A Capacity Perspective on E-Mail Overload: How E-Mail Use Contributes to Information Overload

Nikolai Sobotta
Goethe University, Frankfurt, Germany
sobotta@wiwi.uni-frankfurt.de

Markus Hummel
Goethe University, Frankfurt, Germany
hummel@wiwi.uni-frankfurt.de

Abstract
Information overload caused by e-mails are a known issue in practice and academia. There is a lot of research on information overload and e-mail use and misuse. However studies on the phenomenon e-mail overload, describing how e-mail as technology contributes to information overload, are scarce or fragmented. We therefore investigate how e-mails lead to causes of information overload and are creating the phenomenon of e-mail overload. As a theoretical framework, we employ the theory-based model of factors affecting information overload. The resulting research model and measurement scales help to understand the induction of e-mail overload. The proposed scales are then tested for construct validity in a pretest assessment that is based on an item-sort task. The results show very high values for the substantive validities of the constructs, indicating good construct validity.

1. Introduction

E-mail as a multi-functional tool is present in many different areas of our daily lives. It helps to communicate in private life, and it is also highly important for work-related communication. Although writing, sending, and receiving e-mail has numerous advantages, such as efficient communication independent of time and space, there are also problems related to e-mail use which may lead to e-mail overload. The high amount of e-mails stored in inboxes, the inappropriate use of e-mail as a task management tool and for personal archiving are the main causes of e-mail overload [1]. Related literature suggests several solutions for solving the problem of a too high amount of e-mails in the inbox, for example clustering mechanisms [2] or interface design [3]. However, the high amounts of e-mails are also found to induce stress in terms of heart rate variability [4]. Past literature concludes that e-mail induced stress is mainly experienced by managers, whereas non-managers do not experience this problem to the same extent [5]. Research also reports that half of the messages’ content is useless [6]. In addition, a negative effect on job satisfaction has been observed when receiving and sending high amounts of e-mail [7]. The high amounts of e-mails that are sent back and forth each day are one of the major causes for information overload in organizations [8]. In this paper we call e-mail induced information overload e-mail overload. Other observed effects of high amounts of e-mail include an interruption effect and the needed processing of e-mails [9].

Previous research focused mainly on the amount of e-mails that persons have to deal with or to store in the inbox. The exact nature of the causes and the emergence of e-mail induced information overload are still not well understood and the following statement seems to hold still today: “… we lack a deep understanding of the impact that e-mail has had on our lives...” [10]. Our central argument is that the amount of e-mails received or stored is not the core of the problem; in fact it is the limited capacity of human beings in order to deal with e-mails, e-mail caused factors, and the dependencies between those. All these factors in sum are pushing humans towards their capacity limit as also suggested for information overload [11].

The goal of this paper is to provide a first building block for a novel theoretical perspective on e-mail overload by employing the “theory-based model of factors affecting information overload” [11] and therefore scrutinizing the lens of limited human capacity: the more humans need to process (e.g., messages or interruptions) the less residual capacity is available for dealing with other tasks or factors leading to information overload. Each factor lowers residual capacity and increases the probability of information overload. We therefore conceptualize information overload for e-mail, as a specific technology [12], by drawing on existing information overload literature to derive a research model for e-mail overload. Subsequently, we ask the following research question: “How does e-mails affect the causes of information overload...”
overload and how do they lead to the phenomenon of e-mail overload?”

The main contribution of this paper is twofold. First, we integrate previous findings on information overload and e-mail overload and provide a research model representing the fundamental relationships between our main constructs. Second, we report on the development of valid measurement scales that we designed to measure our constructs. The proposed scales are then tested for construct validity in a pretest assessment that is based on an item-sort task.

The remainder of this paper is structured as follows. First, we consult related work on e-mail overload and the theoretical background for our model. Next, we outline the development of our research model in Section 3. Afterwards, we present and describe the measurement scale development for our main constructs in Section 4, including the pretest assessment. Lastly, we reflect on our results, highlight the implications and limitations, and give an outlook on further research in Section 5.

2. Related work and theoretical background

2.1. E-mail overload

E-mail overload is still a problem today because it contributes towards the ubiquitous problem of information overload [13, 14]. 25% of the participants of a related study received more than 60 e-mails per day, consequently, 65% felt that e-mail overload is a problem [15]. Also, e-mail has been found to contribute towards a feeling of stress [16], especially by managers in leading positions [5].

The concept of e-mail overload is defined in various ways. The term e-mail overload has been used first referring to the amount of e-mails in the inbox and different functions such as task management and personal archiving for which e-mail is used for [1]. A straightforward and more recent definition of e-mail overload relates to the large amount of incoming e-mail and the time spent for working on e-mail [17, 18]. The importance of time has been questioned by recent empirical insights [19]. Also different status types of e-mails (e.g., to do, to read, etc.) contribute to this overload [20]. In our study, we concentrate on overload by incoming e-mails and use therefore the definition of Dabbish and Kraut [18] and Sumecki et al. [17].

Strategies for handling e-mail overload are scarce and research is needed that helps people to deal with large amounts of e-mail [20]. The phenomenon of overload and strategies to cope with it are closely interconnected [21]. Related work criticizes that e-mail clients lack an inbox structure for e-mail prioritization, information structuring and work-flow management [22]. Other proposed strategies to cope with e-mail overload include reply prediction and attachment prediction alerts [23]. Besides technical solutions, training is considered to be important for handling e-mail overload [24]. It has been found that appropriate training improves the way people work together by e-mail [15, 24].

Another strategy for coping with e-mail overload is to find a way to deal appropriately with interruptions. Findings suggest that people should work on e-mail two to four times a day and not continuously [25-28]. However, the way people deal with interruptions is influenced by the situational parameters afforded by the task or e-mail [29].

To sum up, existing studies and its coping strategies considers single factors, like the volume of e-mails and interruptions. But the dependencies between these factors are neglected.

2.2. Theory-based model of factors affecting information overload

In order to explain the phenomenon of e-mail overload, including its causes and influencing factors, we draw on Jackson and Farzaneh [11] who developed a “theory-based model of factors affecting information overload” for determining the extent of information overload a human is exposed to. We use this model as a theoretical lens because it applies a human capacity perspective to explain information overload. This lens is suitable for our study because it allows considering multiple causes as well as its interdependencies. The model categorizes factors that contribute to the overload phenomena based on their direct or indirect effect, called intrinsic and extraneous factors. Intrinsic factors compose the information load humans are exposed to and contrast it with the human capacity if the information load exceeds the capacity, information overload occurs. The information load is determined by the quantity of information and the therefore available time which makes up the actual load imposed per time. Extraneous factors (e.g. interruptions) indirectly affect information overload by impacting direct factors.

The model draws on limited human capacity which refers to the fact that humans are limited in their brain when storing and processing information [30]. They are only able to hold around seven chunks of information in parallel [31]. By dealing with the information, the amount is even reduced to four items [32]. These limitations lead to a speed limit in processing information [30]. Literature has
distinguished the effect of these limitations either in the time it takes to process information or in the quantity of information that can be included in processing [11, 33]. We argue that it is not one of those factors in isolation; in fact it is both with interdependencies between these two approaches. Therefore, this capacity perspective of information overload is used to investigate how e-mails lead to causes of information overload and is creating the phenomenon of e-mail overload.

**Research Model**

As computer-mediated communication [34] and e-mail [14] supposedly lead to information overload, we build on insights of existing information overload literature in general. We therefore aim to integrate general concepts of information overload with the characteristics of the technology e-mail. This is achieved by deriving e-mail specific concepts of information overload, drawing on related work of e-mail overload discussed in Section 2 and e-mail literature in general. In sum, we posit that the use of e-mail influences the causes of information overload and therefore may result in a higher degree of information overload. Figure 1 summarizes the model, the main constructs, and the relationships, which are subsequently explained and derived in more details.

**Figure 1. Research model**

Our common reasoning line and scrutinized lens is built on the “theory-based model of factors affecting information overload” [11] discussed in Section 2. We integrate these intrinsic factors composing information overload with existing e-mail and e-mail overload literature in order to fully grasp e-mail overload. Therefore we concentrate on factors that are influenced by e-mail as a technology in order to explain e-mail induced information overload. All other factors we include as control variables because variations in those factors may lead to differing results.

First, we define the intrinsic factors as the main elements of the “theory-based model of factors affecting information overload” [11] by defining two constructs reflecting the information load: amount of e-mails and used time per e-mail:

The quantity of information, as one intrinsic factor of the model, is reported to contribute mainly to information overload [31, 34, 35] as an “excessive supply” [36] of information. Information overload often has been looked at as an inverted “U” curve [37], where decision accuracy will increase no further beyond a threshold of volume or amount of information, but will instead decrease with growing information load. We suggest including amount of e-mails as the e-mail specific construct reflecting the amount of information. Researchers identified the amount of e-mails as predictor for stress [16] and a lot of participants feel overwhelmed by the amount of e-mails [15]. Also e-mail volume is a causal factor leading to e-mail overload [18] and further work [17] confirmed that e-mail volume is instrumental. We therefore suggest the following hypothesis:

**Hypothesis H1:** An increase in the amount of e-mails will have a positive influence on e-mail overload.

Available time has been suggested by the “theory-based model of factors affecting information overload” [11] as an additional factor [38] having a direct influence on information overload. The more time that is available for an individual, the lower the probability of experiencing information overload [38]. A majority of participants in a survey complained about loss of time [39] and time has also
been investigated for e-mail overload as a mediating variable for the volume in terms of the amount of e-mails [19]. However, from an information overload capacity perspective [30, 31], time has a twofold meaning: first, the more e-mails need to be processed, the more time is needed overall. However it is obvious that for processing a higher amount of e-mails more overall time is needed. The second meaning of time is capacity driven: The more time is available to complete, the less need to be completed per time. So the less time per e-mail is available the higher the information load per time. Therefore we propose the construct of *used time per e-mail* as a moderator on the amount of e-mails towards e-mail overload. This reflects the idea of limited capacity of human beings [31] as a negative moderator because the less load per time, the lower the probability of e-mail overload.

**Hypothesis H2:** The positive relationship between the amount of e-mails and e-mail overload is moderated by the used time per e-mail such that the relationship is less positive when the used time per e-mail is high than when it is low.

Next, we specify *extraneous factors*, following the “theory-based model of factors affecting information overload” [11]. They are determined by e-mail use that is having an indirect effect on e-mail overload. Derived from the model, we specifically found support in the literature for the factors prior experiences and task interruptions. For information overload, prior experiences [40] in terms of knowledge and personal skills [41] are important to keep the level of information overload low. As the extent to which people suffer from information overload is closely related to the used strategies to deal with it [21], we suggest to explore e-mail specific experiences as knowledge in terms of e-mail use. Feedback on how to compose e-mails [42] and the transfer of training contents to the workplace [43] makes a significant difference in the usage of e-mail [15]. An increase in knowledge and media competencies in terms of how capable an individual can handle the channel e-mail [44] reduces significantly e-mail defects [24]. Repeated use and aggregated knowledge as a knowledge base on how to compose and read e-mails allows individuals to handle e-mails efficiently [45]. We propose *e-mail knowledge* as an indirect effect on e-mail overload because it changes the way how each e-mail is handled and therefore we suggest seeing e-mail knowledge as a moderator between amount of e-mails and e-mail overload:

**Hypothesis H3:** The positive relationship between the amount of e-mails and e-mail overload is moderated by e-mail knowledge such that the relationship is less positive when e-mail knowledge is high than when it is low.

In order to conceptually uncover the indirect effects of e-mail overload, we suggest to include task interruptions [46] as a further indirect effect on information overload [11]. Transferring this view to e-mail, incoming messages can cause interruptions by showing notifications [26]. The amount of e-mail based interruptions is determined by the amount of e-mails as each message can show up to one notification, depending on the settings of the e-mail system and the interval users are checking their messages [26]. Therefore, we propose a positive one-way flow from the amount of e-mails to the amount of e-mail based interruptions:

**Hypothesis H4:** An increase in amount of e-mails will have a positive influence on amount of e-mail based interruptions.

In an experimental setting without e-mail, people multitasked less and had a longer task focus [4]. This shows that e-mail based interruptions can be distinguished in two categories [47]: intrusions and distractions. While intrusions are characterized by a task change and the time needed to return to the primary task, distractions appear in the meanwhile of doing the primary task as a kind of multitasking and lower information processing capacity [48]. The focus switch from a primary to a secondary task and in reverse needs less time than answering the phone, however it is still disruptive [49]. Also for other technologies, it has been found that interruptions from a peer increased the time needed to complete the primary task [25]. It is also known that the constant monitoring of e-mail actually reduces productivity through distractions [27]. These findings suggest that it makes sense to check and respond to e-mail only limited times per day to be more productive [26] and we propose that the more often people get interrupted by e-mail, the less time they have for actually processing and responding to each e-mail:

**Hypothesis H5:** An increase in the amount of e-mail based interruption will have a negative influence on the used time per e-mail.

Based on existing hypothesis in literature [18], the importance of e-mail for work plays an important role towards e-mail overload. This draws on the argument that interdependent and dynamic activities need more communication in order to coordinate spontaneous and unscheduled with others [50, 51].
This need for coordination and therefore communication results into a higher amount of e-mails [18], however, as the importance depends more on each e-mail than on the amount of e-mails, we suppose that e-mail work importance has a moderating effect on the hypotheses between amount of e-mails and e-mail overload:

**Hypothesis H6:** The positive relationship between the amount of e-mails and e-mail overload is moderated by the e-mail work importance such that the relationship is more positive when the used time per e-mail is high than when it is low.

Table 1 presents all constructs, its definition and description as well as their key references.

**Table 1. Overview of constructs and their descriptions**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Definition and Description</th>
<th>Key References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of e-mails</td>
<td>The number of e-mails that are received, read or sent on an average working day.</td>
<td>Schroeder et al [37]; Hiltz and Turoff [34]; Miller [31]; Burger and Rensleigh [15]; Dabbish and Kraut [18]; Sumecki et al. [17]</td>
</tr>
<tr>
<td>Used time per e-mail</td>
<td>The time that is consumed by handling e-mails especially by reading, sending or administrating e-mails on an average working day.</td>
<td>Schick et al. [38]; Farhoomand and Drury [39]; Heylighen [30]; Miller [31]; Barley et al. [19]</td>
</tr>
<tr>
<td>Amount of e-mail based interruptions</td>
<td>The number of disruptions that are caused by e-mail messages on an average working day.</td>
<td>Speier et al. [46]; Gupta et al. [26]; Renaud et al. [27]; Jett and George [47]</td>
</tr>
<tr>
<td>E-mail knowledge</td>
<td>E-mail knowledge is the degree to which a knowledge base on how to use e-mail as a communication channel is developed.</td>
<td>Swain and Haka [40]; Owen [41]; Ruud and Henk [21]; Soucek and Moser [43]; Carlson and Zmud [44, 45]</td>
</tr>
<tr>
<td>E-mail overload</td>
<td>The degree to which individuals have a feeling that their ability to handle e-mail is out of control.</td>
<td>Dabbish and Kraut [18]; Sumecki et al. [17]; Hogan and Fisher [52]</td>
</tr>
<tr>
<td>E-mail work importance</td>
<td>Is the degree to which the medium e-mail is important to get the work done.</td>
<td>Dabbish and Kraut [18]; March and Simon [50]; Thompson [51]</td>
</tr>
</tbody>
</table>

### 3. Measurement scale development

In order to draw conclusions on the previously developed hypothesis, appropriate measurement scales for our constructs have to be developed [53]. On the basis of our research model and the corresponding construct definitions, we conducted a content validity assessment which aimed at finding and adopting existing, established measurement scales from prior literature [54]. As a result, we find that scales for many of the constructs in our research model exist already in either related domains such as information overload in general or e-mail in general or directly within e-mail overload. Table 2 contains the derived scales and sources for each construct.

**Table 2. Overview of constructs and their items**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of e-mails (formative)</td>
<td>How many new e-mails do you receive on an average day?</td>
<td>Adapted from Dabbish and Kraut [18]</td>
</tr>
<tr>
<td></td>
<td>How many new e-mails do you read on an average day?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How many e-mails do you send on an average day?</td>
<td></td>
</tr>
<tr>
<td>Used time for e-mail (formative)</td>
<td>On an average day, how much time do you spend reading e-mails?</td>
<td>Based on Sumecki et al. [17]</td>
</tr>
<tr>
<td></td>
<td>On an average day, how much time do you spend sending e-mails</td>
<td></td>
</tr>
<tr>
<td></td>
<td>On an average day, how much time do you spend administrating e-mails?</td>
<td></td>
</tr>
<tr>
<td>E-mail based interruptions (formative)</td>
<td>How often do you get interrupted by notifications of incoming e-mails on an average day?</td>
<td>Based on Gupta et al. [25, 26]</td>
</tr>
<tr>
<td></td>
<td>How often do you get interrupted by reading incoming e-mails on an average day?</td>
<td></td>
</tr>
</tbody>
</table>
As regards the amount of e-mails, we could rely on an existing scale called e-mail volume [18]. However, for the used time per for e-mail, we draw on the existing idea of the time for managing e-mails [17] which we developed from the present description of the study and split into several parts to form our construct. We measure the overall time for one day in order to divide it by the amount of e-mails resulting into used time per e-mail. This gives us the opportunity to have a more accurate measure than by asking for the average used time e-mail because participants do not need to consider the variability in the used time for different types of e-mails. The idea of e-mail based interruptions is based on existing work within information overload [46] and e-mail overload [25, 26], leading to two items for our construct. The general wording is adapted from Dabbish and Kraut [18]. E-mail knowledge was taken from e-mail literature [45], but we dropped items that are too close to ease of use. As we introduce new constructs and also use existing constructs from related domains, we had to sharpen the items of the construct e-mail overload that we took initially from literature [18]. It interfered strongly with the amount of e-mails originated from the same study and also with e-mail knowledge. So we made it more precise and dropped items that could not be clearly assigned to e-mail overload or e-mail knowledge because of ambiguous wording. The wording of some items was not precise enough to differentiate between not being able to handle e-mail because of the missing knowledge or the overload situation. We also had to sharpen the construct of e-mail work importance that we took from literature [18] in order to make the concept more clear and precise.

By evaluating established guidelines [55, 56], we decided whether to analyze our constructs as formative or reflective. We came to the conclusion that the three constructs amount of e-mails, used time for e-mail, e-mail based interruptions are formative constructs because the items ask for distinct parts of the construct which are independent from the other parts. In contrast, we measure e-mail knowledge, e-mail overload, and e-mail work importance as reflective constructs because changes in the constructs are reflected in all the items of the respective constructs. All items were formulated in a way that they refer to an average working day in order to reflect a common unit of analysis.

Before testing our research model on a large scale, we decided to conduct a pretest in order to obtain first indications of construct validity. Although relying on established measurement scales, the appropriateness of the scales for our research domain and the unique combination of the scales demand for a preliminary assessment of construct validity in order to ensure that our items measure what they are supposed to measure. Construct validity for reflective items is enabled by ensuring unidimensionality, reliability and validity [53]. We investigated those three components by conducting an item-sort task that allows drawing conclusions on substantive validity, which is a major contributor towards construct validity [54, 57]. The evaluation of substantive validity is also suitable for small sample sizes such as our pretest setting [57]. Before conducting the actual pretest, we did several test rounds with selected persons in order to improve the scales and make them clearer.

For the final round, we recruited 20 persons as participants of our item-sort task, including persons both from an academic and an industry background. 60% of the test persons were male and 40% female participants respectively. The item-sort task was constructed in a way that each participant had to decide for each questionnaire item which construct
fits the respective item best. The items were randomly sorted. One researcher was present during the pretest assessment in order to clarify questions, if necessary. Also, the researcher explained the definition of each construct to the participant in order to avoid misunderstandings. Lastly, we provided written definitions of each construct for the participants and we encouraged the participants to read the definitions carefully before conducting the item-sort task. Many participants also consulted the written definitions during the item-sort task for clarifying uncertainties. Participants were encouraged to report poor and unclear wordings.

For data analysis, we used two established indices to evaluate substantive validity (see [57] for an extensive discussion). The $P_{SA}$ index indicates how well the corresponding items fit to the intended construct, whereas the $C_{SV}$ index also takes the loading on other constructs into account. The $P_{SA}$ index ranges from 0.0 to 1.0, whereas the $C_{SV}$ index ranges from -1.0 to 1.0, and the higher the better. The recommended threshold for the $C_{SV}$ index is 0.5. The values of both indices for each construct are presented in Table 3.

**Table 3. Results of the item-sort task as regards substantive validity**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Number of Items</th>
<th>$P_{SA}$</th>
<th>$C_{SV}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of e-mails</td>
<td>3</td>
<td>0.96</td>
<td>0.93</td>
</tr>
<tr>
<td>Used time for e-mails</td>
<td>3</td>
<td>0.96</td>
<td>0.93</td>
</tr>
<tr>
<td>E-mail based</td>
<td>2</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>interruptions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-mail knowledge</td>
<td>4</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>E-mail overload</td>
<td>6</td>
<td>0.96</td>
<td>0.93</td>
</tr>
<tr>
<td>E-mail work importance</td>
<td>4</td>
<td>0.95</td>
<td>0.91</td>
</tr>
</tbody>
</table>

The results show high values for both the $P_{SA}$ and $C_{SV}$ index. The values of the $C_{SV}$ index are higher than the recommended threshold of 0.5 for all constructs, indicating high substantive validity and therefore good construct validity. For the construct e-mail based interruptions and e-mail knowledge, all participants allocated the corresponding items to the correct construct, whereas for the other constructs, the values of less than 1.0 show that at least one person allocated an item to the false construct. The most incorrect items were assigned to the e-mail overload construct; however it has also the highest amount of items. Amount of e-mail based interruptions and amount of e-mails were the constructs from which items were assigned the most often to e-mail overload. This reflects the closeness of the constructs between the causes of e-mail overload (e.g., amount of e-mails) and e-mail overload. Most frequently, items of e-mail based interruptions were assigned to wrong constructs. In sum, we conclude that our items measure the corresponding items appropriately.

4. Discussion and concluding remarks

The exact nature of how and why e-mail contributes to e-mail overload is still not well understood. Existing contributions look on isolated aspects of e-mail overload and do not investigate information overload in general. In order to contribute towards filling this gap, we developed a theoretical model which applies a capacity perspective by drawing on the “theory-based model of factors affecting information overload” [11]. Human capacity is needed in order to process information load determined by intrinsic factors. As e-mail specific conceptualizations of this direct effect, we derived the amount of e-mails and the used time per e-mail from the model making up the e-mail based information load. We suggest the amount of e-mail based interruptions and e-mail knowledge as conceptualizations for indirect or extraneous factors on e-mail overload. Whereas the amount of e-mails is taken from e-mail overload literature [17, 18], the concepts of e-mail based interruptions and e-mail knowledge are derived from the “theory-based model of factors affecting information overload” [11] and related literature [e.g., 25, 26, 44, 45].

Next, we developed appropriate measurement scales for each of our constructs by creating new items or adapting existing items. As existing literature [17, 18, 52] measures e-mail overload to some extent by asking for causes, we sharpened all items in terms of distinguishing between cause (e.g., amount of e-mails) and e-mail overload. In order to gain first indications of construct validity before distributing the survey on a large scale, we conducted an item-sort task as a pretest with 20 participants. The results show that our scales measure the respective constructs appropriately. We have to stress the fact that it was never our objective to test the hypothesis of our research model with this study, so we cannot fully answer our research question at this point. Instead, the study presented in this paper is a first crucial step towards explaining the fundamental relationship between e-mail use and e-mail overload from a capacity perspective.

We encourage future research that tests our model and our measurement scales in a questionnaire-based survey design. We will do final adjustments of the scales in order to accommodate false assignment of items to constructs. It is also promising to add further
indirect factors that have an impact on e-mail overload (e.g., quality and content of the e-mails) or to uncover e-mail specific factors that cannot be derived from information overload literature by applying exploratory research methods.

The improved and adjusted constructs as well as the developed research model are an important contribution for practice. In order to cope with the information overload induced by e-mails, it is necessary to fully grasp the phenomenon and its causing factors first. With this study, we developed a model that allows the identification of the most important factors that lead to e-mail overload. This can be then used for developing or choosing appropriate and effective countermeasures based on the analysis of group or individual situations. The capacity perspective shows that humans are only able to deal with limited factors in parallel. Therefore, effective countermeasures should mitigate all causing factors, not only one factor. Appropriate coping strategies involve the reduction of the amount of e-mails for example by filtering, and the amount of interruptions may be reduced by for example disabling notifications, but also trainings on how to compose and read e-mail messages efficiently.

Our study is not without limitations. Due to the little sample size, we are only able to provide indications of construct validity. For the final evaluation of construct validity, the scales have to be tested on a larger scale. At this point, we also cannot draw any conclusions in terms of our hypothesis as the model needs to be tested with a larger sample size.

5. References


