or other similar channels, which would increase their transparency and allow the users to communicate more directly with the actual developers or other members of the providers' personnel.

In addition, the providers can also use their gained understanding of the coping process to influence the users' selection of coping strategies by making some of them more easy or difficult to execute than the others. This can be considered an important point because not all of the coping strategies are likely to result in equally positive or negative consequences, from the providers' business perspective. For example, of the four problem-focused coping strategies identified in this article, switching can be considered one with a very negative consequence for a particular provider, as it results in customer churn. In contrast, self-fixing can be considered a coping strategy with much more positive consequences because if the users decide to take personal action to fix the potential errors in the application instead of switching to another, the providers can, at best, simply pass these fixes forward to other users, without spending any of their own resources to develop them. In turn, of the five emotion-focused coping strategies identified in this article, online or offline venting can bear the most serious business risks for the providers, as it has the potential to result in negative word-of-mouth and, thus, adversely influence the future adoption of the applications. However, there are ways in which the providers may try to manage this risk. One is to offer users dedicated venting forums, in which the providers are able to address the users' outbursts, instead of stories about the negative incidents simply being shared from one user to another, without any influence from the providers. If such addressing is done appropriately, it may

prevent the outburst from turning into actual negative word-of-mouth or even result in positive word-of-mouth, as the users will be able to see that their worries are being taken seriously by the providers.

This kind of product or service recovery aspect can be especially critical in the case of mobile applications because of the hypercompetitive and volatile nature of the market. Changes in the market typically take place very quickly, which also puts immense time pressure on the application development. This time pressure, in turn, makes the launched applications particularly prone to errors. Without sounding too pessimistic, one could even conclude that errors in the applications are often more or less inevitable. Therefore, instead of just trying to reduce the number of errors in their applications through testing and similar methods or perfecting their complaint management practices, the providers also have to pay particular attention to the autonomous product and service recovery—or coping—processes of the users and to supporting them the best that they can. Of course, such support can be considered critical not only from the providers' business perspective, but also from the users' perspective, in terms of reducing the stress and anxiety caused by the product and service failures, as well as other kinds of negative incidents with the mobile applications, which are playing an increasingly important part in the daily lives of more and more individuals.

Limitations and Future Topics

There are some limitations related to this study. First, the mobile-specific findings may not be generalizable to other IT contexts, even though some common characteristics may fit both mobile and other IT contexts. Second, our empirical findings reflect only Finnish mobile application users. It is noteworthy to mention that there may be cultural differences regarding non-complaining behavior. Third, our approach to collect data after the negative experiences had occurred may be subject to some recall and re-interpretation issues (Folkman and Moskowitz, 2004). To overcome this, we aimed to anchor our questions in incidents and related behaviors that actually happened, and we instructed the participants to take the time to properly remember the past events. Hence, we believe that the post-experience collection of the data reflects the users' actual perceptions and behaviors. Fourth, our study aimed to reach a wide variety of different reasons for non-complaining behavior, instead of measuring the relative frequency of the certain coping strategies. Despite these limitations, we believe that the study provides valuable knowledge about the previously uncovered phenomenon.

Our findings open up various possibilities for future research. First, we managed to gain first insights about the transitions between and combinations of different coping strategies. For example, a user might first initiate switching as a problem-focused coping strategy; however, if the user cannot find a proper substitute, he/she might end up venting about the application and/or adapting to the application. We encourage researchers to study the processes related to such shifts in the future. Second, our findings about emotion-based coping strategies offer possibilities for further investigations, as we noticed that the different strategies may have different influences on the users' mentalities. For example, online or offline venting appeared to include rage yet relief, while empathizing with the app provider seemed to contain compassion and comprehension. Thus, it would be interesting to study how different emotion-based coping strategies shape the users' beliefs, attitudes, and intentions towards mobile and IT usage. Such studies could provide more answers to the recent calls for understanding the role of emotions in IT usage. Third, also users' habits and previous experiences influence coping behaviors. Thus, we suggest researchers to examine the role of habits. Fourth, researchers could apply the transactional model of stress (as used in the IT context by Galluch, Grover, and Thatcher, 2015) to investigate the primary and the secondary appraisal more closely.⁵

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