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# The Influence of Self-Esteem and Locus of Control on Perceived Email Overload

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**THE INFLUENCE OF SELF-ESTEEM AND LOCUS OF CONTROL  
ON PERCEIVED EMAIL OVERLOAD**

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## THE INFLUENCE OF SELF-ESTEEM AND LOCUS OF CONTROL ON PERCEIVED EMAIL OVERLOAD

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### Abstract

*As email use becomes more ubiquitous in organisations, negative effects that stem from its use are becoming more prevalent. This study considers Email Overload as a negative product of email use. It explores the link between the personality traits of Self-esteem and Locus of Control and Email Overload. Furthermore it proposes a link between the level of perceived Email Overload and individual productivity in the work place.*

*A sample of 239 respondents from an engineering organisation was collected for this study. Using Partial Least Squares (PLS) results suggest a strong negative relationship between Email Overload and productivity, indicating that as perceived Email Overload increases, a person's productivity decreases. Weaker links were formed with Self-esteem and Locus of Control to Email Overload.*

*Keywords: email, email overload, self-esteem, locus of control*

## 1 INTRODUCTION

Email is the most widely used information system. There are over 700 million business email users and up to 200 billion emails being sent world-wide daily (EWebMail, 2008). Both socially and professionally this tool has developed to become more than a means of communicating electronically (Whitaker & Sidner, 1996), by breaking the concept of time and place (Schultze & Vandenbosch, 1998), linking people together across the world and helping support a range of functions for users (Danis et al., 2005; Jackson et al., 2001).

Email flattens hierarchal structures (Foster & Flynn, 1984; Tassabehji & Vakola, 2005), can be used for task and information management (Whitaker & Sidner, 1996) and is among the most powerful tools businesses use for communication (Schuff et al., 2006; Armstrong et al., 2000). Although emerging technologies such as instant messaging are gaining popularity in the work place, email is still the primary method of communication in organisations today (Dabbish and Kraut, 2006).

Email is reaching its productive peak for both individuals and organisations. The consequences of this widespread use are experienced by professionals and documented by scholars. Email can open the pipeline for a plethora of information to flow through to its users (D'Ambra et al., 2007), bringing email users' workloads to unmanageable levels. It can disrupt normal work activity (Czerwinski et al., 2004) and allow work creep into employees' social lives (McMahon, 2008). Email has gone as far as becoming an object of obsession. People have become so dependent on its use they check their work email in their holidays and in their beds at night (McMahon, 2008).

It is in the interests of management to ensure this tool, which has grown to such a solid foundation in many businesses (Armstrong et al., 2000) that the process of communication is carried out in the most effective and efficient way possible (Jackson et al., 2001). Email traffic can act as a distraction to employees, waste time, reduce productivity and the quality of work (Phillips & Reddie, 2007). It has been recorded that up to 25% of email received in the work place is non-work related (Armstrong et al., 2000).

## 2 LITERATURE REVIEW

Effective organisational communication techniques improve the work practices and productivity of employees (Jackson et al., 2003). From this, it can be deduced that technologies which facilitate such communication, by improving its efficiency and enriching the communication process, can have a positive impact in terms of improving individual productivity in an organisational context. A key advantage of the effective implementation of information technology in a business context is the ability to better manage information and facilitate organisational communication. Email is a prime example of an information technology that has been proven to do both.

### 2.1 The Negative Impact of Email Use in an organisational Context

The prevalence of email across organisations has brought a host of new problems into the workplace. These problems have a negative impact on the productivity of employees and organisations and include interruption, stress and information overload among others.

Information overload occurs as the volume of information received by the individual surpasses their ability to process it (Jones et al., 2004; Schuff et al., 2006; Schultze and Vandenbosch, 1998; Speier et al., 1999). Email, like other technologies, is a medium which can facilitate and increase information overload (Speier et al., 1999). This phenomenon is commonly referred to as 'Email Overload'. Whittaker and Sidner (1996) define Email Overload as how the functionality of email has evolved from a basic communication tool to other uses including task management, personal archiving and asynchronous communication. Other literature, however, defines Email Overload as the inability of people to cope with the influx of information caused by email (Dabbish and Kraut, 2006). Dabbish and

Kraut (2006) define Email Overload as a perception of email users' belief in their inability to process, find and handle the amount of email they send and receive. This is the definition adopted by this paper.

Researchers (Hiltz & Turoff, 1985; Edmunds & Morris, 2000) have discovered that information overload causes stress amongst employees. Computers have become a source of anxiety in the workplace and with their growth over the past two decades, people have found that they need to adapt to the new work environment they operate in and acquire new skills to deal with the new pressures of overload (Whitty & Carr, 2006). Email use increases work pace (Hair et al., 2007) and people may find themselves with less control over what is happening around them (Edmunds & Morris, 2000) – a common cause of stress. Email overload causes time pressures and can increase working hours, which are also reportedly large contributors of stress (Edmunds & Morris, 2000). Stress also causes a great deal of lost productivity in the work place as people take sick days to deal with it (Edmunds & Morris, 2000). Therefore the stress that Email Overload can cause is potentially detrimental to productivity in the workplace.

## 2.2 Personality Traits Affecting Email Use

A person's attitudes are in part defined by an individual's personality traits, which play a role in the link between email use and stress (Hair et al., 2007) For instance, Self-esteem and Locus of Control have been related to occupational stress in previous literature (Hair et al., 2007).

Personality characteristics can impact how an individual perceives information (Schultze and Vandenbosch, 1998). The complexity of the process of how we think, learn and judge affects how we are impacted by information and the perception of overload (Schultze and Vandenbosch, 1998). Information is an asset and product of email use and therefore we can relate these personality characteristics to email itself. The personality traits Self-esteem and Locus of Control have been associated with one another and linked with issues such as stress (Pruessner et al., 2005; Hair et al., 2007; Guindon, 1994]. Additionally they can help explain a person's technology usage characteristics (Joinson, 2004) for example, how people use email.

Self-Esteem is a personality trait that refers to the subjective opinion of one's self-worth and the confidence and satisfaction a person has in themselves. High Self-Esteemed individuals are less reliant on their job environment and less susceptible to negative effects around them, such as job stress (Mossholder et al., 1981). A person's level of Self-esteem has also been associated with technology use in literature (Hair & Ramsay, 2007; Chen et. al., 2008) with poorer Self-esteemed individuals being associated with a preference for email use over other communication methods and technologies (Joinson, 2004). This paper then speculates on the relationship between Email Overload and self-esteem.

Locus of Control refers to a person's belief in how the events of their lives are controlled. Those with an external Locus of Control believe external factors are responsible for the outcome of events in their lives, whereas those with an internal Locus of Control believe their behaviour and the outcomes in their lives are a product of their own decisions (Hair & Ramsay, 2007; Blanchard & Henle, 2008). Studies have found that people with an external Locus of Control engage in activities which deteriorate their productivity (Blanchard & Henle, 2008). Further, people with an external Locus of Control find themselves spending more time than intended on the Internet (Chak & Leung, 2004; Chen et al., 2008), which can relate to Internet addiction, and consequently Email Addiction.

Ironically, the features that made email such a great tool for organisations to enhance productivity are the same issues which negatively impact individual users in the workplace (Hewit, 2006; Hallewell, 2000). The negative aspects of email are hindering organisational growth by harming individual productivity in the work place, such as Email Overload, which this study aims to establish. In addition, research has demonstrated a link between technology use and personality traits (Hair & Ramsay, 2007; Chen et. al., 2008), consequently this study ventures to identify a statistically significant link with Self-esteem and Locus of Control to Email Overload. Figure 1 below is an adaptation of Dabbish and

Kraut's (2006) research framework integrating personality traits believed to impact Email Overload, and will be used to analyse the relationship between Email Overload and productivity in the workplace.

### 2.3 Controls

When determining a relationship between primary variables that form the basis of a hypothesis in a multivariate research model, it is essential to eliminate alternative explanations that can invalidate the hypothesis (Neuman, 1991). Dabbish and Kraut (2006) consolidate the following controls from the literature regarding email usage and stress:

- Job Characteristics: May influence the level of email usage.
- Email Work Importance: The importance of email in the work context.
- Email Volume: Number of emails sent and received
- Email Management Tactics: how the flow of messages, inbox and archiving are managed.

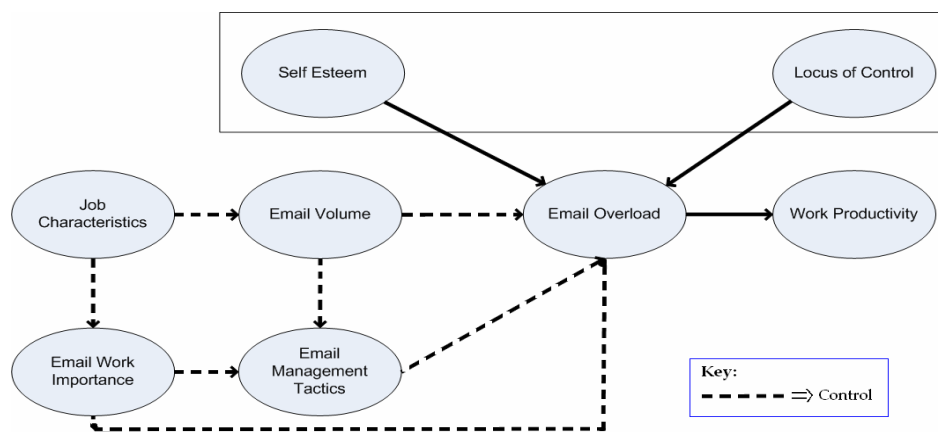


Figure 1. Research Model

Based on the literature the following hypotheses were formed to the corresponding questions:

**H1:** Users of Email with Low Self-esteem will have a higher perception of Email Overload.

**H2:** Users of Email with an External Locus of Control will have a higher perception of Email Overload.

**H3:** Perceived Email Overload will have a negative effect on Work Productivity.

## 3 METHODOLOGY

The objectives of this research are achieved through a positivist quantitative approach. Data was collected via a reactive survey through the use of a questionnaire designed to test and validate the research model in Figure 1.

The research model was adapted from two key papers and configured in order to fill a gap in research regarding the consequences of email use (Email Overload) and potential factors that impact them (personality traits). Utilising Dabbish and Kraut's (2006) research framework and two personality traits that have been associated with email use by Hair et al (2007), scales were adopted and developed for Job Characteristics, Email Work Importance, Email Volume, Email Management Tactics, Email Overload, Self-esteem, Locus of Control and Work Productivity.

Design of the survey included a range of demographic questions which were measured as a mix of continuous variables and scales in the first section of the survey. The second section of the survey consisted of questions measuring the control and primary constructs. All constructs with the exception of Job Characteristics and Email Volume consist of scales standardised to 5-point Likert-scales with options ranging from 1 to 5 (Strongly Disagree/Disagree/Neutral/Agree/Strongly Agree). Each construct in the model, was measured against four criteria. The key latent variables were email overload, self-esteem, locus of control and work productivity. For the purpose of this study four control variables were used: job characteristics, email work importance, email volume and email management tactics.

The subjects were the employees of a private corporation which provides essential services in the Resources and Industrial, Infrastructure Services and Property and Facilities Management sectors. This corporation offers operations, maintenance, asset and project management services to organisations around the globe who wish to outsource their non-core activities. Currently the corporation employs over 29,000 people across a range of industries in Australia, New Zealand, the USA, South America, the UAE, Qatar, SE Asia, India & Canada and has an annual turnover greater than AUD\$2 billion.

Data were collected over two stages: the pilot study and the main study. A pilot study was conducted in order to improve the quality of the main study exposing any deficiencies in the design, hence giving an opportunity to improve and refine the research design and incorporate the changes into the main study before its re-distribution. One business unit was selected from the organisation to conduct the pilot study and the main study was performed on the rest of the corporation. The business unit in which the pilot study was conducted is made up of, among other groups, a project management office team, SAP specialists, business analysts, programmers and a technical support team located at the headquarters of the organisation. Selecting this business unit gave a form of guarantee that our subjects would be familiar with computers and business supporting technology.

A total of 40 responses were received for the pilot study and 199 for the main study which were distributed as a link in an email. As changes to the survey for the main study only involved removing certain measures, results from the pilot study were still usable for the main study bringing the total sample to 239 respondents (a 78.6% response rate).

To properly assess the relationships between the variables of the research model Partial Least Squares (PLS) was utilised as the statistical analysis method. PLS is suitable for models which contain multiple latent variables (Chin, 2000) and can be applied to both confirmatory analysis and exploratory studies while helping in understanding the importance of individual variables.

While PLS Graph software was used to evaluate the research model, bootstrapping was performed as a re-sampling technique with 200 iterations. Accordingly, the research model was assessed at both the structural and measurement level.

## **4 RESULTS & DISCUSSION**

### **4.1 Demographics**

The majority of the respondents of the survey were male (68.2%) with 30.1% females. This result is not inconsistent with the nature of the business of the organisation. The majority of respondents were aged between 26 and 35 (29.7%), followed closely by respondents in the 36 to 45 year range (27.2%). On average the technological experience of this sample was just over 16 years with a standard deviation of 6.58 years. 38.1% of the respondents reported between 16 and 25 years of experience with computer technology, 30.1% reported between 11 and 15 years of experience, and 22.2% had 5 to 10 years of experience. The remaining 2.5% had either over 25 years of experience or less than 5.

Regarding education levels 31% of the respondents held a postgraduate degree (or equivalent to), 35.1% achieved a University undergraduate degree, 16.3% received their qualifications from TAFE

(Community College), and 17.2% graduated from High School. This sample exhibited a higher than average level of education. 23% of the respondents were Professionals (i.e. no subordinates, accounts, sales researchers, etc), 40.2% were either Line Managers or Middle Managers, 13% work in a Technical role, 22.2% in an Administrative role and the remaining 1.7% were equivalent to Senior Executives. Therefore, the majority of respondents were Professionals, followed closely behind by Administrative personnel, Line Managers and Middle Managers.

#### 4.2 Email Management Tactics, Email Work Importance, Email Volume & Email Overload

Figure 2 below illustrates the PLS output for the research model at the structural level including corresponding path coefficients and R-squares.

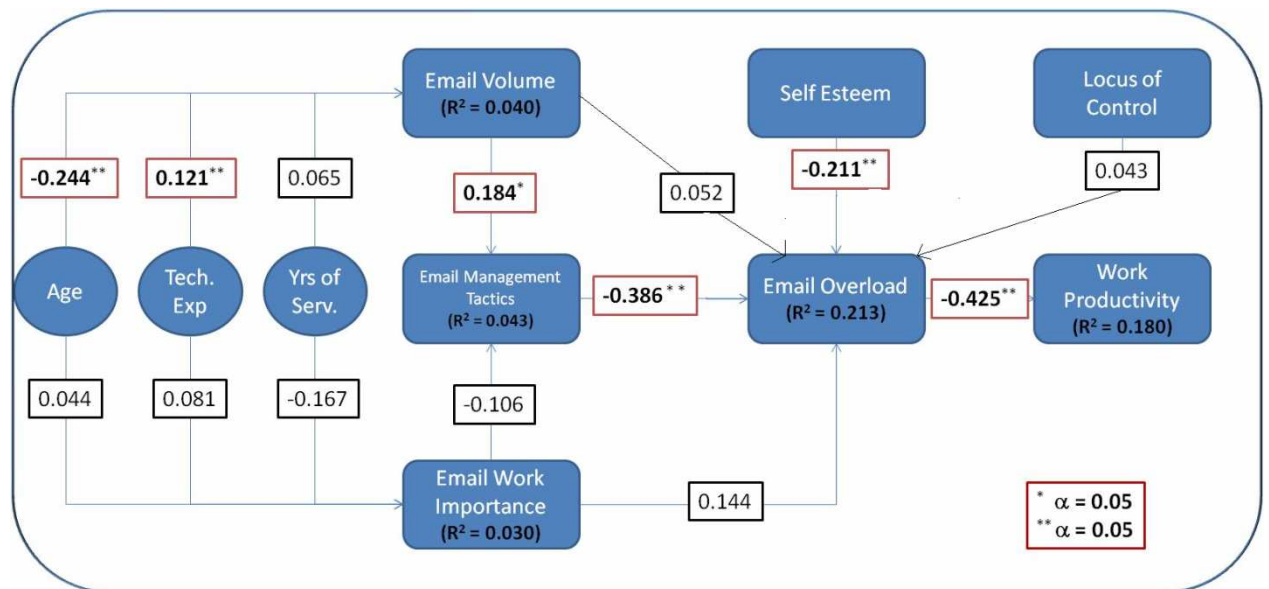


Figure 2 PLS structured Model

There are in total 11 relationships among the control latent variables including their relationship to Email Overload. Four of these relationships were calculated as significant at either the 0.01 or 0.05 level with one relationship borderline significant. Table 1 shows the appropriate weightings and loadings for the corresponding formative and reflective latent variables.



Construct/Indicator	Composite Reliability	Average Variance Extracted (AVE)	Weighted (Formative Indicators)	Loading (Reflective Indicators)	T-Statistics
<b>Self-esteem</b>	<b>0.870</b>	<b>0.538</b>			
On the whole, I am satisfied with myself.				0.6183	3.3121
At times I think I am no good at all.				0.7655	3.9300
I feel that I have a number of good qualities				0.3399	1.3513
I am able to do things as well as most other people				0.3846	1.8861
I feel I do not have much to be proud of				0.7560	3.5847
I certainly feel useless at times				0.8417	3.7739
I feel that I am a person of worth, at least on an equal plane with others				0.5224	2.2791
I wish I could have more respect for myself				0.6616	3.7904
All in all, I am inclined to feel that I am a failure				0.7310	3.8341
I take a positive attitude toward myself				0.6236	3.3635
<b>Email Overload</b>	<b>0.890</b>	<b>0.538</b>			
I can handle my email efficiently.				0.7939	22.7600
I have trouble finding information in my email				0.7169	19.2573
I can easily deal with the amount of email I receive				0.7912	19.9412
I sometimes miss information or important messages				0.7732	27.9112
I reply quickly to the message I need to				0.5916	7.7436
Dealing with my email disrupts my ongoing work				0.6896	14.2855
I find dealing with my email overwhelming				0.7579	17.3854
<b>Work Productivity</b>					
How would you and the following people describe your EFFICIENCY this week?			0.4387		2.3216
How would you and the following people describe your OVERALL QUALITY of your work this week?			0.4918		2.5483
How would you and the following people describe your OVERALL AMOUNT of your work this week?			0.2545		1.2992
<b>Email Work Importance</b>					
Email is critical for getting my work done			1.0752		2.1700
I spend a lot of time waiting for replies from others to my email			-0.3013		0.4576
I use email a lot for my work			0.1387		0.2212

Table 1 Weightings and loadings for the corresponding formative and reflective latent variables.

### 4.3 Hypothesis 1

*“Users of Email with Low Self-esteem will have a relatively higher perception of Email Overload”*

The relationship between Self-esteem and Email Overload is significant. As defined above, self-esteem is how confident and satisfied a person is with themselves. Joinson (2004) studied the link between Self-esteem levels and preferences between communication medium and found low Self-esteem respondents tended towards email as their first choice of communication. Phillips & Reddie (2007) believe that how a person uses (or abuses) email is affected by their ‘psychological mechanism’ such as Self-esteem. There are many studies emerging that link Self-esteem to technology

use and this analyses attempts to discover a relationship between this personality trait and the concept of Email Overload. The path coefficient was measured at -0.211. This result implies the higher a person's Self-esteem is perceived Email Overload is lower at a rate of almost 20%.

#### 4.4 Hypothesis 2

*“Users of Email with an External Locus of Control will have a relatively higher perception of Email Overload”*

Along with Self-esteem, Chen et al. (2008) discovered that Locus of Control strongly predict an employees propensity to internet addiction. Chen et al. (2008) found those with an external Locus of Control are more likely to be influenced by the internet environment and hence become addicted to it, which is consistent with other research. The hypothesis formed, as a result, proposes that those with an external Locus of Control will be impacted more by the email environment, the perception of it, the expectations behind and the consequences that befall constant use of it in the workplace.

The t-value extracted for Locus of Control is 0.5299 with a path coefficient of 0.045. This t-value indicates the hypothesized relationship between Locus of Control and Email Overload is not statistically significant.

#### 4.5 Hypothesis 3

*“Perceived Email Overload will have a negative impact on Work Productivity”*

Finally the relationship between Email Overload and Work Productivity was measured. The bootstrap revealed a t-value of 8.1183 and a path coefficient of -0.425.

## 5 CONCLUSION

The research reported in this paper is a valuable quantitative examination of the concept of email overload. By extending previous qualitative work, particularly that of Chen et al (2008), Dabbish and Kraut (2006) and Hair et al (2006) this study contributes to the understanding of Email Overload as well as identifying ways to interact with email and broader aspects of work and productivity. We have extended previous models that have considered features of work, their impact on email volume and email management tactics by including the personality traits of Self-Esteem and Locus of Control in these frameworks.

Based on the results of this study it was found that the personality trait of Self-Esteem significantly impacts employees' perceived Email Overload in the workplace as well as confirming that the more email a person receives the more they need to manage their email by engaging in managing tactics as shown in the direct and moderated influence of email management tactics on a reduced feeling of email overload in the study. There is also the indication of improved personal productivity by reducing Email Overload.

Finally our findings suggest that employers should consider employees' Self-Esteem as this study indicates that it plays a significant role in perceived Email Overload. This finding is consistent with that of Chen et al (2008) who found evidence for a link between Self-Esteem and Internet Addiction in the workplace. Organisations should consider these personality issues when formulating policies on email use. The study confirms that workers could control Email Overload by adopting effective management tactics for using email and thereby increase their productivity and overall well being.

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