

Type and email communication

A research study from OPP

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Executive summary

Email is a part of most people's working lives, but we all use it in different ways, have different likes and dislikes, and find different aspects of email more or less stressful. In part this may be due to personality differences. This report describes the results of a study into how personality Type differences, as measured by the Myers-Briggs Type Indicator® (MBTI®) model, relate to how we use and are affected by email. The analysis is based on 368 people who completed an online survey. The results are described in detail in this report, but some of the headline findings are as follows:

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- | | |
|---|--|
| Email use | <ul style="list-style-type: none">• 84% of the group agreed or strongly agreed that they could not do their job without email. Women were more likely to agree with this than men.• Most people received more work emails (averaging 25–50 emails a day) than they sent (11–25 emails).• Desktop or laptop computers are the devices that most people both preferred to use and actually did use. Those who preferred to use a smartphone were significantly younger than those who preferred to use other devices.• Most respondents sent and checked emails outside of normal working hours. |
| MBTI preference pair differences | <ul style="list-style-type: none">• Compared with Introverts, Extraverts are more likely to feel email is overused (when face to face or telephone contact could be used instead), and to have sent an email to the wrong person. They are less likely to use email to avoid face to face confrontation or debate. On average, Extraverts both send and receive more emails than do Introverts.• Those with a Sensing preference are likely to be more structured in their use of email, feel they use email efficiently, and to be keener that emails are clear and concise. iNtuition Types are less structured and more casual in their use of email.• Those with a Thinking preference particularly value efficiency, getting to the point, and speed of response. These features are also valued, though less highly, by those with a Feeling preference. The latter group are, however, more likely to be offended if emails omit pleasantries.• Most people expect a fairly quick response, but those with a Judging preference are more irritated when they do not receive this, are less likely to take a long time to respond themselves, and are more likely to spend time waiting for emails from others. They find it more difficult to ignore notifications and are less able to concentrate on their work when they have unread emails. Those with a Perceiving preference are less structured in their use of email, often not using subfolders at all or else setting them up but then not using them, and they are relatively relaxed about having unread emails. |
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Other Type differences

- A number of differences were also found between people of each dominant function, and between different functional pairs. These are described in detail in the report.

Other group differences

- Men were significantly more likely than women to check personal emails at work.
- Compared with people in traditional physical teams and people not in a team, members of virtual teams felt that they wasted more time dealing with email and that they used email less efficiently.
- A number of differences were found between individuals of different occupational levels. For example, managers and especially senior managers were more likely to agree that they were sent too many irrelevant emails, waste too much time on email, find email overwhelming and stressful, and have to deal with email outside of normal working hours.

Best and worst aspects of email

- The most commonly identified best things about email included: being able to use it with anyone, anytime anywhere; speed; and providing an audit trail.
- The most commonly identified worst things about email included: junk emails; ease of misinterpretation of email; and use of email instead of face to face communication.
- There were clear Type differences in what were seen as the best and worst aspects of email. For example, people with a dominant function of Extraverted Feeling (ESFJ, ENFJ) felt that people not replying to their emails was a particular issue.

Stress and email

- A number of factors correlated with being more stressed, including organisation size, job type, job level, number of emails sent and received, likelihood of sending emails outside of work hours, different attitudes to and techniques of using email, and level of control over one's working life.
- There were no significant differences in stress between different preference pairs (E-I, S-N, T-F, J-P), dominant functions, or functional pairs. However, Introverts on average both send and receive less emails than do Extraverts. And amongst those who receive more than 50 emails a day, Introverts are more stressed than Extraverts.
- The email factors that are particularly stressful for people of each dominant function were identified.

These findings have been used to produce guidelines to help people of each dominant function to work more effectively with email, and to avoid email stress.

Introduction and methodology

Introduction

Email is a part of most people's lives, both inside and outside work. In 2015, over 205 billion emails were sent and received every day (Radicati Group, 2015) and many people may underestimate how much time they spend on email, and how disruptive it can be (Renaud, Ramsay, & Hair, 2006). For many, email is an essential tool, but it can also be a source of stress, especially for managers (Future Work Centre, 2015) or for those who perceive mail as distracting (Hair, Renaud, & Ramsay, 2007). Some email stress may be related to personality; in other communication contexts, individuals with personality preferences for Introversion and for Sensing have been shown to have a higher degree of apprehension about communication (Opt & Loffredo, 2000). It has also been suggested that individuals with different styles, traits or types of personality may use email in different ways, and indeed attempts have been made to predict an individual's personality from the content of their emails (Shen, Brdiczka, & Liu, 2013). However, while there have been some studies into internet usage and personality (Mark & Ganzach, 2014), there has been less research into the specific relationship between email use and personality, especially in a work context.

This research looks at personality Type differences in the ways in which people relate to email, use email, and are affected by email. If we can understand how our personality influences our own email use, we should be able to communicate more effectively by email with others in ways that avoid causing them or ourselves undue stress. To this end, we explored Type differences in areas such as:

- Amount of emails sent and received
- Preferences for using email
- Email stress
- Use of email outside of normal hours
- Best and worst aspects of using email.

By investigating these issues, we hoped to be able to put together straightforward guidance to help individuals make the best use of email, and to help organisations adopt sensible email policies.

Data collection

To carry out the study, we created an online survey. Participants were asked to give their MBTI Best-fit (validated) Type and some demographic information. In addition, they completed a number of questions about their use of and preferences for email, including:

- Number of emails sent and received
- Types of devices used for email
- Level of agreement with a large number of statements about their preferences for and actual use of email
- Use of email outside normal working hours
- Best and worst aspects of using email.

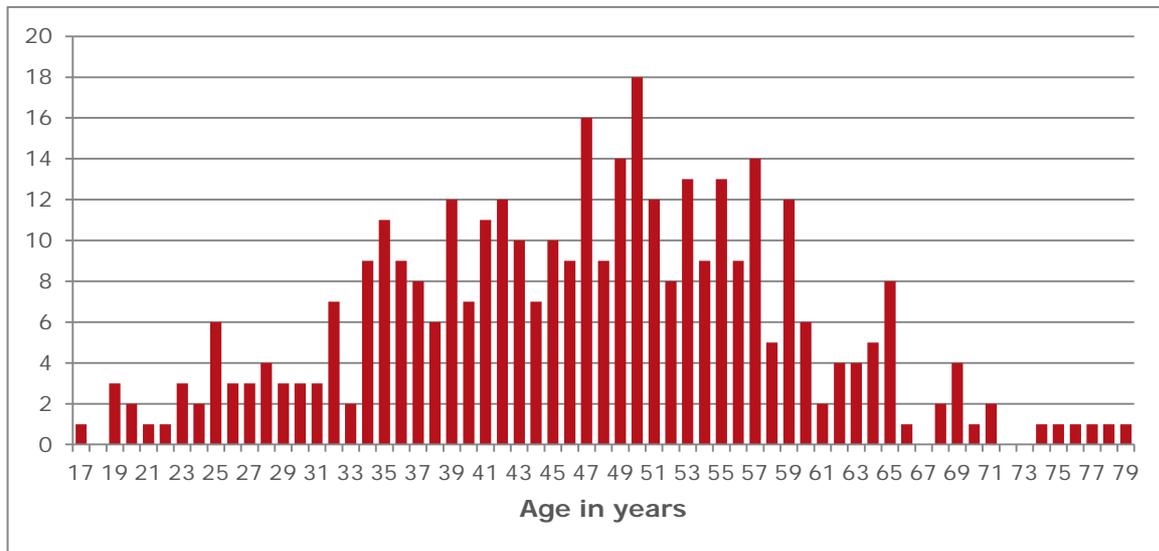
The survey was publicised to Type users via LinkedIn, OPP's website, and direct communication to OPP workshop participants. In total, 455 people attempted the survey. However, the analysis is based on data from 368 people who completed the questionnaire.

Results

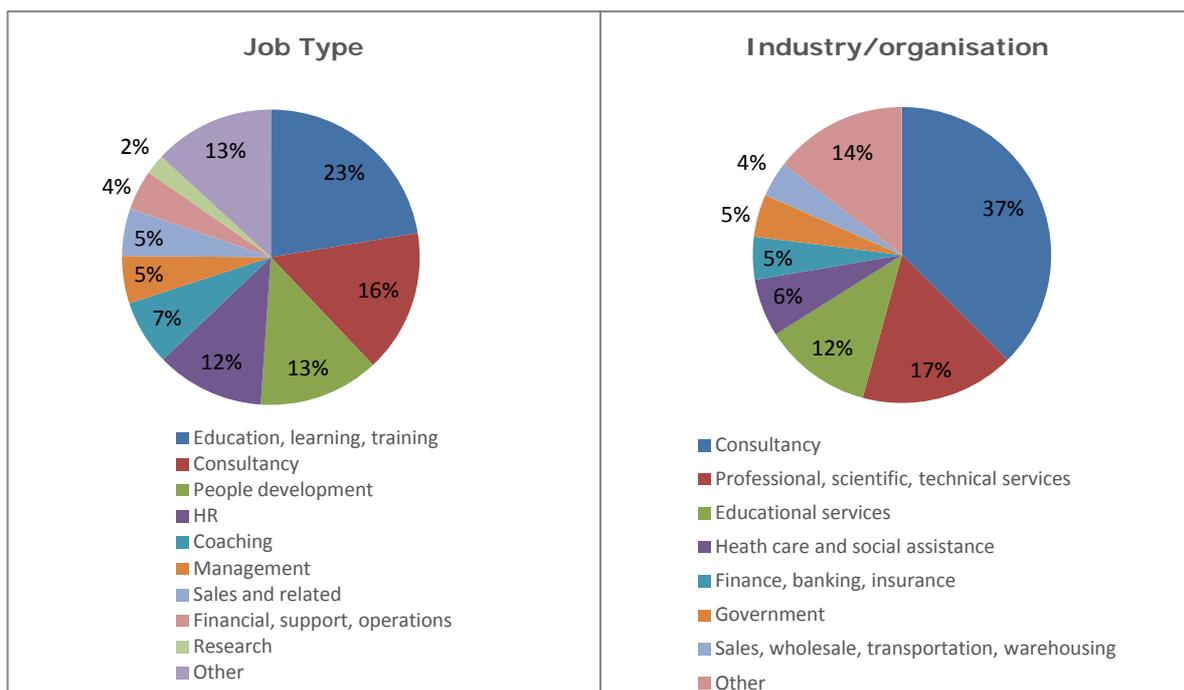
The sample

Group demographics

74% of the group were female, and 26% male. Age ranged from 22 to 79 years, with an average (mean) age of 47 years:

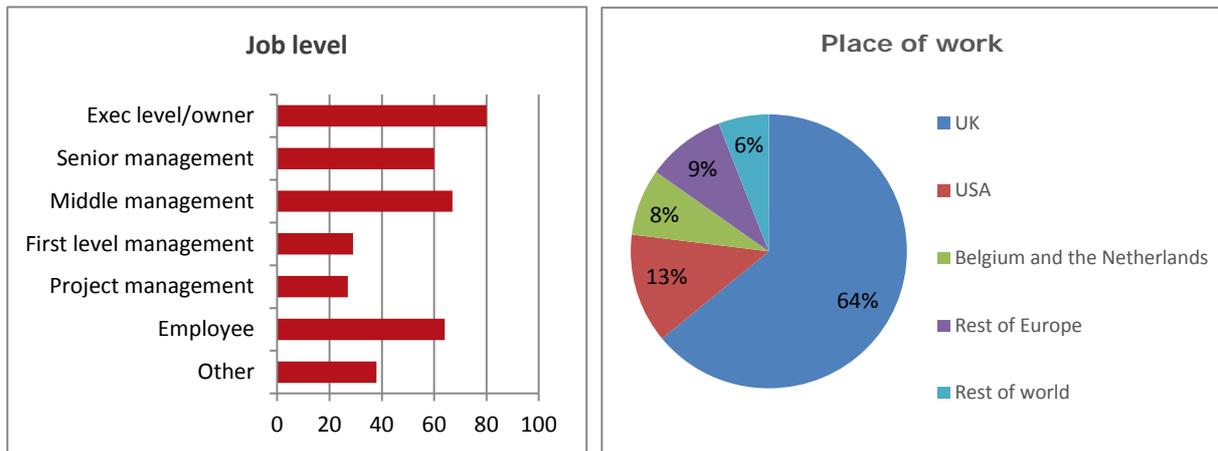


Most of the group had a role in education, consultancy, development, HR or coaching. The majority worked for a consultancy or professional services organisation.



Over half of the group (58%) were employed full-time, with a further 26% being self-employed.

Job level varied from employee up to executive/owner. The majority worked principally in the UK.



The makeup of the group reflects the demographics of those likely to be most interested in Type and in Type research.

Type distribution

A Type table for the group is shown below:

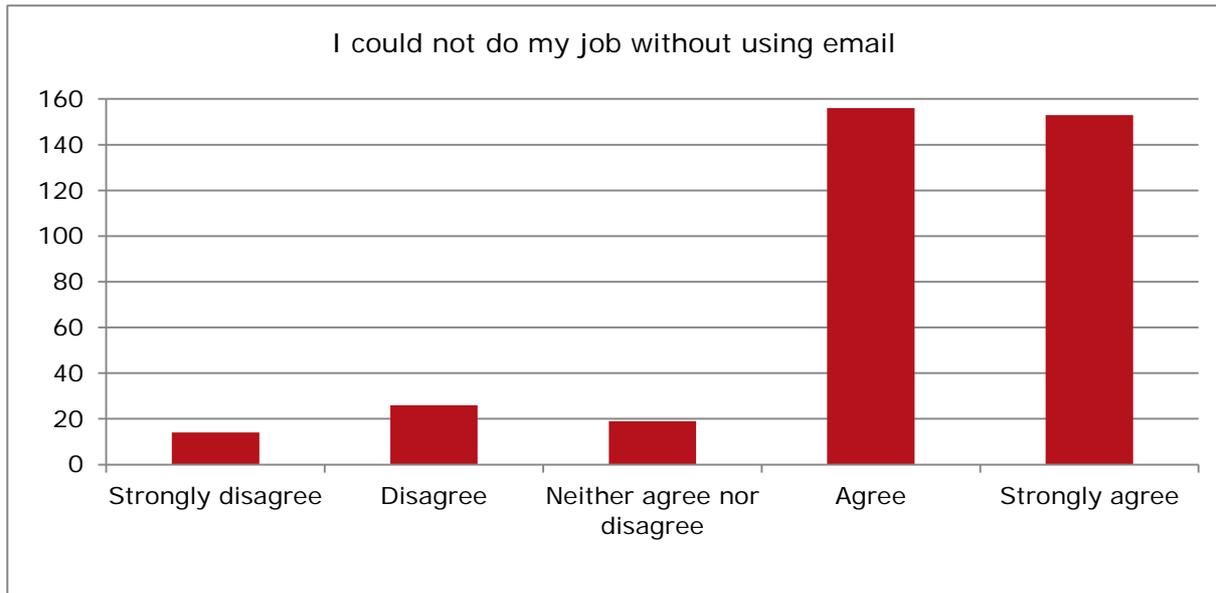
Type	N	%
ISTJ N=24 6.5% SSR=0.47		
ISFJ N=17 4.6% SSR=0.36		
INFJ N=15 4.1% SSR=2.41		
INTJ N=30 8.2% SSR=5.86		
ISTP N=10 2.7% SSR=0.42		
ISFP N=9 2.4% SSR=0.39		
INFP N=34 9.2% SSR=2.88		
INTP N=30 8.2% SSR=3.42		
ESTP N=12 3.3% SSR=0.57		
ESFP N=17 4.6% SSR=0.53		
ENFP N=62 16.8% SSR=2.67		
ENTP N=30 8.2% SSR=2.93		
ESTJ N=20 5.4% SSR=0.52		
ESFJ N=18 4.9% SSR=0.39		
ENFJ N=20 5.4% SSR=1.93		
ENTJ N=20 5.4% SSR=1.86		
E	199	54.1%
I	169	45.9%
S	127	34.5%
N	241	65.5%
T	176	47.8%
F	148	52.2%
J	164	44.6%
P	204	55.4%

The SSR (Self-Selection Ratio) compares the sample to the general population. Types with an SSR greater than 1 are over-represented in this group compared with the general population. All iNtuition Types are therefore over-represented; this is not uncommon in a group of people interested in Type. However, there are sufficient numbers of each Type in the sample to carry out meaningful analyses.

Is email important?

Overall findings

All respondents were asked to what extent they agreed with the statement "I could not do my job without using email". Most (84%) agreed or strongly agreed with the statement.



Group differences

There were no significant differences in MBTI Type in answers to this question. However, women were on average significantly¹ more likely to agree to the statement than were men.

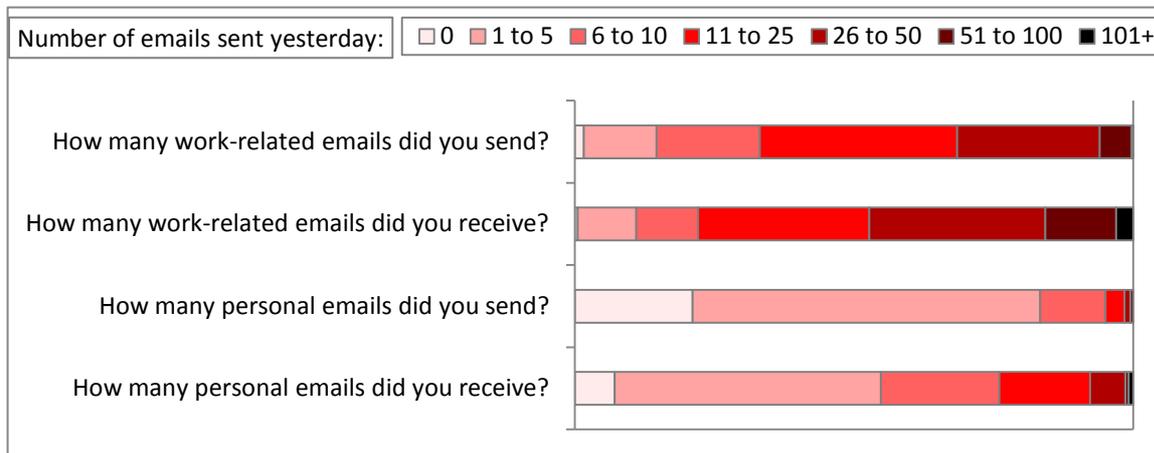
¹ Independent-samples t-test

Number of emails sent and received

Overall findings

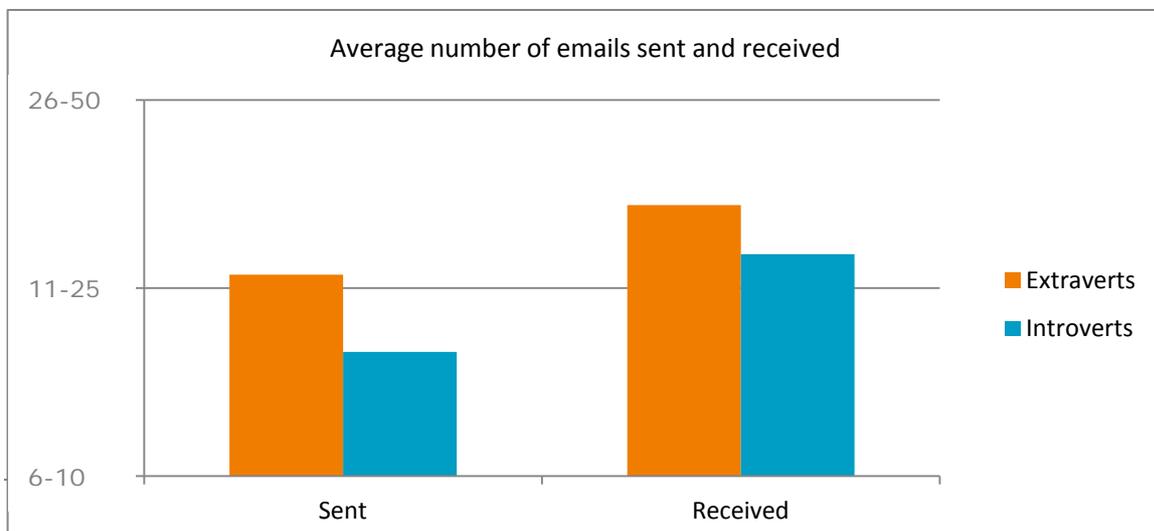
We asked people how many emails they had sent and received on their most recent working day. We found that:

- Most people sent and received more work than personal emails
- On average, they received more work emails (averaging 25–50 emails a day – modal value) than they sent (mode 11–25 emails)
- Most people reported receiving about as many personal emails as they sent (mode 1–5 emails).



Type differences

Extraverts sent and received significantly² more work related emails (but not personal emails) than did Introverts. Both Extraverts and Introverts reported receiving more emails than they send.

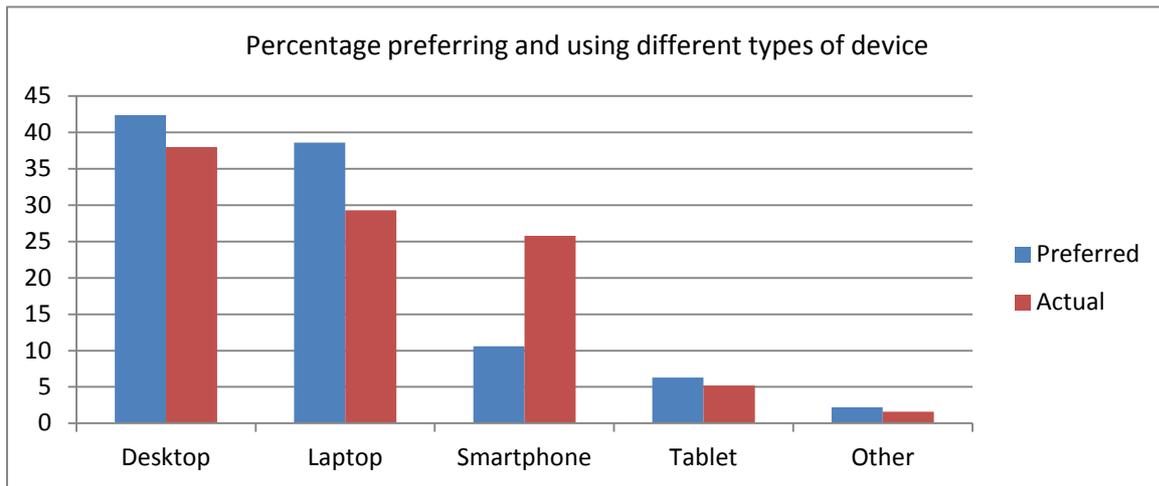


² Independent-samples t-test

Ways of accessing email

Devices used

We asked respondents which devices they preferred to use to access email, and which device they actually did use most often.



Desktop and laptop computers are both what most respondents prefer to use, and what they actually do use. Smartphones are used most often by a quarter of respondents, though only 10% of the group would prefer to use them.

There were no Type differences in device usage, but there was an age difference. Those who preferred to use a smartphone were significantly younger than those who preferred to use other devices.³ There were no differences in actual device use.

Not surprisingly, those who used a desktop computer most often to check email felt significantly less pressure to check work email outside of work than those who used a laptop or smartphone.⁴

Email accounts

The majority of the group used one account for work emails and one separate account for personal emails. A minority combined work and personal accounts or used multiple work and/or personal email accounts. Respondents were more likely to receive automatic notifications for work emails than for personal emails.

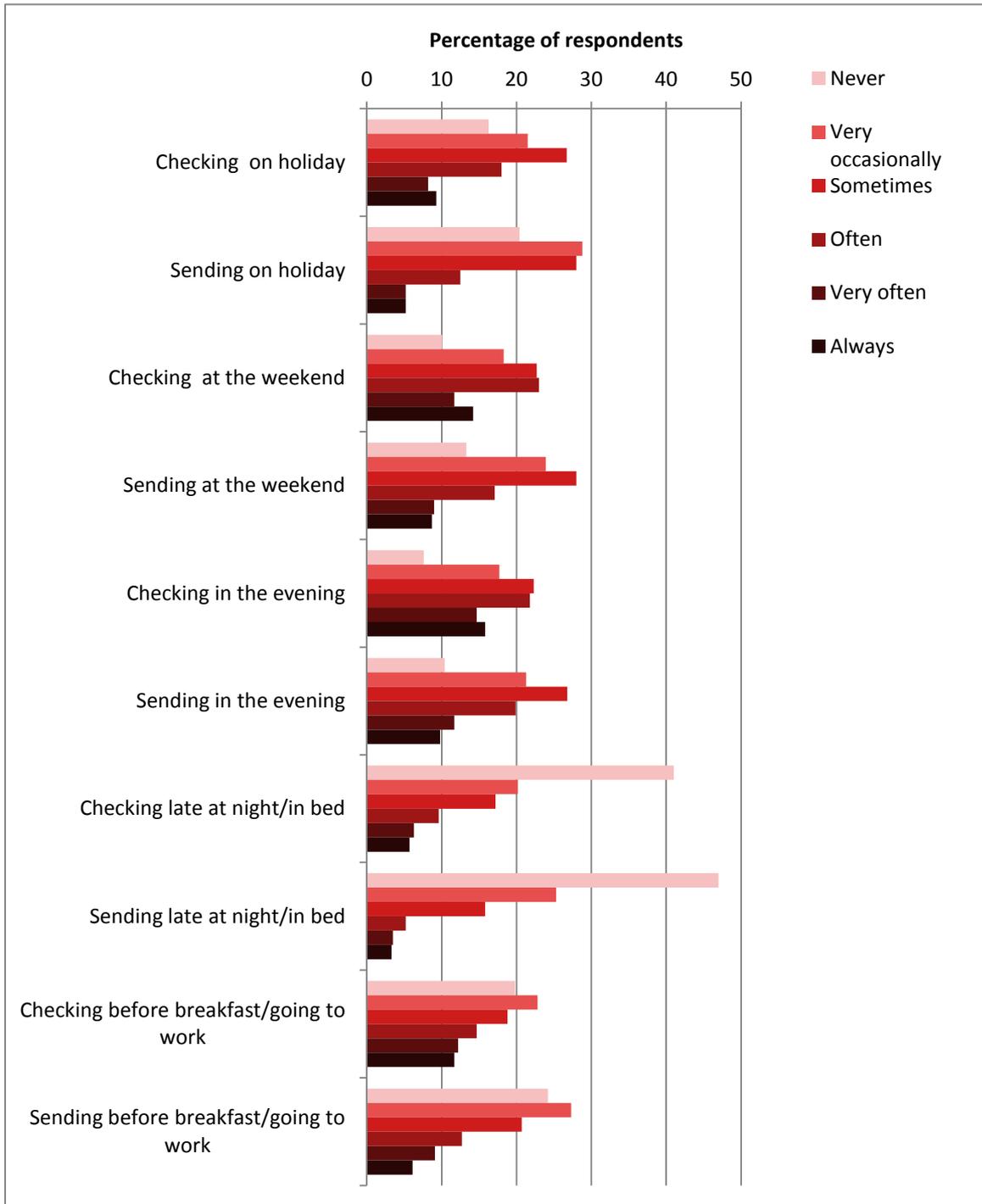
³ Oneway ANOVA.

⁴ Oneway ANOVA.

Using email outside of 'normal' working hours

Overall findings

Respondents were asked how often they accessed emails in a range of situations:



- Most respondents checked and sent emails outside of normal working hours, on holiday, at the weekend, and in the evening.
- They were somewhat less likely to access email in the morning, and least likely to do so late at night or in bed. However, even here, less than half *never* checked (41%) or sent (47%) emails late at night or in bed.
- In every 'out of hours' context, the group were less likely to send emails than to check them.

Group differences and other factors

It was predicted that those with a preference for Perceiving would be more likely to access email outside of working hours. This was not the case, but a significant difference was found on the Sensing-iNtuition dichotomy. Those with a preference for iNtuition were significantly more likely to check emails on holiday, at the weekend, in the evening, or before going to work than those with a Sensing preference, and to send work emails at the weekend, in the evening, or before going to work.

Looking at dominant functions, Conservers (Introverted Sensing – ISTJ, ISFJ) were the least likely to check their email at the weekend, significantly less so than most other groups. Directors (Extraverted Thinking – ESTJ, ENTJ) were significantly more likely to do this than either Conservers or Activists (Extraverted Sensing – ESTP, ESFP). Directors were also the most likely to check their emails before breakfast or going to work, significantly more so than Conservers or Activists, or Consciences (Introverted Feeling – ESFJ, ESFJ). Conservers were the least likely.⁵

Men were significantly more likely to check and send work emails on holiday, at the weekend, in the evening, and before breakfast than were women.⁶ Older people were more likely to feel pressure to check emails outside work, and to send more emails on holiday, at the weekend, and in the evening.⁷

As expected, and in line with previous research (Kushlev & Dunn, 2015), those who send work emails more frequently on holiday, in the evening, late at night or in bed, and before breakfast were more stressed, as were those who checked work emails in the evening, late at night or in bed, and before breakfast or going to work.⁸

⁵ Oneway ANOVA

⁶ Independent-samples t-tests

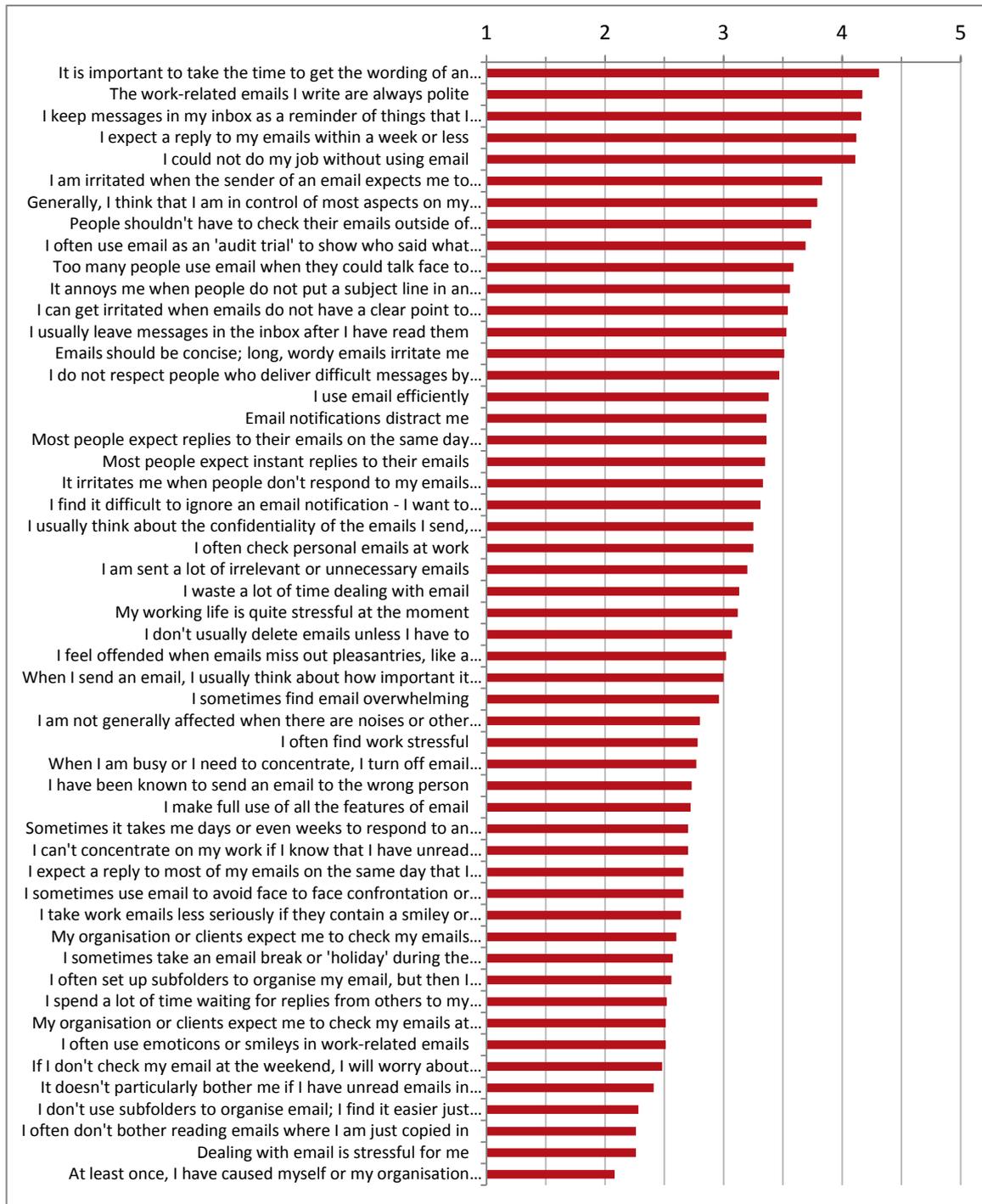
⁷ Independent-samples t-tests

⁸ Correlational analysis

Views on email

Overall findings

Respondents were asked 65 questions about their views on email, answering each question on a 5-point scale from 1 (strongly disagree) to 5 (strongly agree).



The majority of people agreed with the following statements:

- It is important to take the time to get the wording of an email right
- The work-related emails I write are always polite
- I keep messages in my inbox as a reminder of things that I need to do
- I expect a reply to my emails within a week or less
- I could not do my job without using email
- I am irritated when the sender of an email expects me to read through a long chain in order to get to the relevant information
- Generally, I think that I am in control of most aspects on my working life
- People shouldn't have to check their emails outside of normal working hours
- I often use email as an 'audit trail' to show who said what and when on a project
- Too many people use email when they could talk face to face or via the phone
- It annoys me when people do not put a subject line in an email
- I can get irritated when emails do not have a clear point to them
- I usually leave messages in the inbox after I have read them
- Emails should be concise; long, wordy emails irritate me

And disagreed with the following:

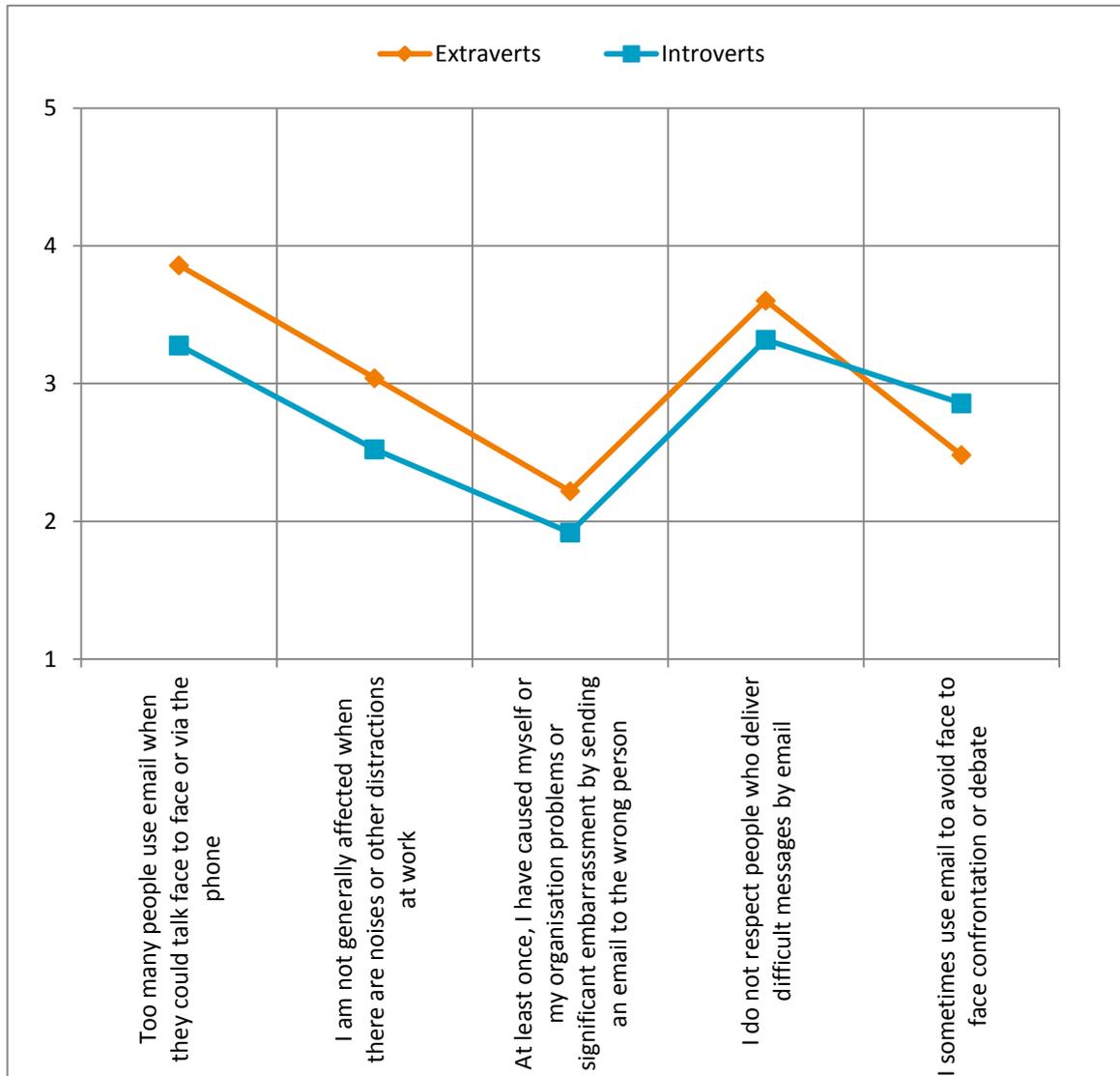
- If I don't check my email at the weekend, I will worry about what could be waiting for me at work on Monday
- It doesn't particularly bother me if I have unread emails in my inbox
- I don't use subfolders to organise email; I find it easier just to search my inbox
- I often don't bother reading emails where I am just copied in
- Dealing with email is stressful for me
- At least once, I have caused myself or my organisation significant embarrassment by sending an email to the wrong person

Two factors should be borne in mind when reviewing these overall results:

- Even though the survey was anonymous, there may be a degree of socially desirable responding. Most people stated that their work-related emails are always polite, and many disagreed with the statement 'I have been known to send an email to the wrong person'.
- Although most people agree with the statement 'people shouldn't have to check their emails outside of normal working hours', many (though not most) say that their organisation or clients expect them to check their emails in the evenings or at weekends.

E-I differences

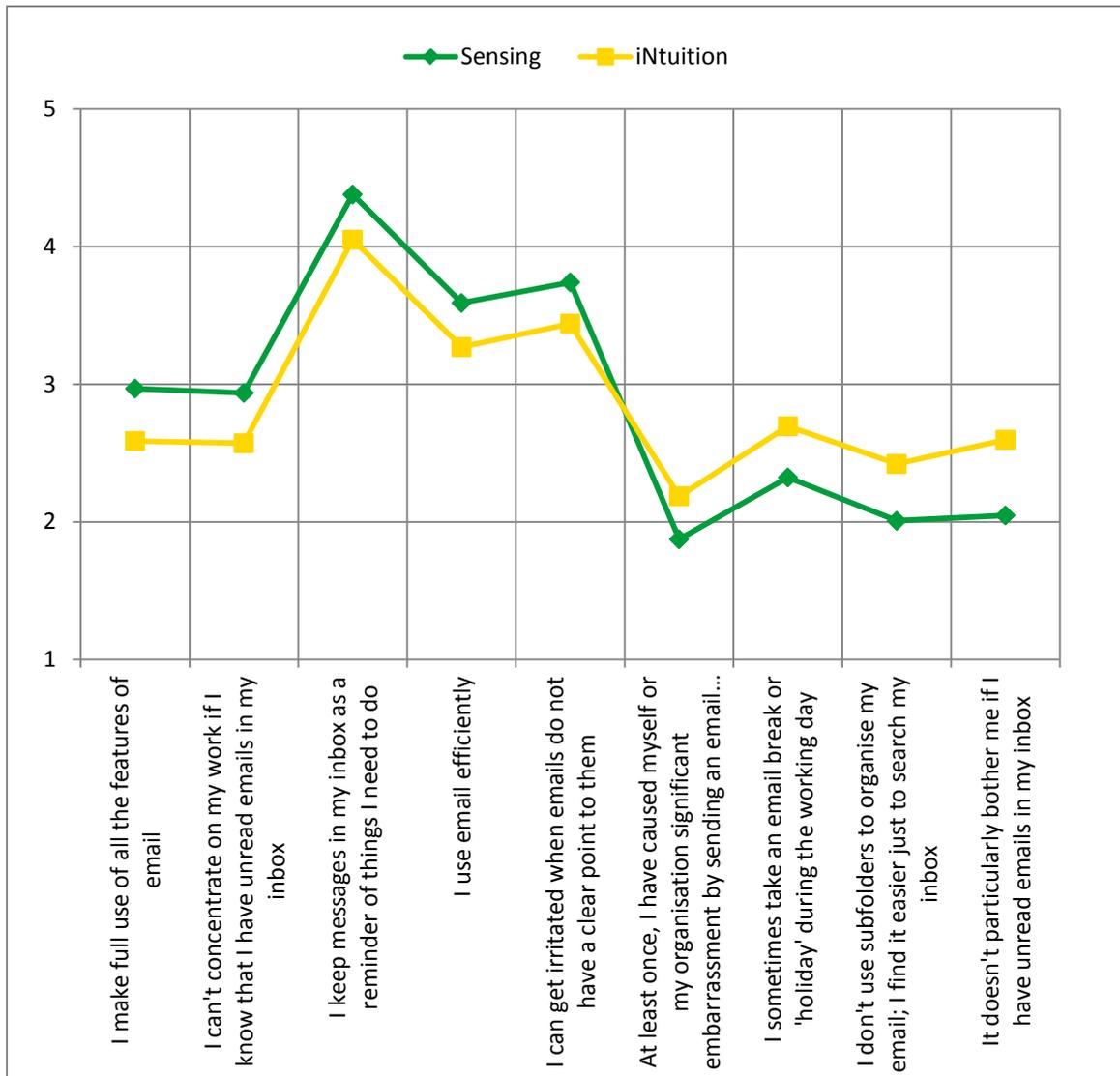
Five questions showed a significant difference in average response between Extraverts and Introverts (based on an independent-samples t-test; 1% sig level)).



Although both groups in general agree that too many people use email when they could talk face to face or via the phone, Extraverts are significantly more likely to endorse this statement. Introverts are more likely than Extraverts to, on occasion, use email to avoid face to face confrontation or debate.

S-N differences

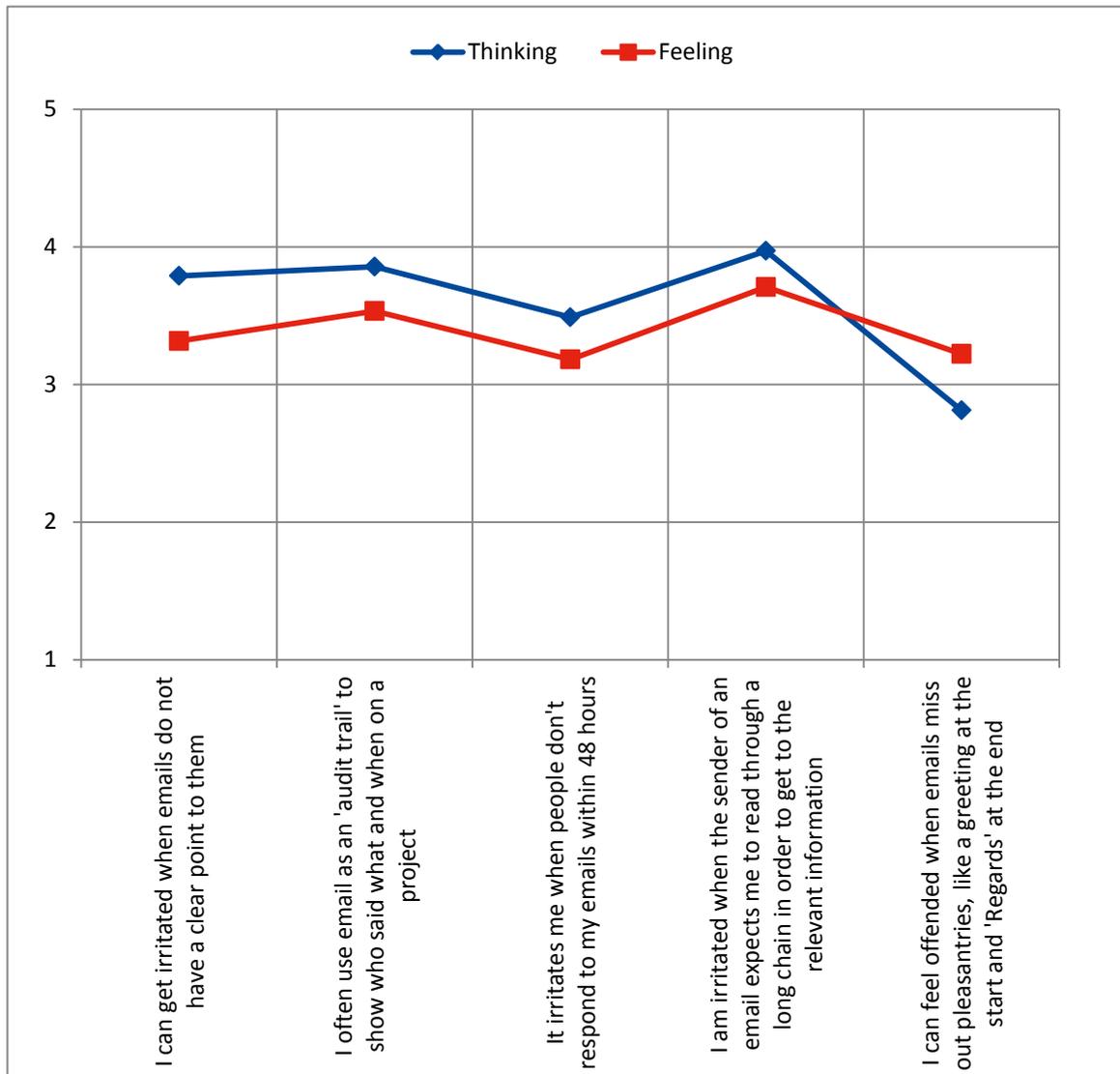
Nine questions showed a significant difference in average response between those with a Sensing and those with an iNtuition preference (based on an independent-samples t-test; 1% significance level).



Those with a Sensing preference are likely to be more structured in their use of email, feel they use email efficiently, and are keener that emails are clear and concise. Those with an iNtuition preference are less structured and more casual in their use of email.

T-F differences

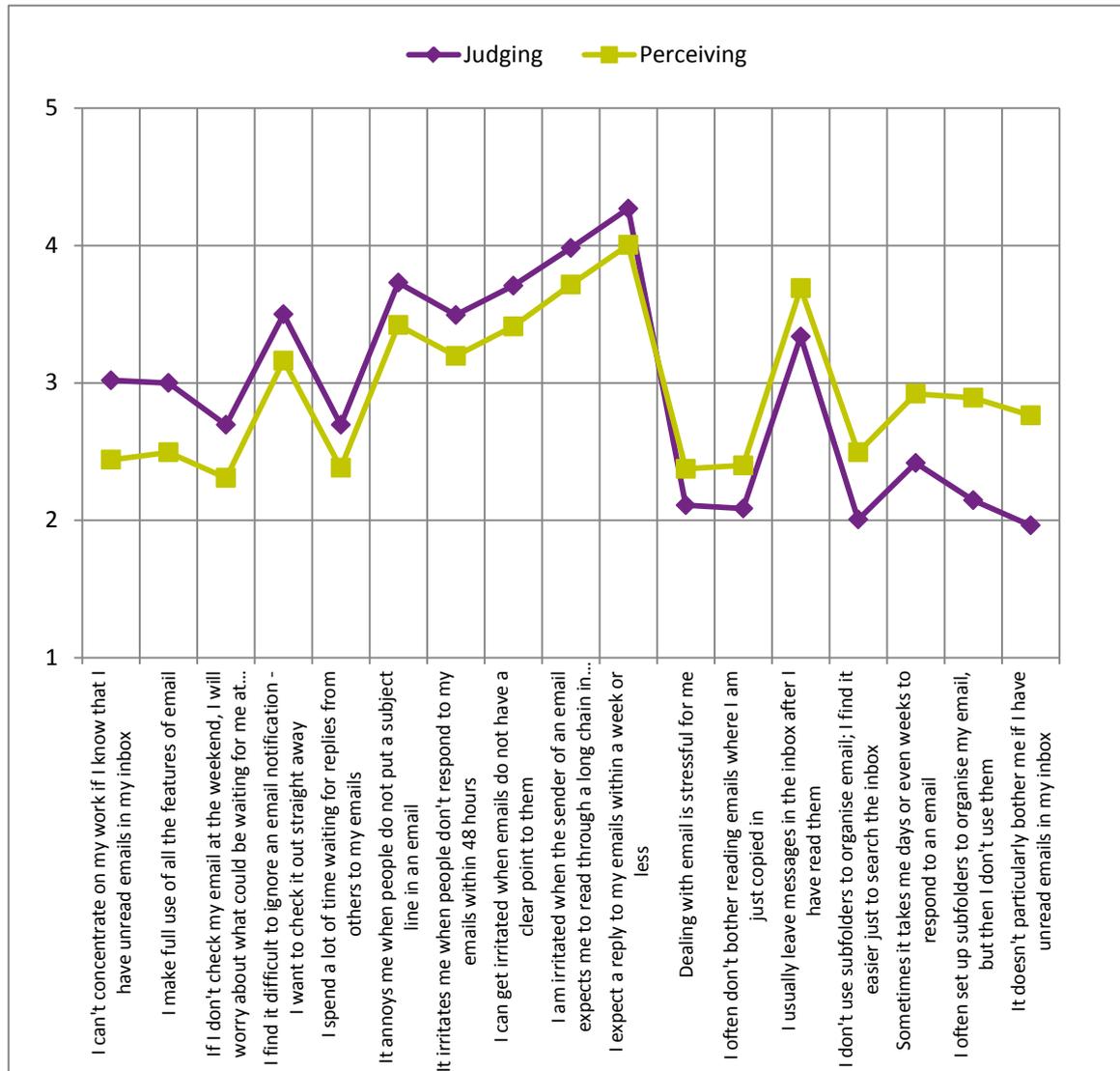
Five questions showed a significant difference in average response between those with a Thinking and those with a Feeling preference (based on an independent-samples t-test; 1% significance level).



Those with a Thinking preference particularly value efficiency, getting to the point, and speed of response. These are also valued, though less highly, by those with a Feeling preference. The latter group are, however, more likely to be offended if emails omit pleasantries.

J-P differences

Seventeen questions, more than for any other dichotomy, showed a significant difference in average response between those with a Judging and those with a Perceiving preference (based on an independent-samples t-test; 1% significance level).



Most people expect a relatively quick response to emails, but those with a Judging preference are more irritated when they do not receive this, are less likely to take a long time to respond themselves, and are more likely to spend time waiting for emails from others. They find it more difficult to ignore notifications and are less able to concentrate on their work when they have unread emails. Those with a Perceiving preference are less structured in their use of email, often not using subfolders or else setting them up and then not using them, and are relatively relaxed about having unread emails.

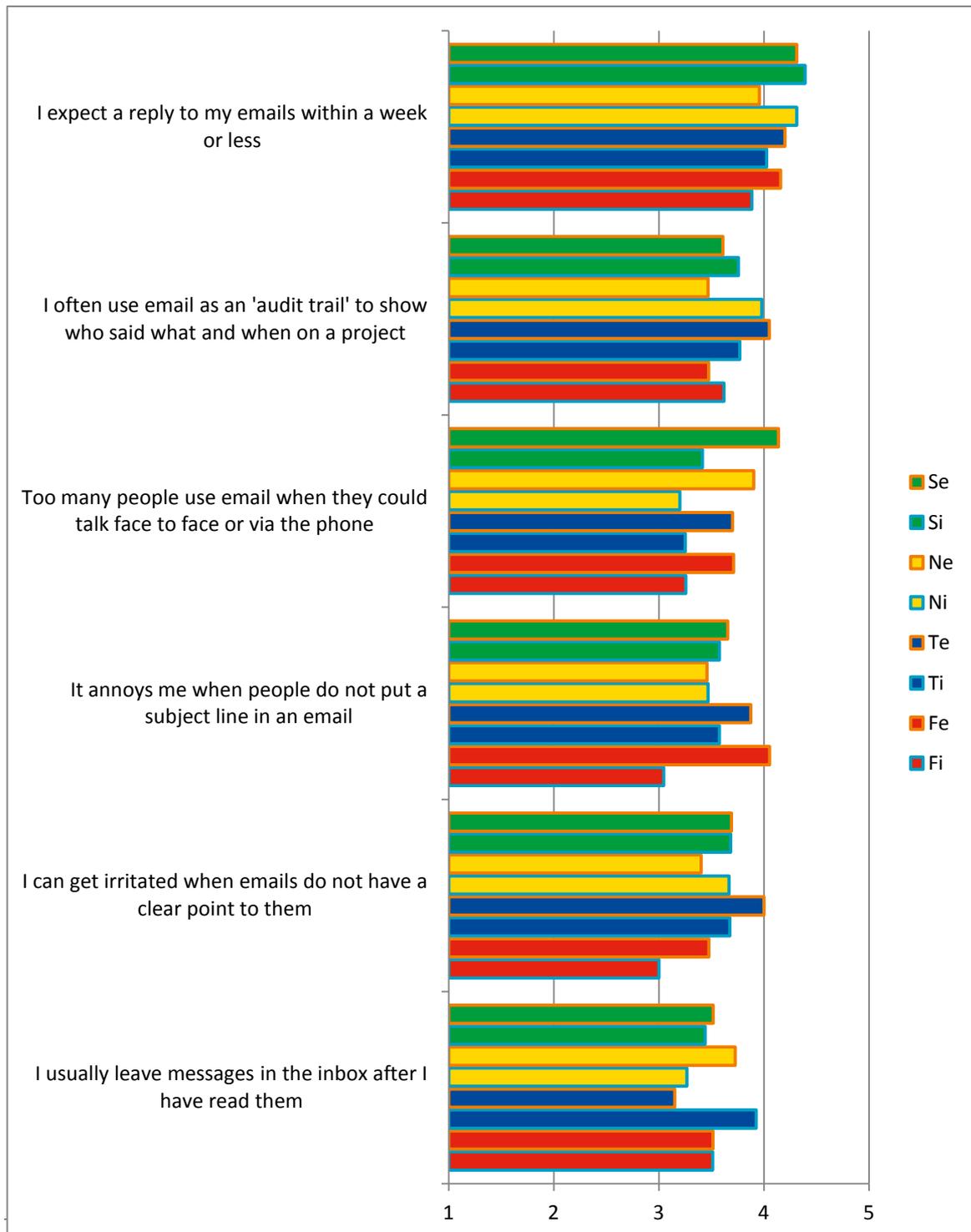
Functional pairs

The *functional pairs* of Type (ST, SF, NT and NF) describe the way in which we prefer to take in information, and the way in which we prefer to make decisions. As such, they are important for understanding how people communicate and wish to be communicated to. The figure below shows which questions were particularly likely to be chosen by the ST, SF, NT and NF groups. Overlaps show which were likely to be chosen by more than one group. Questions in the middle of the chart were agreed to by all groups.

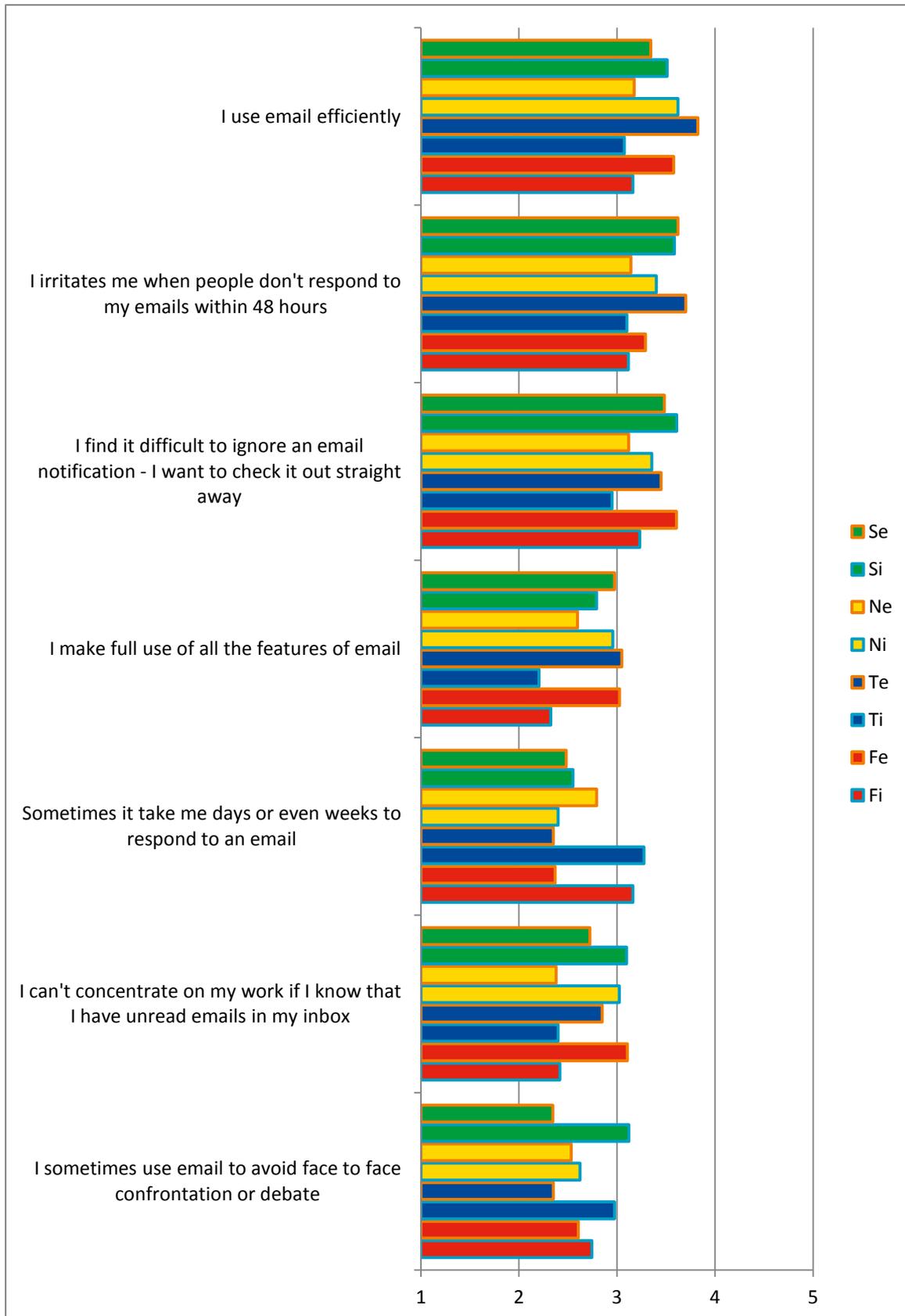


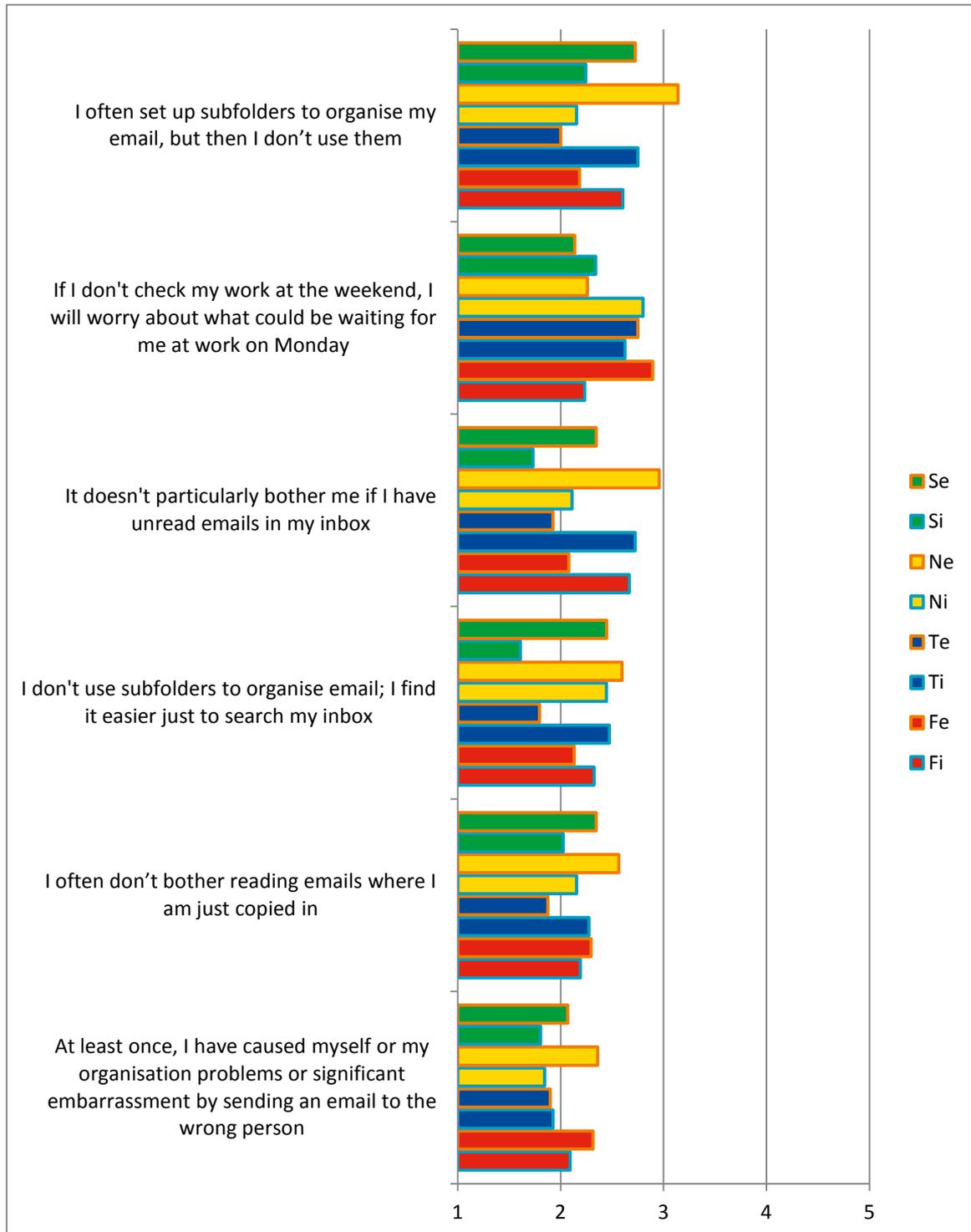
Dominant functions

A number of questions were answered in a significantly⁹ different way by people with different dominant functions:



⁹ Oneway ANOVA





The implications for each dominant function are described on the following pages.

S^e Extraverted Sensing – the Activist (ESTP, ESFP)

Activists are the most likely to agree that too many people use email when they could talk face to face or via the phone, and are amongst the most likely to expect fairly quick responses to their emails. They are amongst the least likely to worry if they don't check their emails at the weekend, and, along with Directors, the least likely to use email to avoid face to face confrontation or debate.

Sⁱ Introverted Sensing – the Conserver (ISTJ, ISFJ)

Conservers find it difficult to ignore email notifications, and are the least comfortable with having unread emails in their inbox; they also expect fairly quick responses to their emails. They are the group most likely to use subfolders to organise their emails. They may find it difficult to concentrate on their work if they know they have unread emails in their inbox. They are one of the most likely groups to use email to avoid email confrontation or debate, and one of the least likely to cause embarrassment by sending an email to the wrong person.

N^e Extraverted iNtuition – the Explorer (ENTP, ENFP)

Along with Activists, Explorers often feel that too many people use email when they could talk face to face or via the phone. It does not particularly bother them if they have unread emails in their inbox; once messages have been read, Explorers will often leave them in the inbox. They are the group least likely to use subfolders to organise their email, and the group most likely to set up subfolders but then not use them. They may not bother reading emails where they have just been copied in and, along with Nurturers, are the group most likely to cause embarrassment by sending an email to the wrong person.

Nⁱ Introverted iNtuition – the Visionary (INTJ, INFJ)

In common with Directors, Visionaries expect fairly quick responses to their emails and will often use email as an 'audit trail' to show who said what when about a project. They may find it difficult to concentrate on their work if they know they have unread emails in their inbox. It may sometimes take them days or even weeks to respond to an email, but they are one of the least likely groups to cause embarrassment by sending an email to the wrong person.

T^e Extraverted Thinking – the Director (ESTJ, ENTJ)

In common with Visionaries, Directors expect fairly quick responses to their emails and will often use email as an 'audit trail' to show who said what when about a project. They believe that they use email efficiently; they are one of the most likely groups to use subfolders to organise their emails, and the least likely to set up subfolders but then not use them. They can be annoyed when people do not put a subject line in an email, and are likely to be irritated when emails do not have

a clear point to them. Along with Activists, they are the least likely to use email to avoid face to face confrontation or debate.

Tⁱ Introverted Thinking – the Analyst (ISTP, INTP)

Analysts usually leave messages in the inbox after they have read them, and are the least likely group to agree that they use email efficiently, or to use all the features of email. They find it easier than most to ignore email notifications and can usually concentrate on their work even if they have unread emails in their inbox. Along with the Conscience group, they may sometimes take days or even weeks to respond to an email. They are one of the most likely groups to use email to avoid email confrontation or debate.

F^e Extraverted Feeling – the Nurturer (ESFJ, ENFJ)

Nurturers are the group most likely to be annoyed when people do not put a subject line in an email. They find it difficult to ignore email notifications and may find it difficult to concentrate on their work if they know they have unread emails in their inbox. They will tend to respond to emails quickly but, along with Explorers, are the group most likely to cause embarrassment by sending an email to the wrong person. They are the group most likely to worry if they don't check their emails at the weekend.

Fⁱ Introverted Feeling – the Conscience (ISFP, INFP)

This group are the least annoyed when people do not put a subject line in an email, and the least irritated when emails do not have a clear point to them. They do not always feel that they use email efficiently, or that they make use of all the features of email. Along with Analysts, they can usually concentrate on their work even if they have unread emails in their inbox, but they may sometimes take days or even weeks to respond to an email.

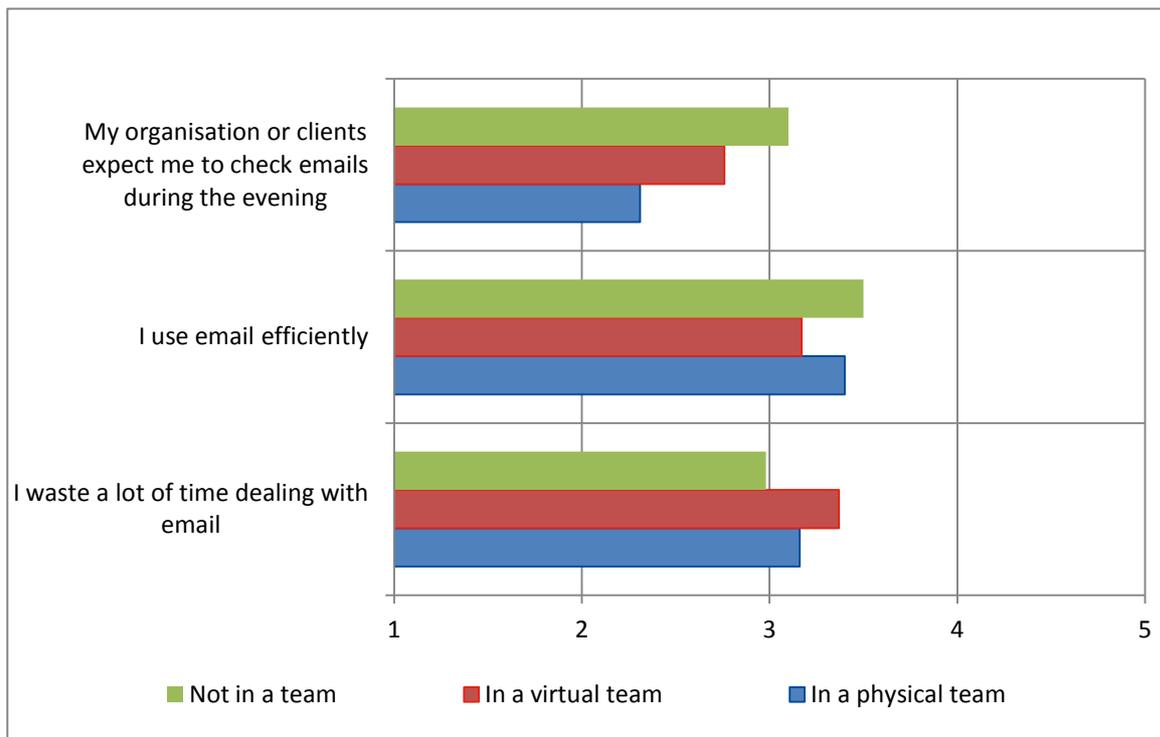
Looking at how long people with different dominant functions take to reply to an email, and how quickly they expect replies to their own emails, there is a mismatch. People who have a dominant Extraverted decision-making (judging) function (ESTJ, ESFJ, ENFJ, ENTJ) tend to reply to emails quickly, but may not expect quite so quick a reply to their own emails as others might suppose. Those who have a dominant Introverted decision-making (Judging) function (ISTP, ISFP, INFP, INTP) can take a long time to reply to emails, but then expect a reply quickly. People with other Type preferences typically reply about as quickly as they themselves expect to be replied to.

Gender differences

Based on an independent-samples t-test, and a 1% significance level, only one question showed a significant difference between men and women. Men were significantly more likely to check personal emails at work. This is consistent with previous research (Vitak, Crouse, & LaRose, 2011) which has shown that men are more likely than women to demonstrate what have sometimes been called ‘cyberslacking’ behaviours at work, although this name may be misleading; in our survey, those who checked personal emails at work were also more likely to check and send work emails outside of normal working hours. Male INFJs are the most likely group to check personal emails at work and female ISFJs and ESFJs the least likely¹⁰.

Type of team

Based on a one-way ANOVA (analysis of variance), and a 1% significance level, three questions showed significant differences between respondents from different types of team. Members of virtual teams feel that they waste more time dealing with email and that they use email less efficiently.



¹⁰ A univariate ANOVA showed a significant main effect of gender on checking personal emails, and no main effects with Type, but a significant interaction effect of gender with E-I * T-F * J-P on this question.

Organisation size

Individuals working in larger organisations are more likely to:

- Believe that people shouldn't have to check email outside of normal working hours ($r=0.24$)
- Find their working life quite stressful at the moment ($r=0.20$)

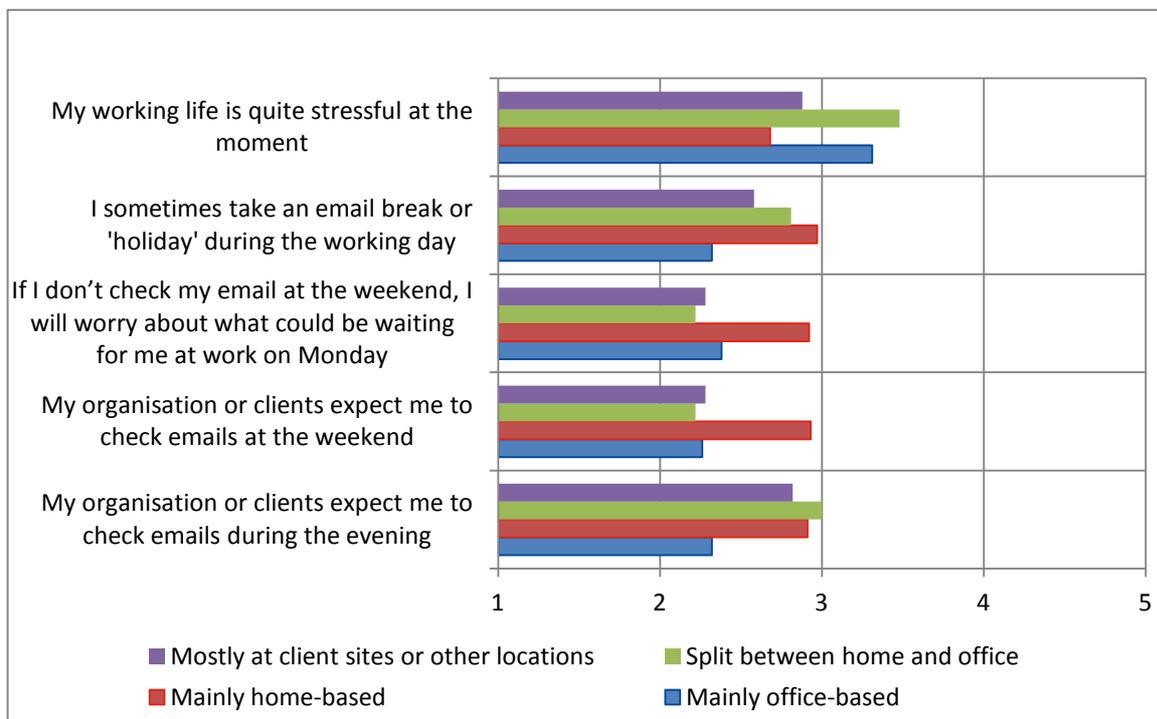
And are less likely to:

- Be expected to check emails during the evening ($r=-0.28$)
- Be expected to check emails at the weekend ($r=-0.26$)
- Often check personal emails at work ($r=-0.21$)
- Sometimes take an email break or 'holiday' ($r=-0.20$)

(values in brackets are correlations)

Working environment

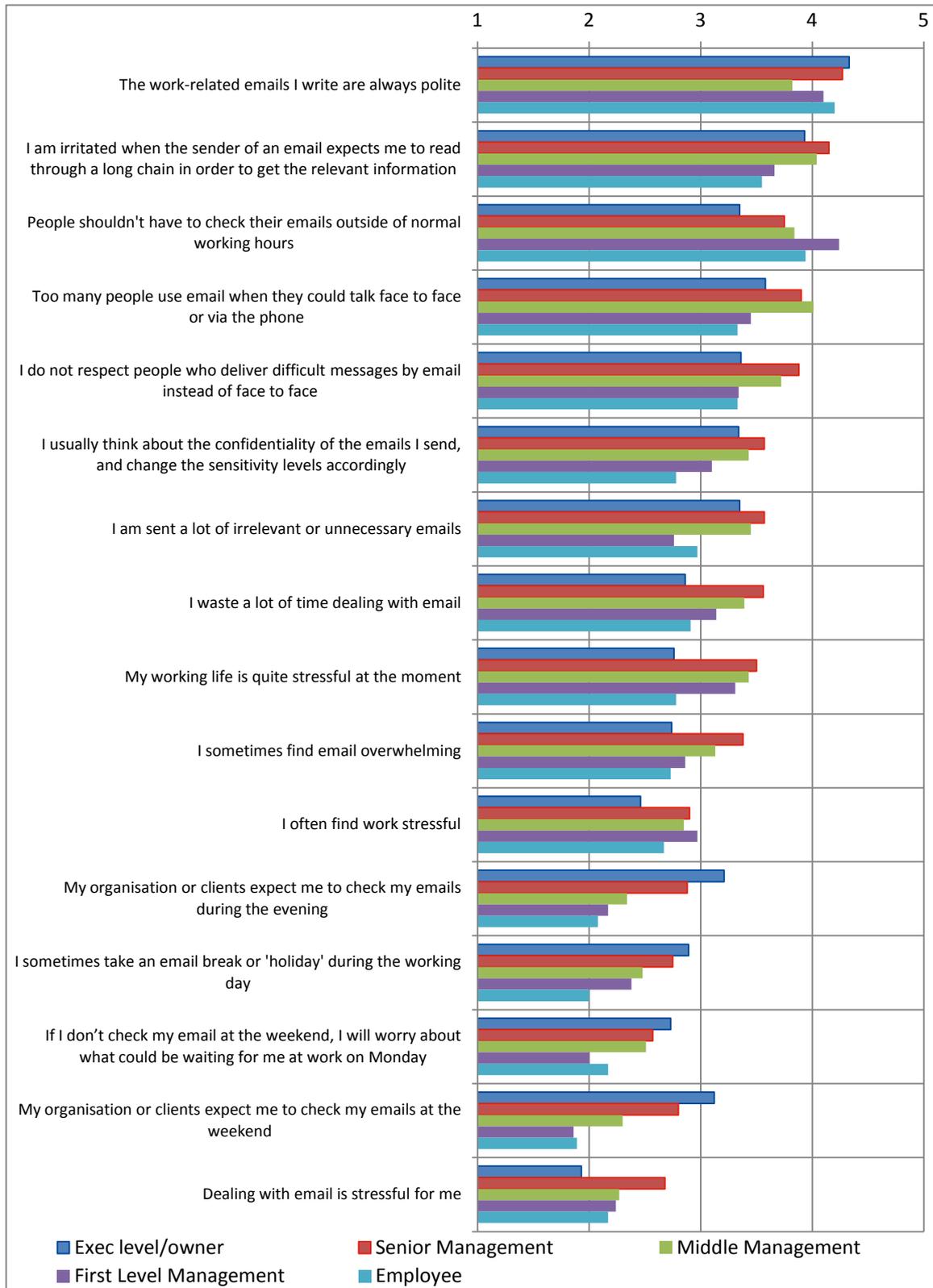
There were significant differences between people working in different types of environment.



Those who work from home are the least stressed and are more likely to take email breaks, but are also more likely to be obligated to check emails at the weekend. Office-based workers are significantly less likely to be expected to check their emails during the evening.

Job level

A number of questions show statistically significant differences by job level.



Looking at each job level in turn:

Executives and company owners

- Along with senior and middle managers, they are particularly irritated when they have to read through a long chain in order to get to the relevant information
- They are the least likely to say that people shouldn't have to check their email outside normal working hours
- Along with senior and middle managers, they feel they are sent a lot of irrelevant or unnecessary emails
- Are the most likely group to be expected to check their emails during the evening or at the weekend
- Are the most likely group to take an email break or 'holiday' during the working day
- Are the least likely group to find their work stressful and the least likely to find dealing with email stressful.

Senior managers

- Along with executives and middle managers, they are particularly irritated when they have to read through a long chain in order to get to the relevant information
- Along with executives and middle managers, they feel they are sent a lot of irrelevant or unnecessary emails
- Along with middle managers, they say they waste a lot of time dealing with email
- Sometimes find email overwhelming
- Along with middle and first level managers, they say that their working life is quite stressful at the moment
- Are the group most likely to find dealing with email stressful (though on average they do not find this especially stressful in absolute terms)
- Along with middle managers, say that too many people use email when they could talk face to face or via the phone, and that they do not respect those who deliver difficult messages by email instead of face to face.

Middle managers

- Are the least likely group to say that their emails are always polite
- Along with executives and senior managers, they are particularly irritated when they have to read through a long chain in order to get to the relevant information
- Along with executives and senior managers, they feel they are sent a lot of irrelevant or unnecessary emails
- Along with senior managers, they say they waste a lot of time dealing with email
- Along with senior and first level managers, they say that their working life is quite stressful at the moment

- Along with senior managers, they say that too many people use email when they could talk face to face or via the phone, and that they do not respect those who deliver difficult messages by email instead of face to face.

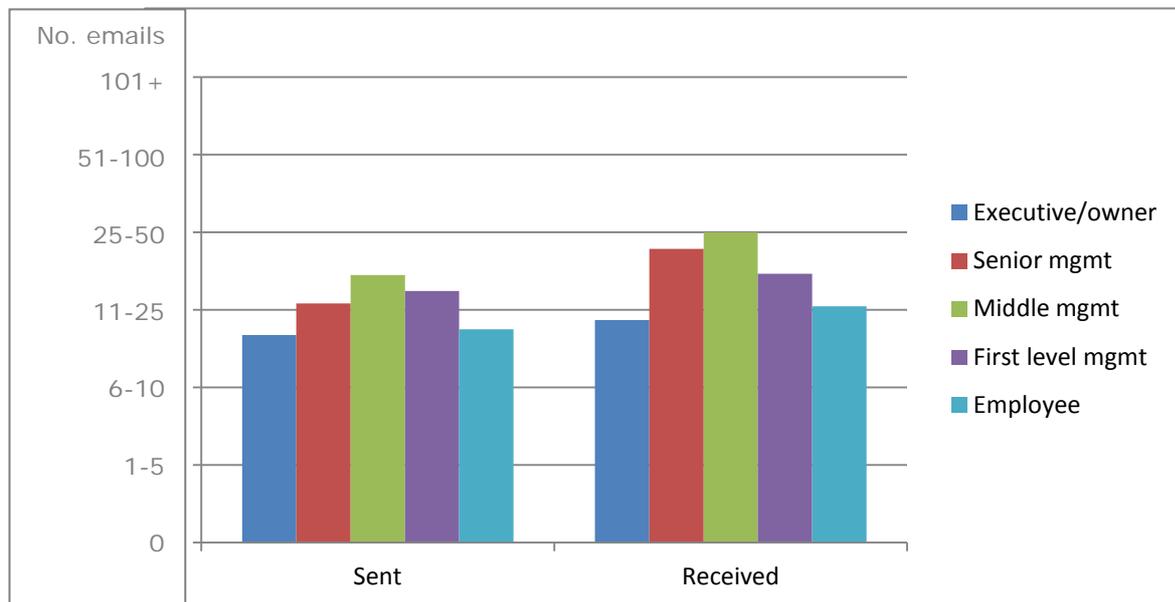
First level managers

- Are the most likely group to say that people shouldn't have to check their email outside normal working hours
- Along with senior and middle managers, they say that their working life is quite stressful at the moment

Non-managerial employees

- Are the group least likely to think about the confidentiality of the emails they send
- Are the group least likely to be expected to check their emails during the evening
- Are the least likely group to take an email break or 'holiday' during the working day

As managers, on average, sent and received significantly¹¹ more emails in the previous working day than did others, it may not be surprising that they report more email stress.



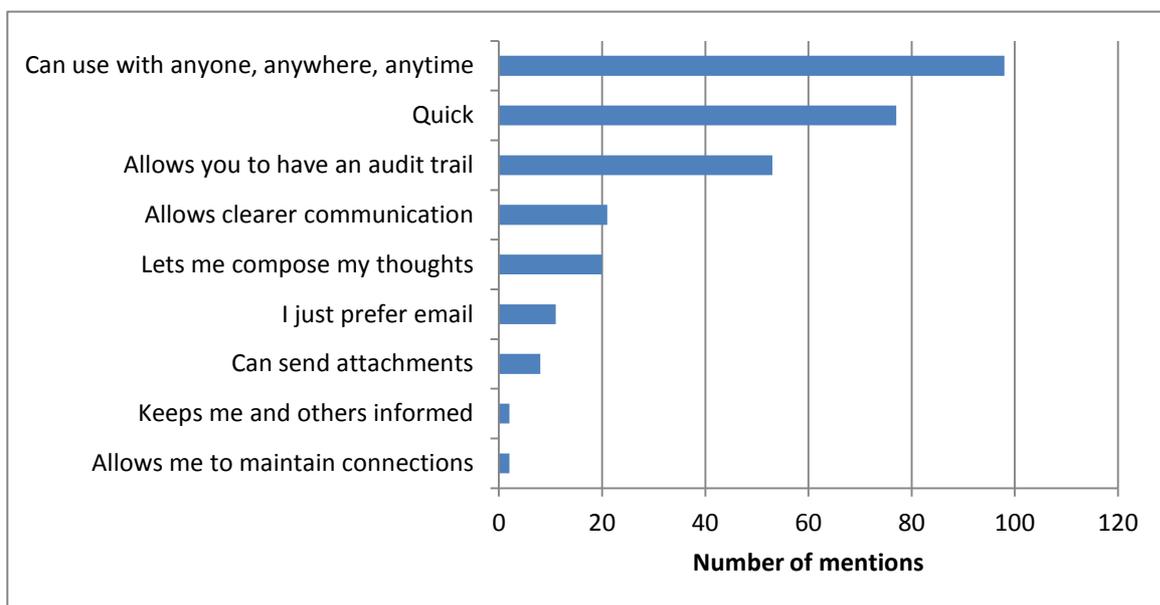
Best and worst aspects of using email

¹¹ Oneway ANOVA

Respondents were asked, in two open-ended questions, what they considered the best and worst things about email. Thematic analysis was used to classify these responses into a number of categories.

Best thing about email

The best aspects of email included: being able to use it with anyone, anywhere, anytime; speed; and providing an audit trail.

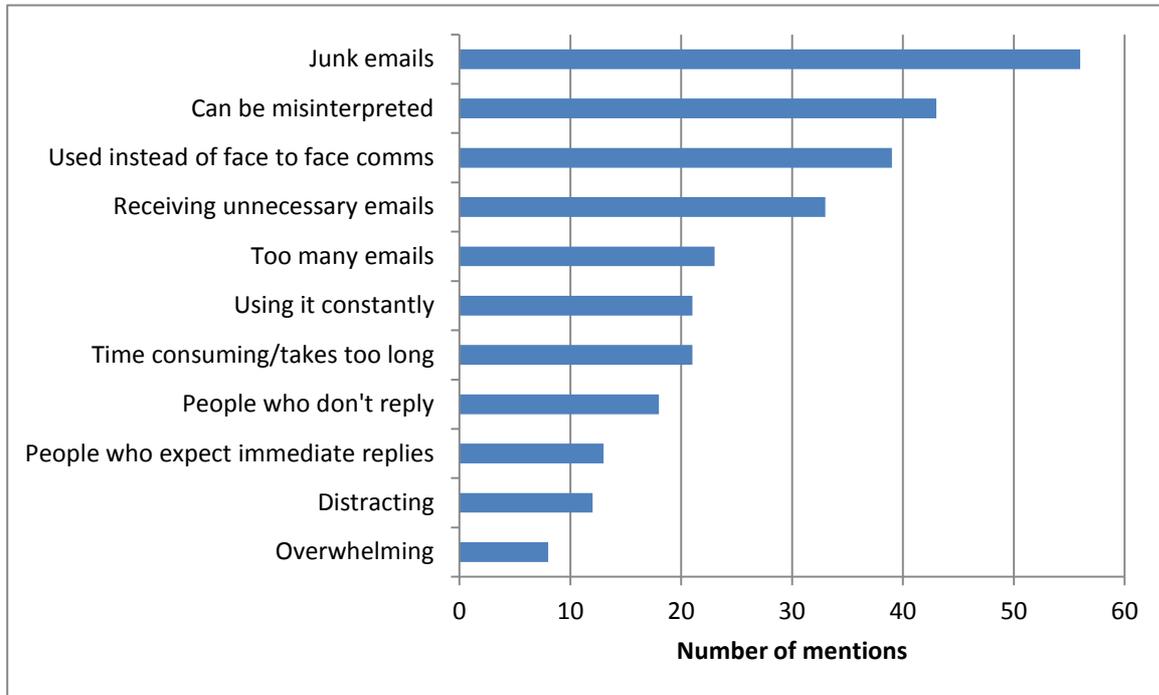


The aspects that particularly appeal to each dominant function are shown below.

S^e	Can use with anyone, anytime, anywhere
Si	Allows clearer communication; allows you to have an audit trail
N^e	Quick; allows clearer communication
Ni	Lets me compose my thoughts; just prefer email
T^e	Quick; helps organisation
Ti	Allows you to have an audit trail
F^e	Can use with anyone, anytime, anywhere; quick
Fi	Lets me compose my thoughts; I just prefer email

Worst thing about email

The worst aspects of email included: junk emails; ease of misinterpretation of email; and use of email instead of face to face communication.



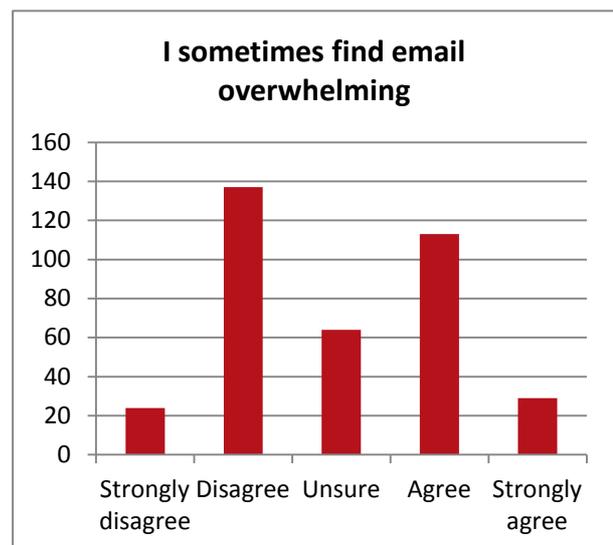
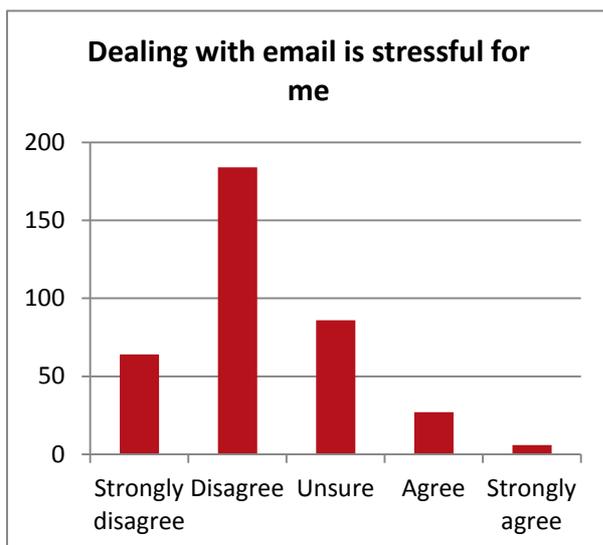
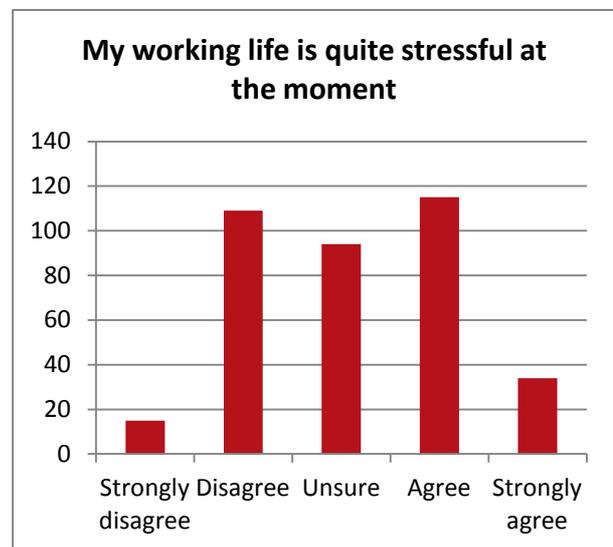
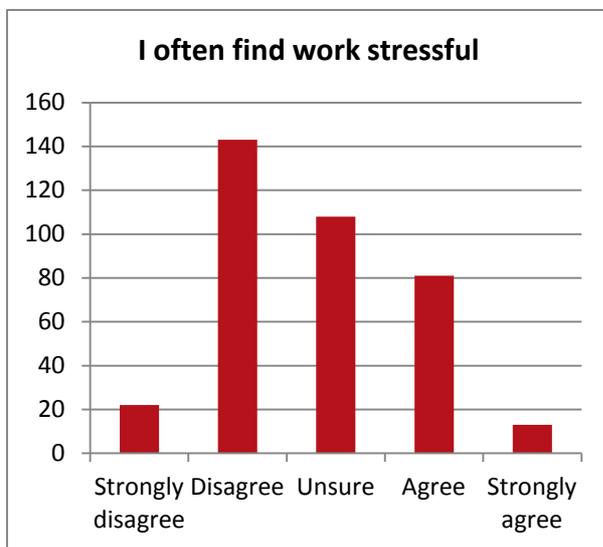
The aspects that each dominant function particularly disliked are shown below.

S^e	Distracting; used instead of face to face comms; junk email
Si	Junk email; amount of emails; can be misinterpreted
N^e	Used instead of face to face; receiving unnecessary emails; junk email
Ni	People who expect immediate replies; receiving unnecessary emails; misinterpretation
T^e	Using it constantly; junk emails; misinterpretation
Ti	Time consuming; used instead of face to face
F^e	People not replying to emails; amount of emails; misinterpretation
Fi	Can be misinterpreted; can be overwhelming; amount of emails

Stress and email

Stress questions in the survey

Previous research has shown that email can be a source of stress, for example for managers (Future Work Centre, 2015), those who see email as distracting (Hair, Renaud, & Ramsay, 2007), and for those who send or receive more emails or who feel less in control of their working life (Reinke & Chamorro-Premuzic, 2014); (Jerejian, Reid, & Rees, 2013). To investigate the relationship between stress, email and personality, we included four stress-related questions in the survey. The charts below show the number of people choosing each option for each question.



While most respondents disagreed that they found dealing with email stressful, over a third sometimes find email overwhelming and many were currently quite stressed at work.

The scores from each question were added together to give an overall 'stress score' for each respondent. This stress scale has good psychometric properties (coefficient alpha = 0.76, mean = 11.09, standard deviation = 3.07).

Factors contributing to email stress

People with a higher score on the stress scale:

- Were more likely to be employed full-time than self-employed
- Were more likely to work in a large organisation
- Were more likely to work in management or HR and less likely to work in coaching or consultancy
- Were more likely to be at senior or middle management level and less likely to be at executive or employee level
- Send and especially receive more work-related emails. The number of personal emails sent or received had no significant effect
- Were more likely than others to send work emails on holiday, in the evening, late at night or in bed, and before breakfast or going to work
- Were more likely than others to check work emails in the evening, late at night or in bed, and before breakfast or going to work
- Were more likely than others to agree with the following statements (only those correlations significant at the 1% level are given; correlation shown in brackets):
 - I waste a lot of time dealing with email (0.519)
 - Sometimes it take me days or even weeks to respond to an email (0.328)
 - Email notifications distract me (0.317)
 - I am sent a lot of irrelevant or unnecessary emails (0.238)
 - I spend a lot of time waiting for replies from others to my email (0.235)
 - I sometimes take an email break or 'holiday' during the working day (0.202)
 - Most people expect instant replies to their emails (0.182)
 - I can get irritated when emails do not have a clear point to them (0.176)
 - I often don't bother reading emails where I am just copied in (0.175)
 - My organisation or clients expect me to check my emails at the weekend (0.174)
 - When I am busy or need to concentrate, I turn off email notifications (0.158)
 - I don't usually delete emails unless I have to (0.151)
 - My organisation or clients expect me to check my emails during the evening (0.150)
 - When I send an email, I usually think about how important it is, and change the importance level accordingly (0.143)

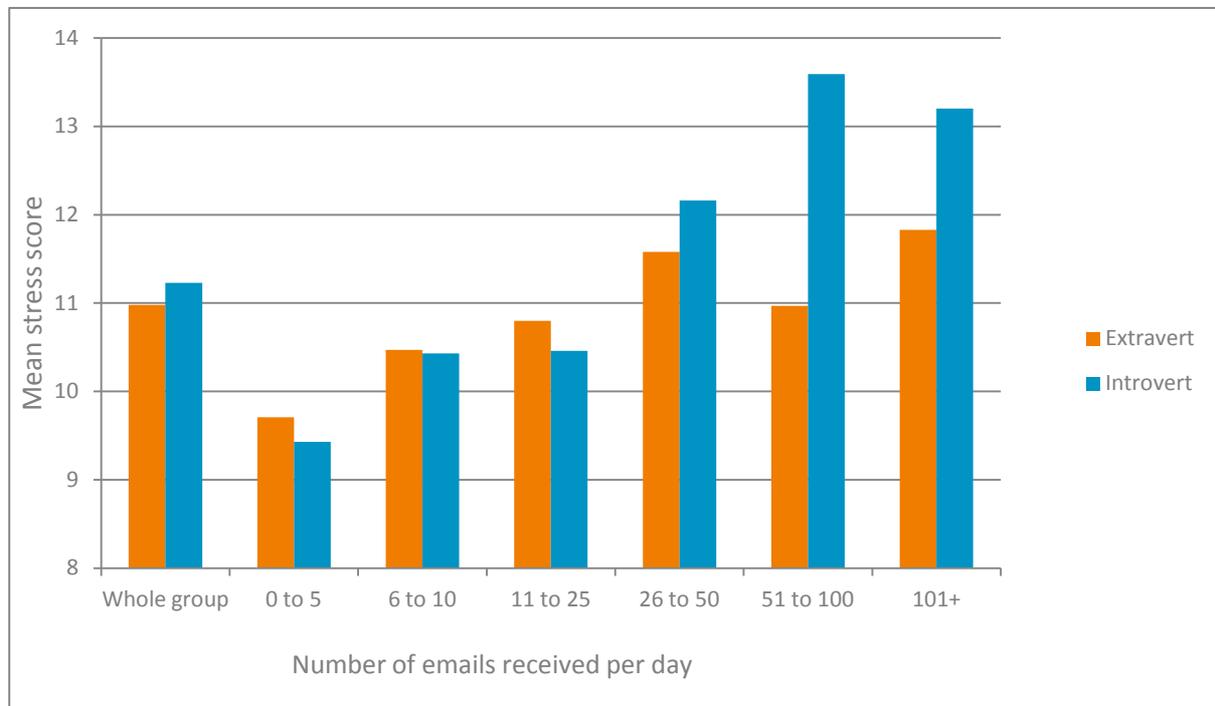
- If I don't check my email at the weekend, I will worry about what could be waiting for me at work on Monday (0.142)
- I sometimes use email to avoid face to face confrontation or debate (0.141)
- People shouldn't have to check their emails outside normal working hours (0.138)
- Were more likely than others to disagree with the following statements (only those correlations significant at the 1% level are given; correlation shown in brackets):
 - I use email efficiently (-0.320)
 - Generally, I think that I am in control of most aspects of my working life (-0.317)

Some of these factors may contribute to stress – for example, the number of emails an individual receives, or being expected to check emails at the weekend. Some factors may contribute to stress or may be an outcome; for example, are people irritated when emails do not have a clear point to them because they are already stressed, or do such emails cause stress in the first place? Others seem counterintuitive; for example, why would people who turn off email notifications be more stressed? These findings are in line with previous research which showed that checking whenever new messages arrive rather than checking at the end of the day is associated with lower levels of perceived email overload (Dabbish & Kraut, 2006), but appear to contradict other research that suggests that email notifications can be very disruptive (Renaud, Ramsay, & Hair, 2006); (Jackson, Dawson, & Wilson, 2001). It may be that those who are already more stressed are more open to the idea of adopting coping strategies.

Personality differences in stress

There were no significant differences in overall stress score at preference pair level, for whole Type, for dominant functions or functional pairs. Overall, no one Type is significantly more stressed than any other Type.

It had been predicted that Introverts would be more stressed than Extraverts, but this was not found overall. However, the number of emails an individual received showed a high correlation with stress, and Introverts received fewer emails overall. Therefore, the stress levels of Extraverts and Introverts were compared taking into account the number of emails received. The results are shown on the next page:



Overall, there is not a statistically significant difference between Extraverts and Introverts. As the number of emails received increases, both Extraverts and Introverts become more stressed. For those who receive more than 50 emails per day, Introverts are significantly more stressed than Extraverts.¹² Further analysis¹³ suggests that it is those who have a dominant Introverted Judging function who are most affected (Tⁱ and Fⁱ: ISTP, INTP, ISFP and INFP).

Stressors for each dominant function

The data for each dominant function was analysed independently to look for any specific stressors.

S^e Extraverted Sensing – the Activist

More stressed Activists were particularly likely not to bother reading emails where they were only copied in, and were especially irritated by long, wordy emails.

Sⁱ Introverted Sensing – the Conservator

Unlike other Types, the number of emails sent by Conservators showed a higher correlation with stress than the number received, suggesting that for these Types, it may be more stressful to send emails than to receive them. More stressed Conservators were particularly likely to feel that they wasted a lot of time dealing with email, and to be distracted by email notifications – and hence

¹² Independent-samples t-test

¹³ Oneway ANOVA

they were particularly likely to turn off these email notifications. As they become more stressed, they are more likely to use the 'delay email delivery' function so that people don't see what time of day they are working, and to worry that they are no longer using email efficiently. Conservers may be more stressed than most by having unread emails in their inbox.

N^e Extraverted iNtuition – the Explorer

Explorers who are expected to check their email at the weekend are more stressed and will often worry about what could be waiting for them at work on Monday. More stressed Explorers are more likely than most to feel that they are not in control of most aspects of their working life. As with many Types, there was a correlation between stress and the extent to which they felt they wasted a lot of time dealing with email.

Nⁱ Introverted iNtuition – the Visionary

For Visionaries, there was a very high correlation between how stressed they were and the extent to which they felt they wasted a lot of time dealing with email; they were also more affected than most by the amount of emails they received. More stressed Visionaries were also likely to agree that it could take them days or even weeks to respond to an email.

T^e Extraverted Thinking – the Director

Stressed Directors feel that they spend a lot of time waiting for replies from others, and that they waste a lot of time dealing with email, but as they become more stressed they may take days or even weeks to respond to an email themselves. They feel less in control of their working life, and are more likely to be distracted by email notifications (although, unlike some other Types, they are no more likely than usual to turn these notifications off). They believe that they are using email less efficiently, they are less likely to read emails where they have just been copied in, and their emails may become more direct and less polite.

Tⁱ Introverted Thinking – the Analyst

For the Analyst group, several factors correlated with how stressed they were. More stressed Analysts were very likely to feel that they waste a lot of time dealing with email, but also very likely to sometimes take an email break or 'holiday' during the working day. They do not feel that they are in control of most aspects of their working life, or that they are using email efficiently; they may send emails to the wrong person, and avoid deleting emails. They become distracted by email notifications, and may turn them off; they feel that they spend a lot of time waiting for replies from others, but may take a long time to reply themselves.

F^e Extraverted Feeling – the Nurturer

Across all the dominant function groups, it is the Nurturers who show the strongest link between using email outside of normal working hours and stress. Those who are expected to check emails during the evening or weekend are significantly more stressed than other Nurturers, as are those who more often check or send emails during the evening, at night or in bed, at the weekend or on holiday. As with other groups, more stressed Nurturers feel that they waste a lot of time dealing with email, and may sometimes take days or even weeks to respond to an email.

Fⁱ Introverted Feeling – the Conscience

This group are particularly likely to be stressed by receiving a large number of emails, and to feel less in control of their working life when they do become stressed. More stressed Consciences feel that they are sent a lot of unnecessary or irrelevant emails, and may sometimes take days or even weeks to respond to an email.

Conclusions and guidelines for using email

Guidelines for using email

Introduction

Email is a large part of many people's working lives; in our survey, 84% agreed or strongly agreed with the statement "I could not do my job without using email". The survey also showed that there are many things that can be annoying, irritating or stressful about email, and other research (Reinke & Chamorro-Premuzic, 2014) has shown that email-related stress can lead to a lack of work engagement and to burnout. We have drawn on the results of the survey to produce a set of guidelines and tips to help individuals and organisations make the most of email and avoid email-related stress.

Training programmes and 'how to' guides often suggest that there is only one right way to carry out an activity. For example, time management training tends to take one structured approach, which in practice tends to work well for those with an SJ preference, but less well for those with an NP approach, who may need to adopt different methods. Similarly, there have been many attempts to write 'rules' for dealing with email, suggesting for example that you should always use subfolders or that subfolders are too complicated; that you should ignore email notifications and only check emails at set times, or that you should always check emails immediately so that you don't worry about them; that you should respond to emails immediately, or only respond when you have thought through your answers. A judgemental view of different email strategies can also be found in the academic literature (Shirren & Phillips, 2011). In reality, many of these rules may work best for people with a similar personality to that of the author of those rules. In reading the guidelines below, therefore, please treat these as suggestions rather than as rules, but do remember that they are based directly on the outcomes of the research.

General guidelines for individuals

- People vary in how quickly they need a reply, but most agree that they would expect a reply to their emails within a week or less; try to keep to this timeframe as an absolute limit.
- Many people are annoyed when an email has no subject line, or does not have a clear point. Ensure that your emails have a subject line and that it is obvious, in the first sentence or so, what the email is about and why you are sending it.
- Most people like clear, concise emails and may be irritated by long, wordy emails. Take a moment to check that your emails are clear, short, and worded correctly. Participants in our survey identified misinterpretation as one of the worst things about email, and clear communication as one of the best.
- Think carefully about how you reply to or forward a long email chain. Many people can be irritated when they are expected to read through the chain to get to the relevant information. If you need to keep the chain intact (for example to avoid creating multiple different versions of the chain going to different people), signpost the points that particular individual recipients need to address.
- Our research suggests that most people will read an email even when they have only been copied in, but that as they become stressed, they are more likely to ignore such emails. Think about who to put in the 'to' line, and who to put in 'cc'.
- Try to be polite. Other research (Bolkan & Holmgren, 2012) suggests that if you do, your recipients will feel more positively about you and see you as more competent.
- The more emails you send, the more you will receive; the more emails you receive, the more likely it is that email overload will lead to stress. Think about whether the email you are about to send is really necessary. Two factors that will cause other people stress are email overload in general, and specifically being sent emails that they consider irrelevant or unnecessary. When you do need to communicate, consider whether a phone call or face to face conversation might be better. Many of your recipients (especially Extraverts) might prefer this. Other ways of communicating (for example, instant messaging) may be useful.
- If you can, avoid checking and sending work-related emails on holiday, at the weekend, late at night or in the evening, or before breakfast or going to work. Depending on your job, and your organisational culture, this might be difficult, but try to have at least some time email-free. Remember that even if you check emails, you don't always necessarily have to reply to or send emails outside of your normal working hours.
- Think about your audience. Remember that, given your particular MBTI Type, you will have a particular approach to email communication and that this may or may not match the needs of your audience. Use the suggestions in the next section to help with this.

Guidelines for each dominant function

Dominant Extraverted Sensing – the Activist (ESTP, ESFP)

Advice for Activists	Advice for others
<ul style="list-style-type: none"> Remember that not everyone wants to meet face to face or even talk on the phone; email has a legitimate role to play. For some, especially Introverts, email can ensure the message is delivered correctly. Do make sure that you have actually sent any emails that you started. It may be painful to read through a long email, but remember that it might contain some useful information. Even when you are not in the 'to' line, you may have been copied into an email for a good reason; it may not be a good idea to ignore such emails entirely. 	<ul style="list-style-type: none"> Activists will usually appreciate a face to face or telephone conversation. On any given occasion, consider whether an email is the best way to communicate. Don't expect them to check their emails at the weekend. If you want them to read your email, keep it short and put their addresses in the 'to' line, don't just copy them in. Try to get back to them quickly.

Dominant Introverted Sensing – the Conserver (ISTJ, ISFJ)

Advice for Conservers	Advice for others
<ul style="list-style-type: none"> You may find it difficult to concentrate on your work when you know that you have unread emails in your inbox. Consider strategies to overcome this – for example, periodically turning off email notifications, or applying email rules. If you get no response to an important email, do follow up. Not everyone checks email as vigilantly as you are likely to. Avoid being dismissive of how others use email even if they seem disorganised. Email is not always the best communication method; if urgent you can speak to a person directly. Email can be a way to avoid a showdown – but sometimes it may be important to have a debate openly. 	<ul style="list-style-type: none"> Try not to bombard Conservers with emails; having too many emails is one of the things they most dislike. They typically find it difficult to ignore notifications, and they dislike having unread emails in their inbox, so they will get round to reading your email. If they don't respond, or say they haven't read your email, it may be a sign that they are becoming stressed. If you have something that is urgent and requires a quick response, use the 'urgent' symbol – or pick up the phone and talk to them. Don't expect them to check their emails at the weekend, or before they go to work.

Dominant Extraverted iNtuition – the Explorer (ENTP, ENFP)

Advice for Explorers	Advice for others
<ul style="list-style-type: none"> Remember that not everyone wants to meet face to face or even talk on the phone; email does have a legitimate role to play. For some, especially Introverts, email can ensure that the message is delivered correctly. Don't feel that you have to create subfolders to organise your email; you may find you set them up but then don't use them. You may not always respond quickly to emails. Remember that some people, and some situations, may require a quicker response. Having control over some areas of your working life will make it less likely that you become stressed by email. 	<ul style="list-style-type: none"> Explorers will usually appreciate a face to face or telephone conversation. On any given occasion, consider whether an email is the best way to communicate. Make it clear if you need a quick answer, and why you need it; Explorers will not always respond quickly to emails. If possible, avoid putting Explorers in a situation where they are obliged to check their emails at the weekend; they may find this stressful.

Dominant Introverted iNtuition – the Visionary (INTJ, INFJ)

Advice for Visionaries	Advice for others
<ul style="list-style-type: none"> Visionaries often like to compose their thoughts, and you may sometimes take a while to respond to emails. Remember that many people will appreciate a quick response, especially to important or urgent emails. Consider sending a holding email if you need more time. Remember that in many situations, face to face contact or even a telephone conversation may be preferable to email. 	<ul style="list-style-type: none"> Visionaries are more stressed than most by the amount of emails they receive. Try to avoid bombarding them with emails. Visionaries like to think through their responses and may react negatively if pressed for an immediate answer. However, this doesn't mean that they won't appreciate a speedy answer themselves. Visionaries are generally unlikely to send an email to the wrong person – so that email probably is for you! Don't skim or ignore an email from a Visionary; they have probably worked hard to get the wording right.

Dominant Extraverted Thinking – the Director (ESTJ, ENTJ)

Advice for Directors	Advice for others
<ul style="list-style-type: none"> You may be irritated when others leave out the subject line, or don't come to the point, so consider how you can tactfully help people to improve on this. Avoid criticising how others use their email, or telling them how to organise email folders. Your approach may not work for them. You probably appreciate, maybe even expect, a quick response to your emails. Be aware that if someone takes time to respond, especially a Visionary, it may be that they are thinking through their answer. Be aware that when you become stressed, you may take much longer than usual to respond, and that your emails are likely to become more direct and less polite. 	<ul style="list-style-type: none"> Ensure that your emails have a subject line and are clear, concise and to the point. Directors will appreciate and often expect a quick reply to their emails. If a Director sends you an email at the weekend, or before they leave for work, it doesn't necessarily mean that it is urgent, or more important than their other emails. Be aware that Directors are particularly likely to use email as an 'audit trail' to track who said what on a project.

Dominant Introverted Thinking – the Analyst (ISTP, INTP)

Advice for Analysts	Advice for others
<ul style="list-style-type: none"> You may not always respond quickly to emails unless the subject is of particular interest. Remember that some people, and some situations, may require a quicker response. Email can be a way to avoid a showdown – but sometimes it may be important to have a debate openly, and others (especially Activists and Directors) may then seek a confrontation on their terms. Email is not always the best communication method. Having control over some areas of your working life will make it less likely that you become stressed by email. 	<ul style="list-style-type: none"> Make it clear if you need a quick answer, and why you need it. Analysts will not always respond quickly to emails and they find it easier than most to ignore email notifications or unread emails. Emails to Analysts don't necessarily have to be concise, but they should have a clear point to them. Don't skim or ignore an email from an Analyst; they have probably worked hard to get the wording right.

Dominant Extraverted Feeling – the Nurturer (ESFJ, ENFJ)

Advice for Nurturers	Advice for others
<ul style="list-style-type: none"> • It may be jarring when people omit the pleasantries from an email, but it doesn't mean they are intending to offend you. • You may be irritated when people leave out the subject line, don't include the right people, or confuse who should be in the 'to' line and who in 'cc'; consider how you can tactfully help others to improve on this. • You probably respond to emails quite quickly; for important emails, it may be useful to take a moment to check the content and who you are sending it to. Think carefully about who/how many people you copy in. • Remember that not everyone wants to meet face to face or even talk on the phone; email does have a legitimate role to play. 	<ul style="list-style-type: none"> • Ensure that your emails have a subject line and include the relevant people. • Include pleasantries, like the recipient's name, a greeting and a sign-off. Don't be afraid to use emoticons. • Try to respond quickly to an email from a Nurturer, or at least acknowledge it. • Try not to bombard Nurturers with emails. They may find ignoring notifications hard, and dislike having unread emails in their inbox. If they don't respond, or haven't read your email, they may be becoming stressed. • If possible, avoid putting a Nurturer in a situation where they are obliged to check and respond to emails outside of normal working hours. Some may welcome the chance to connect, but others may find this stressful.

Dominant Introverted Feeling – the Conscience (ISFP, INFP)

Advice for Consciences	Advice for others
<ul style="list-style-type: none"> • You may not always respond quickly to emails. Remember that some people, and some situations, may require a quicker response. • Remember to put a subject line in your emails; many people will find an email without a subject irritating, and may not read it. • Remember that many people will not read your emails properly if they are not clear and concise. 	<ul style="list-style-type: none"> • Include pleasantries, like the recipient's name, a greeting and a sign-off. • Be aware that they may take a while to respond to your emails. Politely make it clear if you need a quick answer, why you need it, and how much you would appreciate it.

Guidelines for organisations

- Do not rigidly enforce a one-size-fits-all solution. Individuals with different Type preferences may take very different approaches to how they organise email. For example, some will create subfolders but others will keep everything in the inbox and then use search functions to find information. Neither of these is the 'right' or 'wrong' way to use email; in playing to each individual's preferences, the different approaches are likely to help each person use email in a way that works for them. Therefore organisations may wish to avoid laying down hard and fast rules for how people organise their own email (of course, guidelines about how people use email with each other – 'netiquette' – are a different matter (Turnage, 2007)). If there are external reasons for specifying the way in which people organise their email, for example for storage or security reasons, this should be explained clearly.
- Avoid email overload. In our survey, some of the worst things about email included junk emails, receiving unnecessary emails, receiving too many emails, and email simply being overwhelming; the amount of emails received was a good predictor of how stressed people were. Encourage people only to use email when appropriate, and to get together face to face or to use the telephone if this suits the situation better. Discourage emails to all staff unless really necessary. Consider other communication solutions, such as instant messaging.
- Review the organisation's expectations about the use of email on holiday, at the weekend, in the evening, at night or first thing in the morning. Remembering that these expectations may be both explicit and implicit, and that the latter may be harder for people to deal with. Although most people agreed with the statement 'people shouldn't have to check their emails outside of normal working hours', many (though not most) said that their organisation or clients expect them to check their emails in the evenings or at weekends. Those people who did send or check emails outside of typical working hours were more stressed.
- Attend to the welfare of virtual teams. Members of virtual teams feel that they waste more time dealing with email and that they use email less efficiently.
- Be aware that email, and especially the amount of email, can contribute to stress, but that paying attention to other sources of stress can help to alleviate these effects. Be aware that senior and middle managers may be particularly prone to email-related stress.
- Make people aware that not everyone communicates with others in the same way that they themselves do, and that considering the needs of their audience may make their emails more effective.

Summary and conclusions

The purpose of the survey

Many alternatives to email now exist; instant messaging, video conferencing, Skype, messaging applications like Slack or Whatsapp, and of course good old fashioned phone calls and face to face meetings. Yet email is still relevant; in our survey, 84% of the group agreed or strongly agreed that they could not do their job without email. Given the importance of email, it is not surprising that email can lead to stress; in our survey, 9% agreed or strongly agreed that dealing with email is stressful for them, and 39% sometimes find email overwhelming. In this context, an understanding of personality Type differences in the way in which we use email may be able to help us to communicate better and reduce email-related stress.

Overall email use and attitudes

- Most people received more work emails (averaging 25–50 emails a day) than they sent (11–25 emails). This imbalance occurs because we will often send emails to more than one person, but not all recipients will reply to every email. The average number of emails sent and received by respondents in the survey was in fact relatively low compared with international norms (Radicati Group, 2015), which suggest that around 90 received emails and 30 sent emails is more common. Nevertheless, a significant minority (16%) of the group received a large number of emails.
- Desktop or laptop computers are the devices that most people both preferred to use and actually did use. Those who preferred to use a smartphone were significantly younger than those who prefer to use other devices. This is in line with other research (Ofcom, 2015).
- There were a number of views on email held in common across the group:
 - Most respondents agreed that it was important to get things right, agreeing with statements like “It is important to take the time to get the wording of an email right” and “The work-related emails I write are always polite”, and disagreeing with “I have been known to send an email to the wrong person”.
 - A second theme related to promptness and clarity, with most respondents agreeing that they expected reasonably prompt replies, and that it was annoying or irritating when the subject line was missing, or when they had to read through a long chain, or when emails did not have a clear point or were long and wordy. Avoiding these pitfalls should help improve communication.
 - The most commonly identified best things about email included: being able to use it with anyone, anytime, anywhere; speed; and providing an audit trail. The first two of these features, while valued by our sample, may lead to what has been called the ‘autonomy paradox’ (Mazmanian, Orilikowski, & Yates, 2013) where email and especially mobile email give individuals control over their interactions in the short term, while at the same time

making it seem as if they were always available. This inability to switch off may lead to stress, as described below.

- The most commonly identified worst things about email included: junk emails; ease of misinterpretation of email; and the use of email instead of face to face communication.
- Most respondents checked and sent emails outside of normal working hours, on holiday, at the weekend, or in the evening. They were somewhat less likely to access email in the morning, and least likely to do so late at night or in bed. However, even here, less than half never checked their emails at these times. In this context, it is notable that most people agree with the statement “People shouldn’t have to check their emails outside of normal working hours”, and that those who more often checked or sent emails at these times were more likely to be stressed.

MBTI Type differences in email use and attitude

- Compared with Introverts, Extraverts are more likely to feel email is overused (when face to face or telephone contact could be used instead), and to have sent an email to the wrong person. They are less likely to use email to avoid face to face confrontation or debate. On average, Extraverts both send and receive more emails than do Introverts.
- Those with a Sensing preference are likely to be more structured in their use of email, feel they use email efficiently, and to be keener that emails are clear and concise. iNtuition Types are less structured and more casual in their use of email. iNtuition Types are more likely to check and send emails outside of normal working hours than those with a Sensing preference.
- Those with a Thinking preference particularly value efficiency, getting to the point, and speed of response. These are also valued, though less highly, by those with a Feeling preference. The latter group are, however, more likely to be offended if emails omit pleasantries.
- Most people expect a fairly quick response, but those with a Judging preference are more irritated when they do not receive this, are less likely to take a long time to respond themselves, and more likely to spend time waiting for emails from others. They find it more difficult to ignore notifications and are less able to concentrate on their work when they have unread emails. Those with a Perceiving preference are less structured in their use of email, often not using subfolders or else setting them up but then not using them. They are relatively relaxed about having unread emails. These results are in line with previous research (Ludford & Terveen, 2003).
- A number of differences were also found between different functional pairs, and especially between people of each dominant function. These are described in detail in the body of the report. Along with the information on how each dominant function may react to email-related stress, this has been used to produce email guidelines for each Type.

Other group differences

- Men were significantly more likely than women to check personal emails at work. This is consistent with previous research (Vitak, Crouse, & LaRose, 2011), which has shown that men are more likely than women to demonstrate what have sometimes been called ‘cyberslacking’ behaviours at work, and may be particularly relevant to organisations with strict email policies.
- Compared with individuals in traditional physical teams and those not in a team, members of virtual teams felt that they wasted more time dealing with email and that they used email less efficiently.
- People working in larger organisations are more likely to believe that people shouldn’t have to check email outside of working hours, and less likely to be expected to check them. They are less likely to take an email break and more likely to find their working life currently stressful.
- A number of differences were found between individuals of different occupational levels. For example, managers and especially senior managers were more likely to agree that they were sent too many irrelevant emails, waste too much time on email, find email overwhelming and stressful, and have to deal with email outside of normal working hours. Managers on average sent and received significantly more emails than did others, and reported more email stress.

Stress and email

- Individuals who were more subject to email-related stress were more likely than others to work in a large organisation, be at senior or middle management level and work in management or HR, send and especially receive more work-related emails, send and check emails outside of normal working hours, and have less control over their working life. They have different attitudes towards, and techniques of using, email. Some of these factors may contribute to stress, while others may be a consequence; however it seems likely that adopting techniques to reduce the total number of emails received and sent, and especially the amount of email that individuals feel they have to deal with outside of normal working hours, should reduce stress.
- There were no significant differences in stress between different preference pairs (E–I, S–N, T–F, J–P), dominant functions, or functional pairs. However, Introverts on average both send and receive less emails than do Extraverts. Amongst those who receive more than 50 emails a day, Introverts are more stressed than Extraverts.
- The email factors that are particularly stressful for people of each dominant function were identified. Along with the more general findings on differences in email use and attitudes between the different functions, this has been used to produce email guidelines for each Type.

Conclusions

Email continues to be an important tool, and for many it is essential. The findings of this research show some of the things that individuals generally find most useful about email, and most annoying, as well as the factors linked to email-related stress. These have been used to produce general guidelines for individuals and organisations. By looking at personality differences, however, it has been possible to go beyond the general and give specific suggestions for each Type. While no particular Type is more stressed by email than any other, different factors will lead to stress in different Types. By paying attention to these factors, we can improve communication and reduce stress.

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Appendices

Appendix 1: Respondent comments

ISFJ	This was a thought provoking exercise. It might make me use email more efficiently. Thank you
INFJ	How fascinating - I'll await the results of this study with interest.
INTJ	I'm on call for a night disaster action team, 6:00p to 6:00a M-F, 24 hrs S-S, every three weeks. I teach Red Cross classes, and do some other things. This is probably not your usual business scenario. I also do type research, measuring all 8 mental processes. Next project: lots of stuff you thought was true about type isn't. I'm interested in your results.
INTJ	Introverted technologists prefer email - ignore voicemail; Extraverted sales types prefer phone and don't read email You should have asked about instant messaging and phone mail as well as face to face
INTJ	As ever, technology used well is a blessing; used unthinkingly, it is a curse
INTJ	An interesting survey; I look forward to seeing the results
INTJ	Will you make the raw data available for research purposes?
INFP	My only comments are that my situation is unusual in that I work on a freelance basis for UK consultants whilst based in Australia. This affects timelines etc. The flexibility suits me. I would be very unhappy in a role in which my home/work balance was disrupted i.e., working 9-5 and being expected to check messages in my own time.
INFP	- I've been using email since 1992 and also worked in IT for 15 years, so may be more adept than some. In a development environment, email was a key way of getting responses without interrupting someone's concentration at a particular moment. - I mentally class my BAPT work as 'work', and it takes far more of my time and emails than my 'real work' as a coach. My coaching is part-time as I'm semi retired. - I have a narrowboat, and am away for weeks at a time, several times a year, and so rather than 'holiday' I see it as an alternative normality, and try to keep in touch while away. Email helps me to do this. If I go to America, I might keep tabs on email but don't spend much time on it. - Although I don't have a lot of coaching work, it is important to me, so I respond to coaching-related emails as promptly as I can. - I have a different relationship to personal email that to emails relating to BAPT work - more casual, less worried about response times. So mostly my answers relate to my relationship with BAPT and coaching emails. - Although I might check my email any day of the week, I don't between (approx) 10pm and 10am, and not if I'm involved in some other task (painting, writing, sewing, entertaining, etc)
INFP	Thank you for running this survey - it will be interesting to look at the results. I somewhat believe that the way you write emails and react to emails is also dependent on cultural differences. Do you plan to organise the survey results along countries as well? Best regards
INFP	Email gives me anxiety.
INTP	I was wondering whether there might be different questions that could be asked and that reflected general principles more than work situations, as type is more aligned to the general principles.
INTP	I think there might have been other things about email in this survey, say whether you write with your dominant auxiliary or inferior function, whether you strategise particular emails, or whether you let your anger or dissatisfaction get the better of you with an email you decide to send. So there were lots of opportunities missed, from a researcher's point of view, anyway.
INTP	I'd be very interested to know if people who prefer 'Introversion' are overwhelming positive about email and those who prefer 'Extraversion' are not.
INTP	For the evening/weekend question, did you mean ""outwith working hours""? Sometimes we will be working on evenings or weekends, and then we definitely would; I got impression that that wasn't the point of that line of questioning.
ESTP	I would like to see the results, when will they post?
ESTP	One other thing from an ESTP - I write the email and then add any pleasantries that may be appropriate!

ESFP	As an SP, it wasn't a great incentive in terms of wording at the start of the email to ensure that I completed the survey. A lot of the questions would have a caveat on - depending on type of client, whether it relates to new proposals going to clients etc and importance/relevance of emails. As someone who is self employed, the boundary of week day/weekend is more blurred as I tend to do a lot of 'weekend' activities throughout the week.
ESFP	My preference score for ""P"" is only 1. My stepII results show 2 ""J"" facets...may explain some of my answers!
ESFP	I like that email is a little more informal than a ""letter"" would be and that you can have a trail to refer back to.
ENFP	Some of the questions implied a common understanding of normal working hours. This has changed enormously over the years and flexes hugely depending on industry. What is normal? I don't believe there is a ""9-5"" any longer. The rise of the smartphone has contributed hugely to that, as we increasingly carry both our professional and personal lives in 1 or more mobile devices.
ENFP	Some questions would benefit from an 'it depends on context' option as to use the neither agree nor disagree option doesn't actually reflect my intention or reveal Possibility of discriminating use eg I will respond to emails at weekend on a project where we have agreed and I will respond to urgent and important emails at night where the client is in a very different time zone to avoid excessive delay
ENFP	Can we have a date when the data will be published?
ENFP	I'm just wondering if you are only sending this to people who are MBTI practitioners whether you have a good spread of all MBTI types or if some are missing or under-represented (by virtue of the fact that that type may not become practitioners or may hate doing surveys) If so, will you seek to redress this balance in some way so as to make the survey more representative. Also, as I have 2 jobs - working for myself and working part-time as an employee I have answered as an employee but my self-employed answers would have been different.
ENTP	I have often answered neither agree or disagree as part of the question rings true but another part of it does not. re leaving in the inbox, not because I believe it is easier to find it there is is just that I am too disorganised and easily distracted before filing in one of my many sub folders , which I never seem to return to anyway!
ENTP	I've answered this from an email perspective. More and more work electronic communication is being carried out using other messaging apps which can be more efficient and effective for short messages or even discussions
ENTP	Very thought provoking, raised my awareness of my own email patterns
ENTP	Would be interested in results by age group, i.e. Boomers v Millennials. Also a comparison with use of texting.
ENTP	Never mind sending emails to the wrong person, what about forgetting to trim off the 'embarrassing' part of the email that's buried in the reply chain.
ENTP	I'd be interested to see the results and any actions that will be taken as a result of the outcome found here.
ESFJ	Please email me a copy of the research, really interested in the findings, <email removed> Thanks
ESFJ	I would like to take part of the result. Please tell me when its published. <email removed>
ENFJ	Although I am retired from paid employment since I do still undertake academic work for my own interest I have answered the work questions with that in mind.
ENFJ	So eager to see the results of this research!
ENFJ	Look forward to the results!
ENTJ	In terms of accessing emails out of my work hours the options didn't quite give me the option I most frequently use - on my journey into work (but after breakfast etc)