



Type and email communication

A research study from
The Myers-Briggs Company

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Executive summary

Email is a part of most people's working lives. However, we all use it in different ways, have different likes and dislikes, and find different aspects of email more or less stressful. This may be due, in part, 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 in 2016. The results are described in detail in this report, but some of the headline findings are as follows:

Email use

- 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 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

- 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 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. They 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.

Other type differences

- A few differences were also found between people of each favorite process, and between different process 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.
- 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 Extraverted Feeling (ESFJ, ENFJ) as their favorite process felt that people not replying to their emails was a particular issue.

Stress and email

- A few factors correlated with being more stressed, including organization 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 a person has over their working life.
- There were no significant differences in stress between different preference pairs (E-I, S-N, T-F, J-P), favorite processes, or functional pairs. However, Introverts on average both send and receive less emails than do Extraverts. And among those who receive more than 50 emails a day, Introverts are more stressed than Extraverts.
- The research identified email factors that are particularly stressful for people of each favorite process.

These findings have been used to produce guidelines to help people of each favorite process to work more effectively with email and 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. 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 can offer straightforward guidance to help individuals make the best use of email, and to help organizations adopt sensible email policies.

Data collection

To do the study, we created an online survey. We asked participants to give their MBTI best-fit (validated) type and some demographic information. They also completed 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 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 publicized to type users via LinkedIn, our website, and direct communication to our workshop participants.

In total, 455 people attempted the survey. However, the analysis is based on data from 368 people who completed the questionnaire.

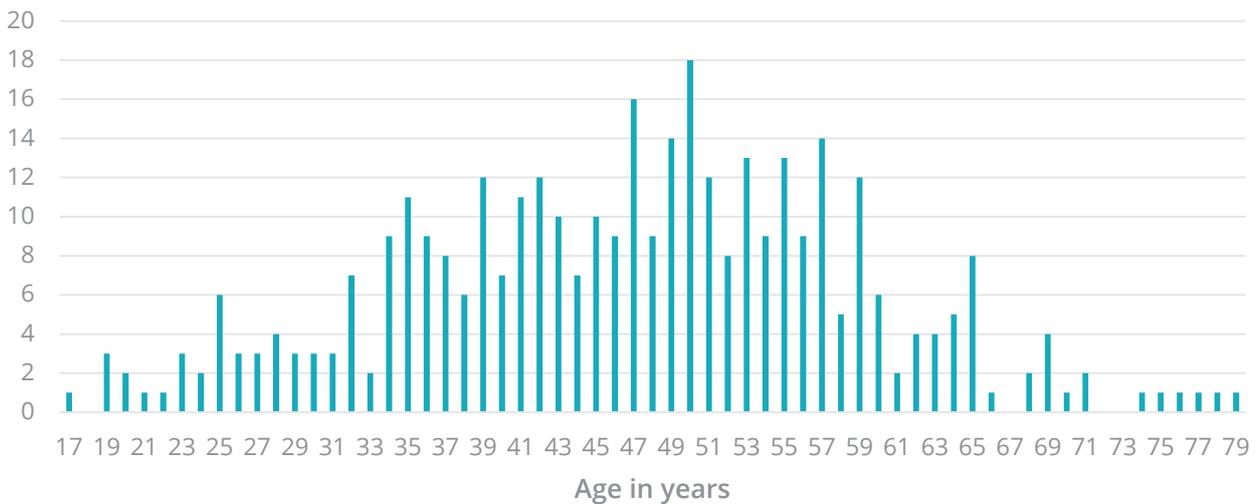
Results

The sample

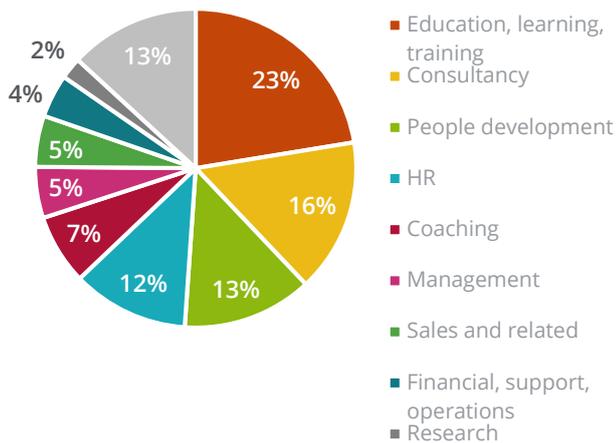
Group demographics

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

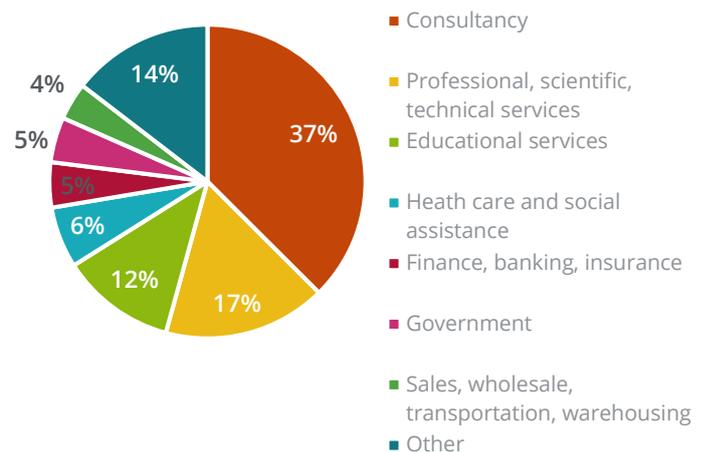
Most of the group had a role in education, consultancy, development, HR or coaching. The majority worked for a consultancy or professional services organisation.



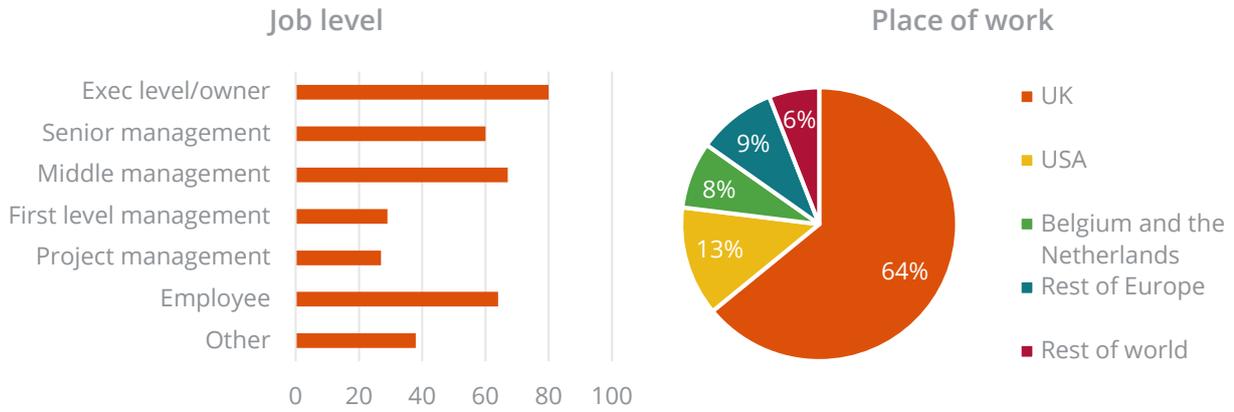
Job type



Industry/organization



Over half of the group (58%) were employed full-time. 26% were self-employed. The job level varied from employee up to executive/owner. The majority worked principally in the UK.



The group's composition reflects the demographics of those likely to be most interested in type and in type research.

Type distribution

Here is a type table for the group:

| 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% |

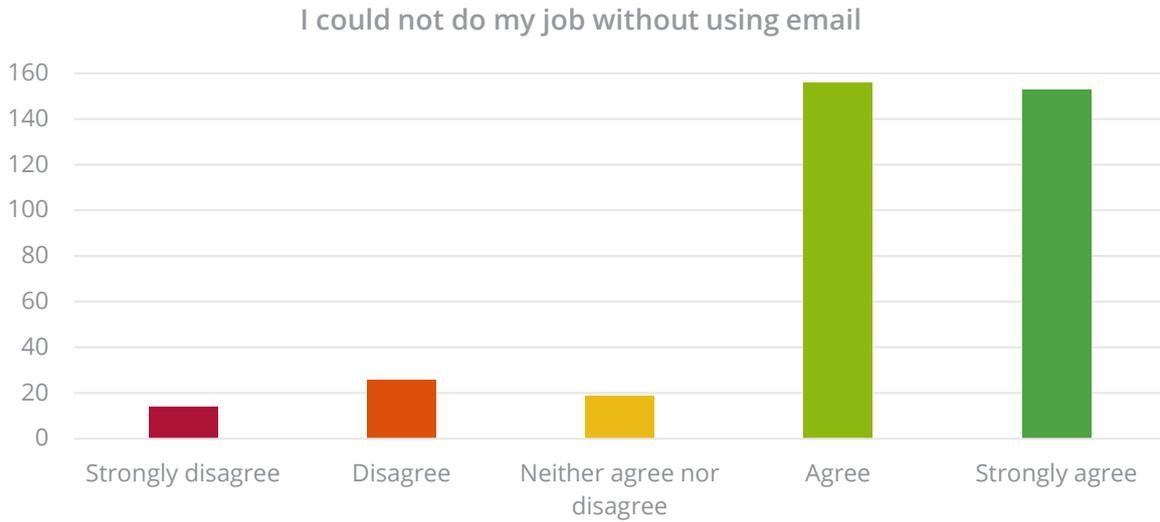
The SSR (Self-Selection Ratio) compares the sample to the general population. Types with an SSR greater than 1 are over-represented in this group compared with the general population. All Intuition types are therefore over-represented; this is not uncommon in a group of people interested in type. However, 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.

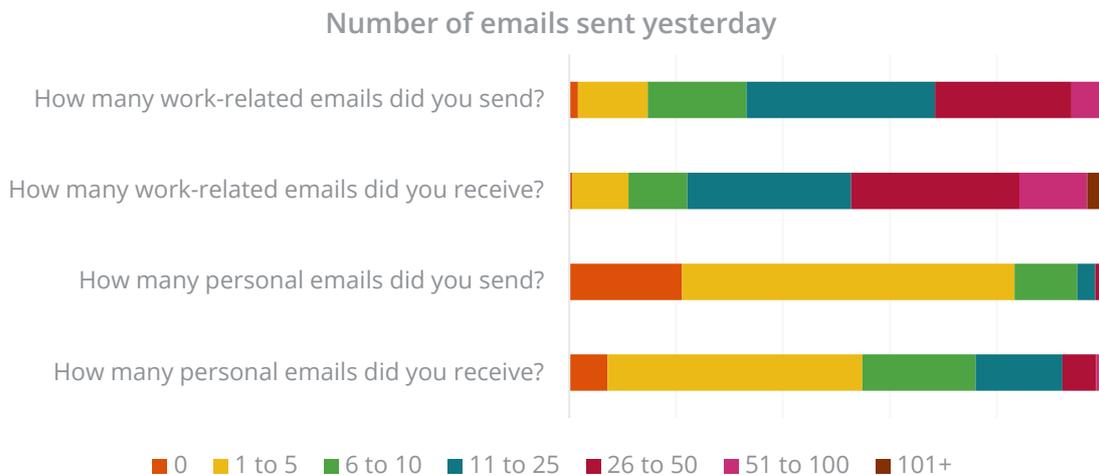
¹ Independent-samples t-test

Number of emails sent and received

Overall findings

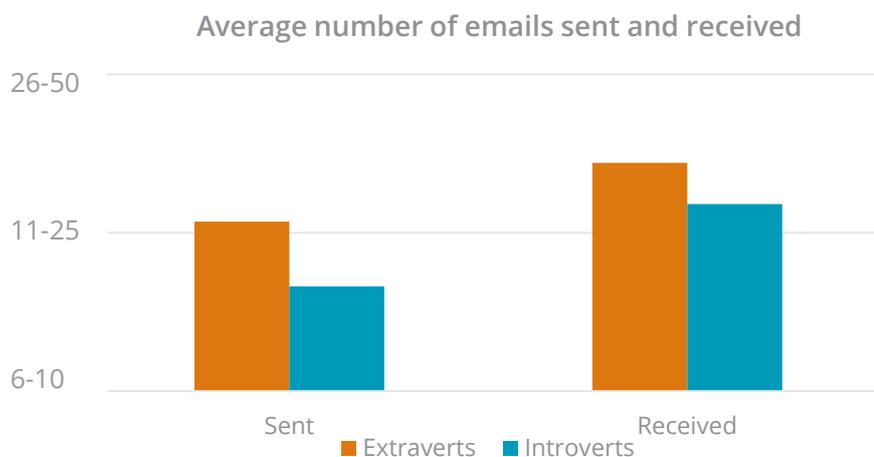
We asked people how many emails they had sent and received on their most recent working day. We found that:

- 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.

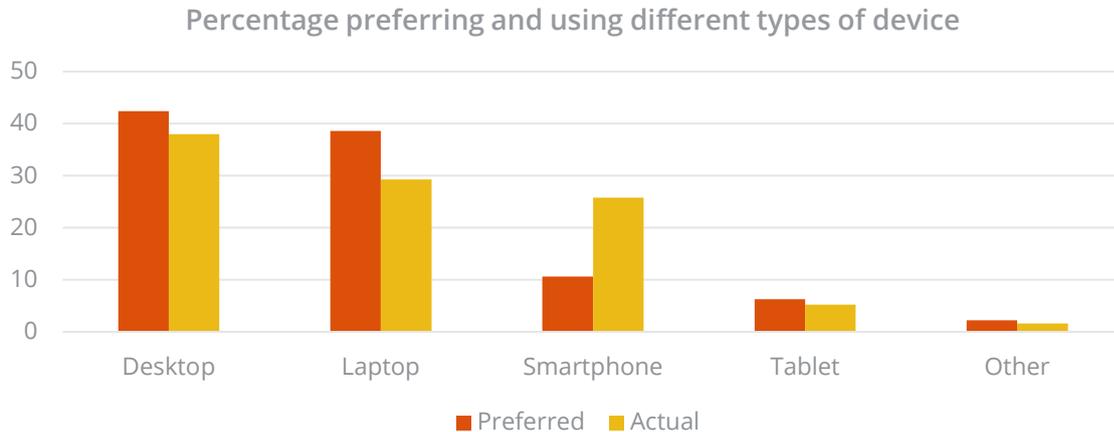


² Independent-samples t-test

Ways of accessing email

Devices used

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



Desktop and laptop computers were both preferred and actually used. Smartphones were 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.

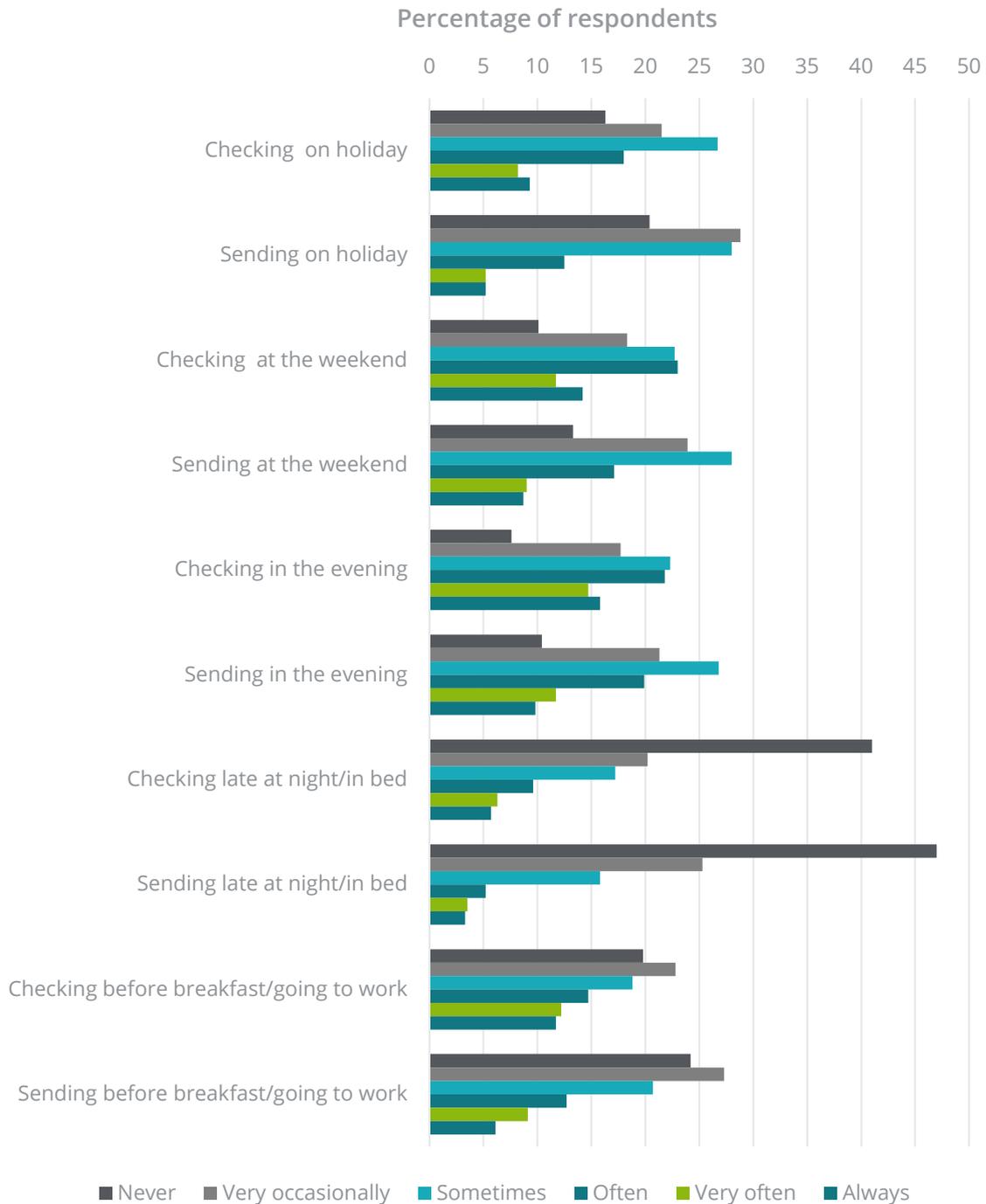
³ Oneway ANOVA.

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 preference pair. 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. They were also more likely to send work emails at the weekend, in the evening, or before going to work.

Looking at favorite processes, Introverted Sensing types – ISTJ and ISFJ – were the least likely to check their email at the weekend, significantly less so than most other groups. Extraverted Thinking types – ESTJ and ENTJ – were significantly more likely to do this than either ISTJ/ISFJ or Extraverted Sensing (ESTP, ESFP) types.

Extraverted Thinking types were also the most likely to check their emails before breakfast or going to work, significantly more so than ISTJ/ISFJ or ESTP/ESFP or Introverted Feeling (ESFJ, ESFJ) types. ISTJ/ISFJ types 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 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. So 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

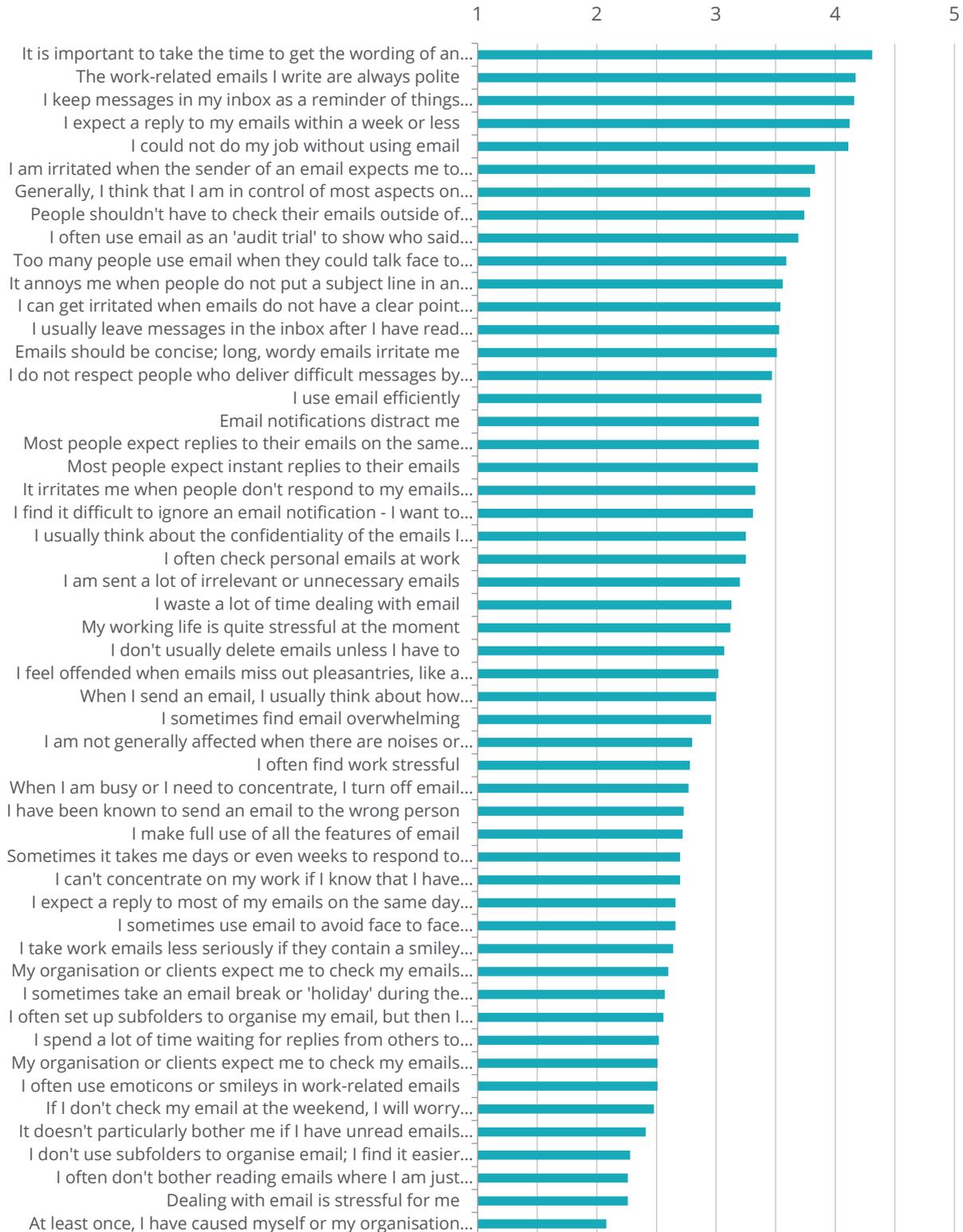
⁷ Independent-samples t-tests

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 full questions are on the next page.



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:

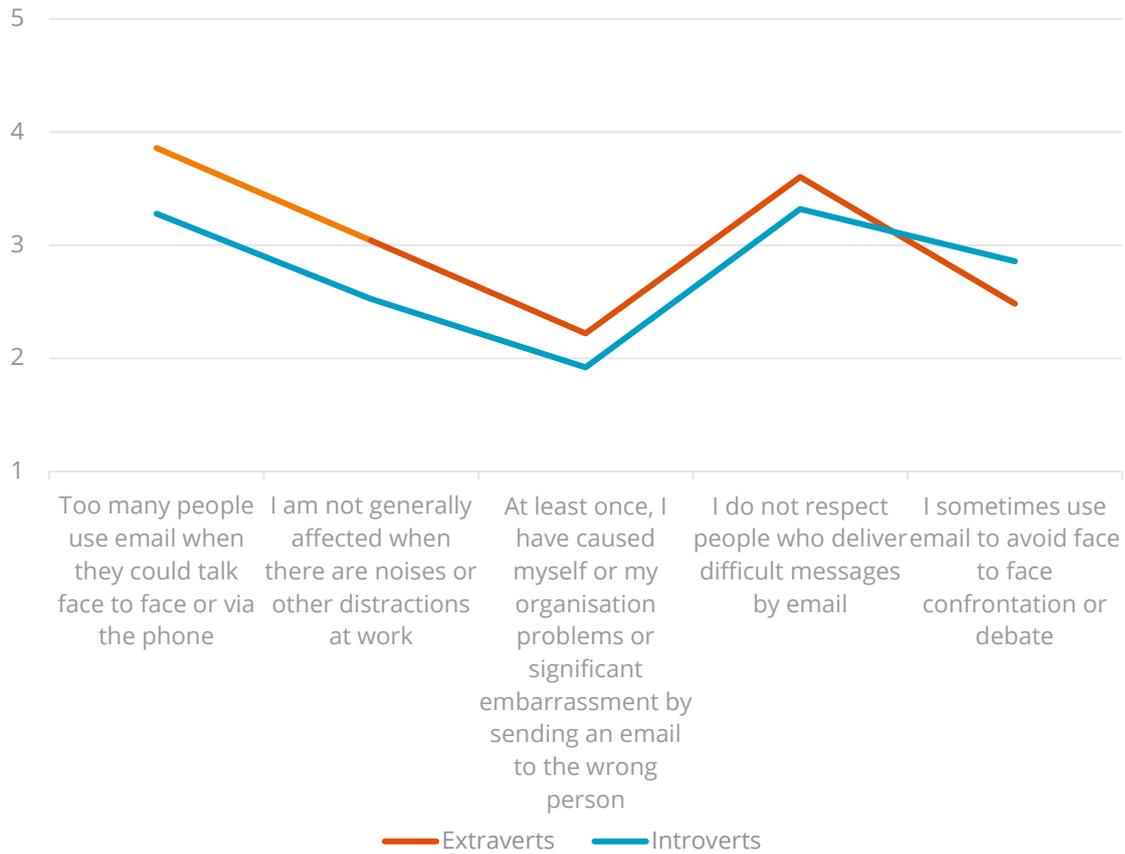
- If I don't check my email at the weekend, I will worry about what could be waiting for me at work on Monday
- It doesn't particularly bother me if I have unread emails in my inbox
- I don't use subfolders to organize email; I find it easier just to search my inbox
- I often don't bother reading emails where I am just copied in
- Dealing with email is stressful for me
- At least once, I have caused myself or my organization 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 organization or clients expect them to check their emails in the evenings or at weekends.

E-I differences

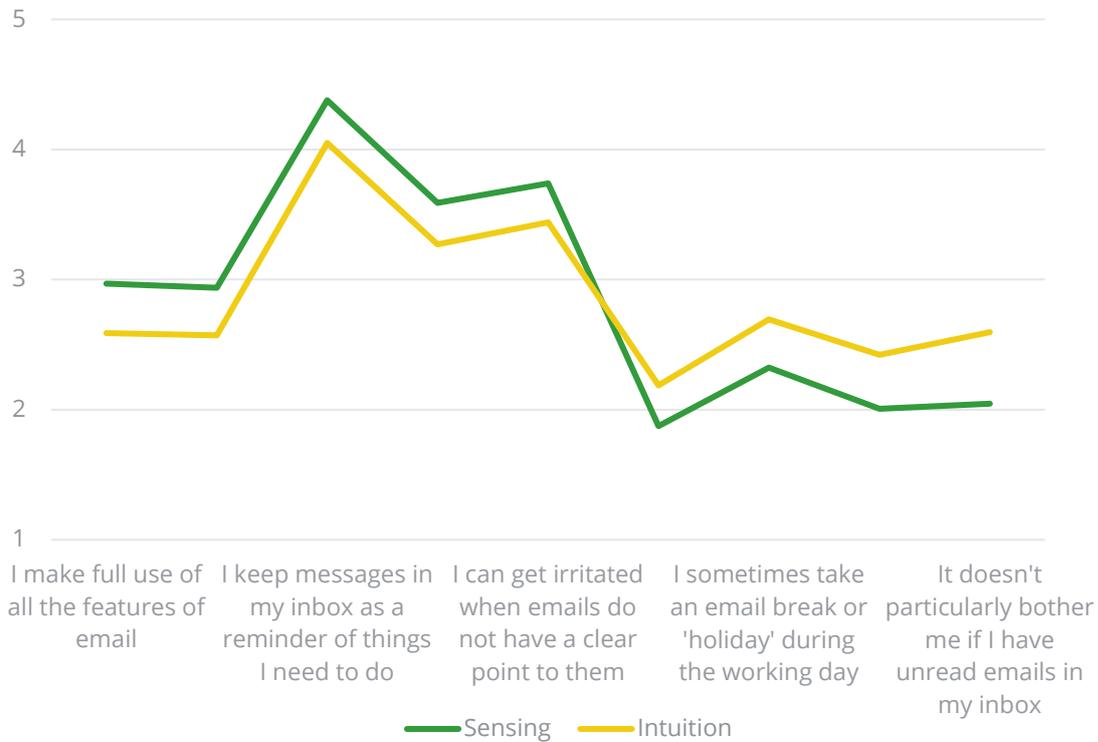
Five questions showed a significant difference in average response between Extraverts and Introverts (based on an independent-samples t-test; 1% sig level).



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

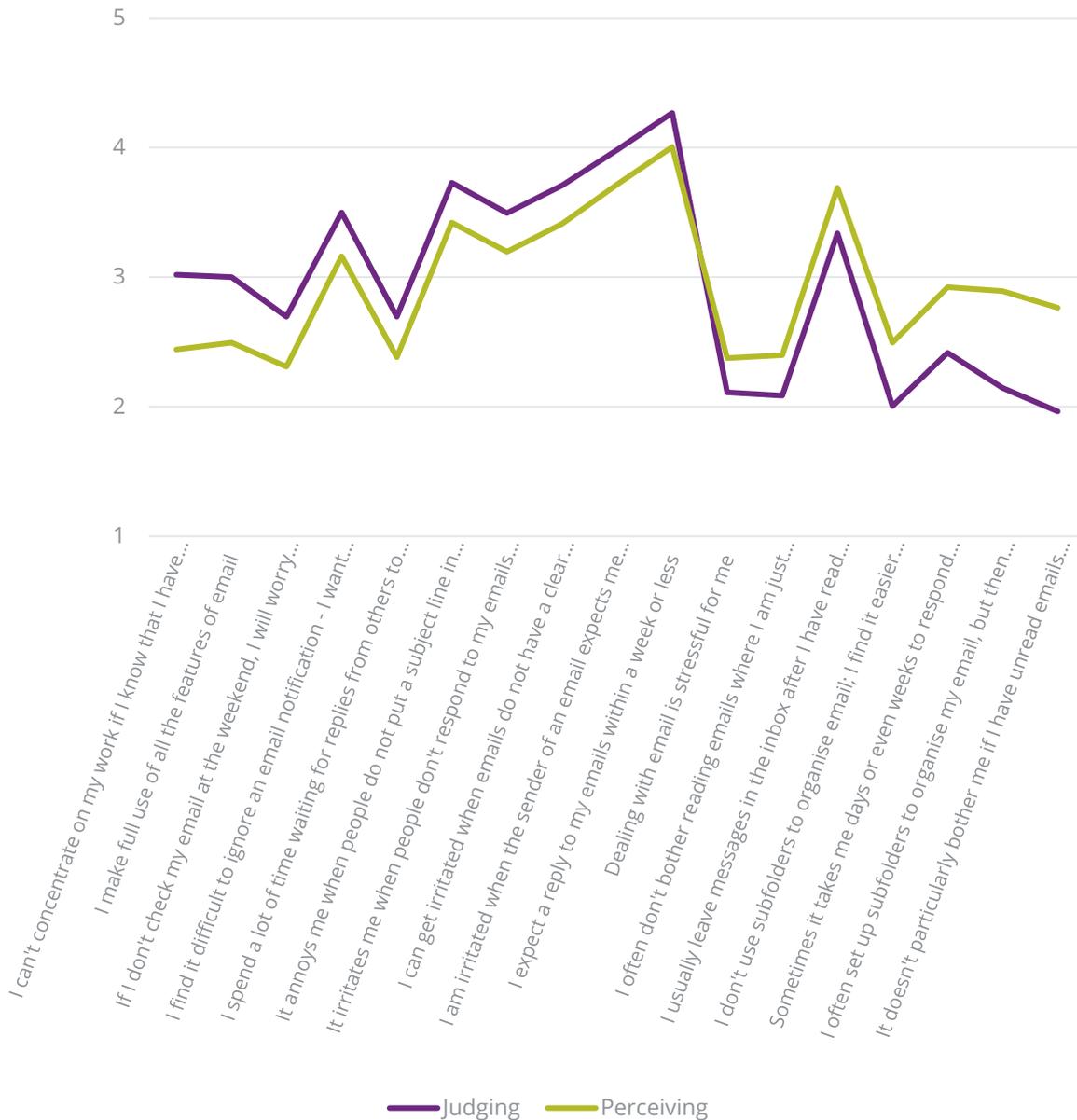
Five questions showed a significant difference in average response between those with a Thinking and those with a Feeling preference (based on an independent-samples t-test; 1% significance level).



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 preference pair, 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. They often do not use subfolders (or they create them but don't use them), and are relatively relaxed about having unread emails.

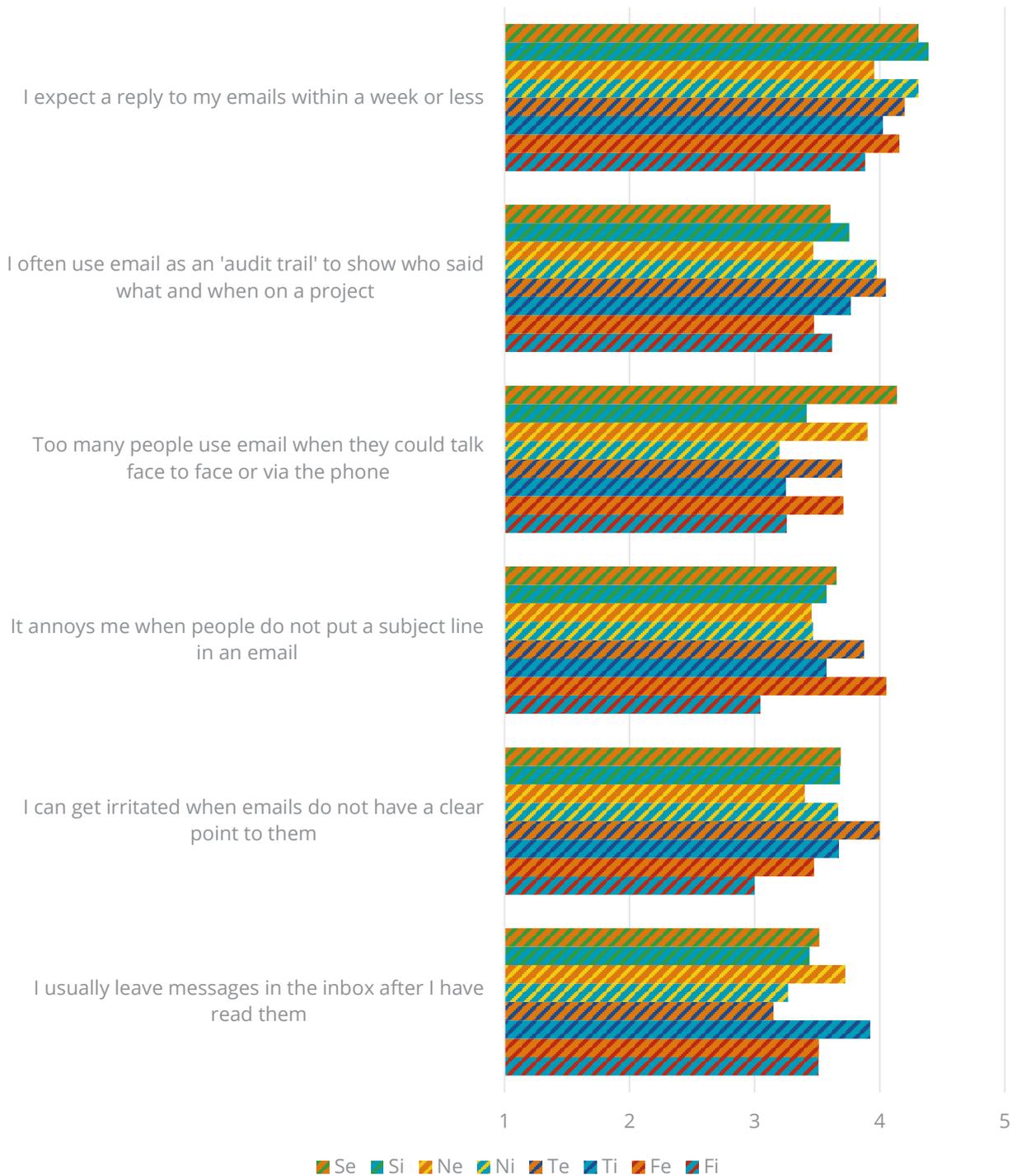
Functional pairs

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. 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.

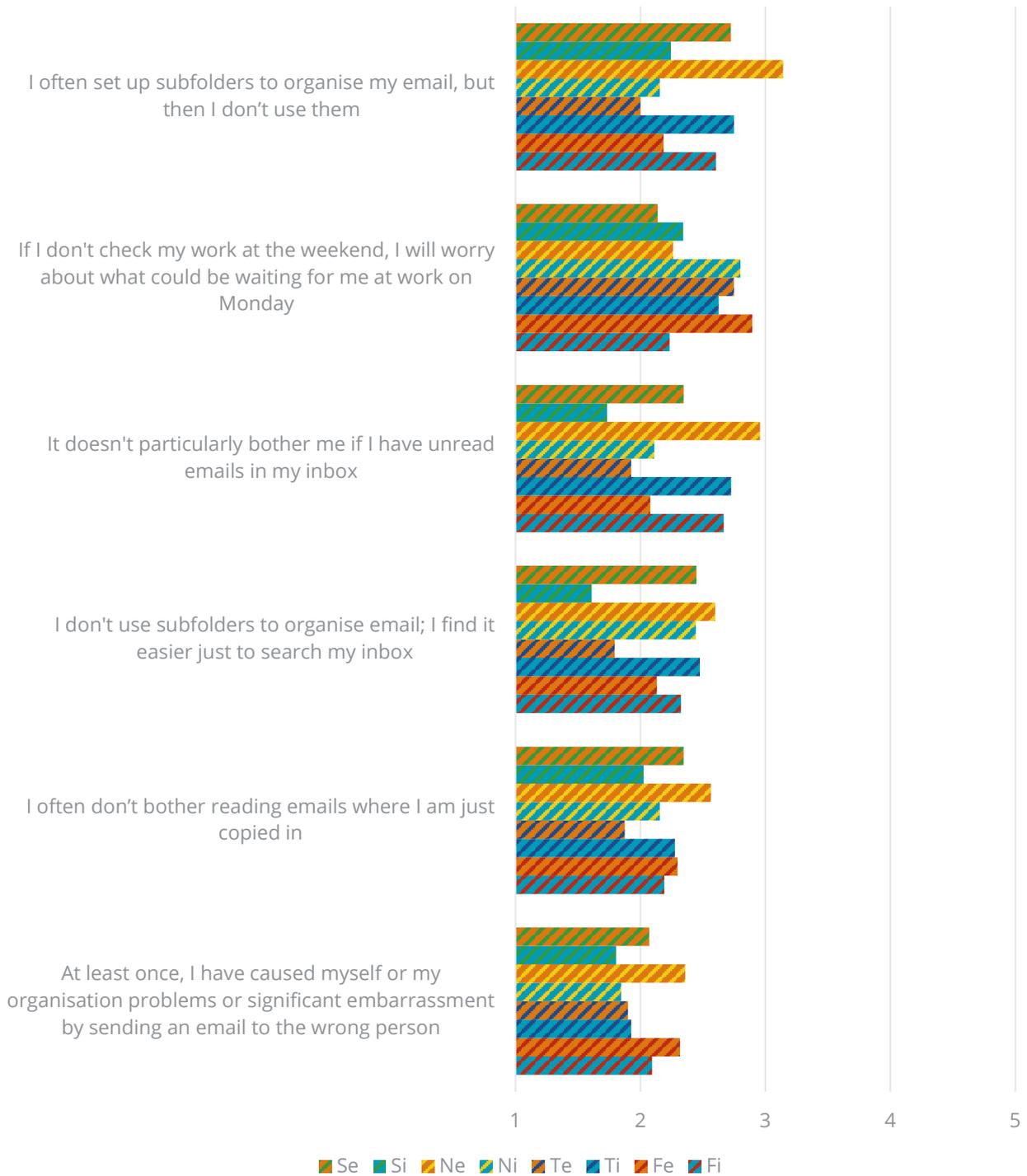


Dominant functions

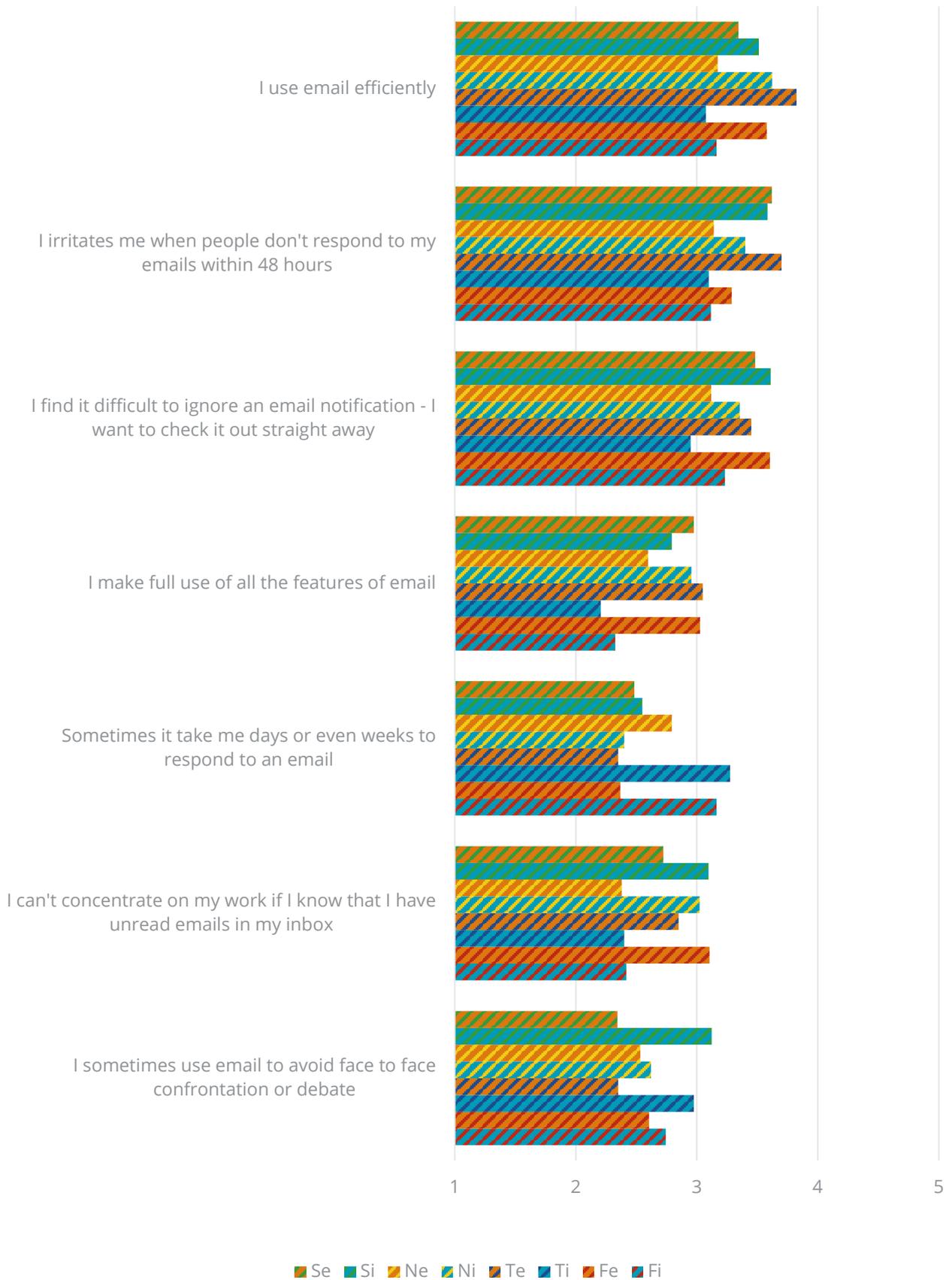


A number of questions were answered in a significantly⁹ different way by people with different favorite processes:

⁹ Oneway ANOVA



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



S^e Extraverted Sensing (ESTP, ESFP)

Extraverted Sensing types 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 among the most likely to expect fairly quick responses to their emails. They are among the least likely to worry if they don't check their emails at the weekend. And, like Extraverted Thinking types, they are the least likely to use email to avoid face to face confrontation or debate.

Sⁱ Introverted Sensing (ISTJ, ISFJ)

Introverted Sensing types 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 organize 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 (ENTP, ENFP)

Extraverted Intuition types 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. When messages have been read, Extraverted Intuition types will often leave them in the inbox. They are the group least likely to use subfolders to organize their email. They are also the group that is most likely to create subfolders but then not use them. They may not bother reading emails where they have just been copied in and, along with Extraverted Feeling types, are the group most likely to cause embarrassment by sending an email to the wrong person.

Nⁱ Introverted Intuition (INTJ, INFJ)

Introverted Intuition types expect reasonably quick responses to their emails and will often use email as an 'audit trail' to show who said what (and 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. They are one of the least likely groups to cause embarrassment by sending an email to the wrong person.

T^e Extraverted Thinking (ESTJ, ENTJ)

Extraverted Thinking types, like Introverted Intuition types above, expect reasonably quick responses to their emails and will often use email as an 'audit trail' to show who said what (and when) about a project. They believe that they use email efficiently. They are one of the most likely groups to use subfolders to organize 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 (ISTP, INTP)

Introverted Thinking types usually leave messages in the inbox after they have read them. They 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 Introverted Feeling group, they might 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 (ESFJ, ENFJ)

Extraverted Feeling types 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 Extraverted Intuition types, 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 (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 Introverted Thinking types, 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 it takes people with different favorite processes to reply to an email, and how quickly they expect replies to their own emails, there is a mismatch.

People whose favorite decision-making (Judging) process is extraverted (ESTJ, ESFJ, ENFJ, ENTJ) tend to reply to emails quickly. But they might not expect as quick a reply to their emails as others might suppose.

People whose favorite decision-making (Judging) process is introverted (ISTP, ISFP, INFP, INTP) can take a long time to reply to emails, but then expect a quick reply. People with other type preferences typically reply about as quickly as they themselves expect to be replied to.

Gender differences

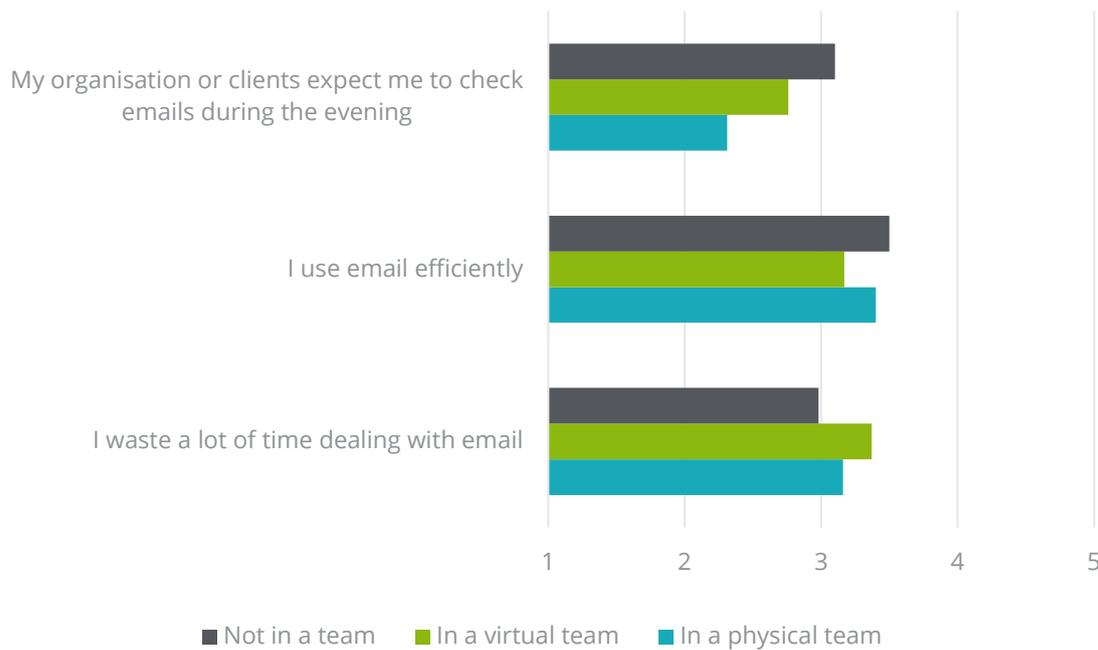
Based on an independent-samples t-test, and a 1% significance level, only one question showed a significant difference between men and women. Men were significantly more likely to check personal emails at work.

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' behaviors at work.

However, 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.

Organization size

Individuals working in larger organizations 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.

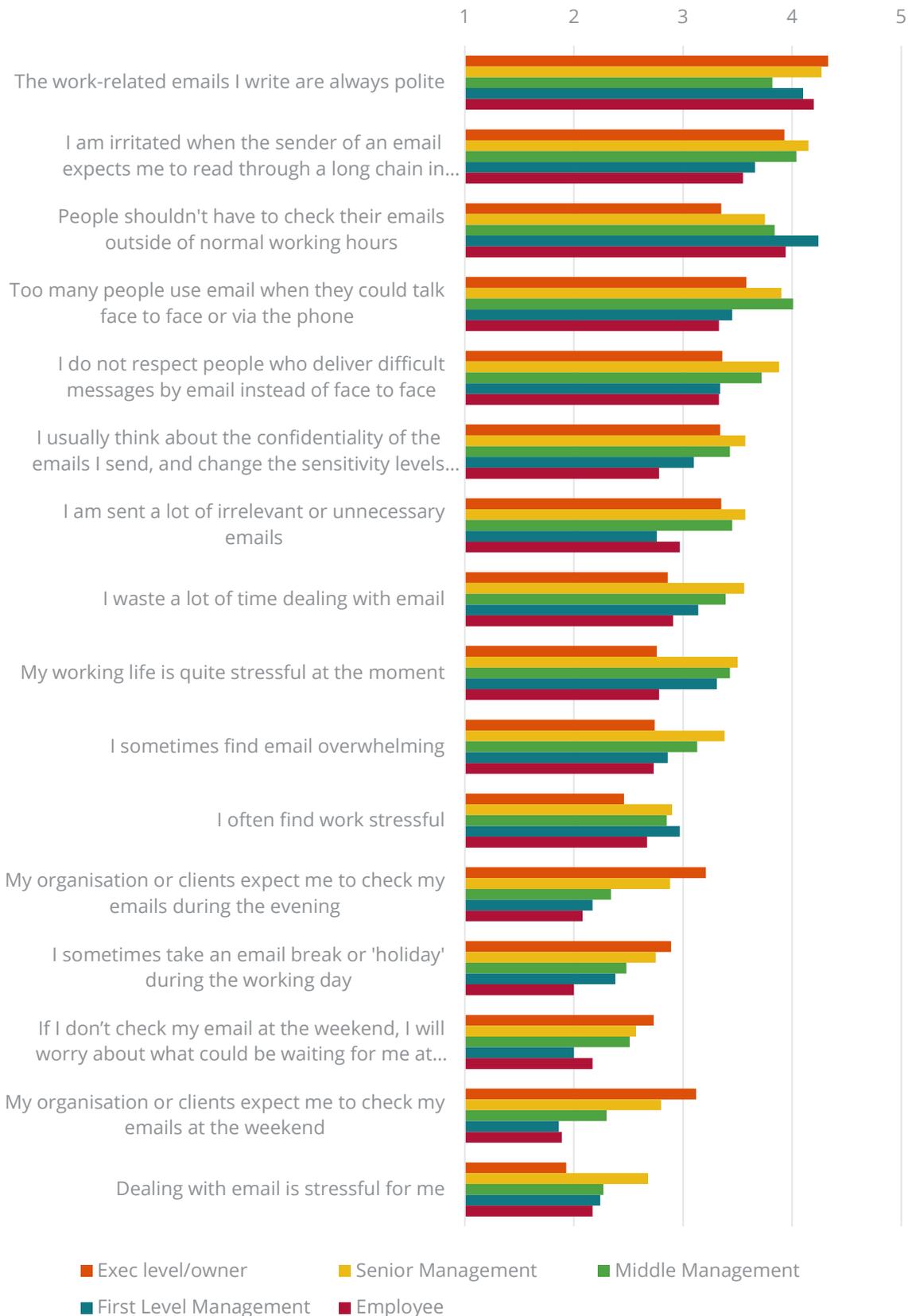


Those who work from home are the least stressed and are more likely to take email breaks. They are also more likely to feel obliged to check emails at the weekend.

Office-based workers are significantly less likely to be expected to check their emails during the evening.

Job level

A few 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 need to read through a long email chain 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 need to read through a long email chain 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 need to read through a long email chain 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.

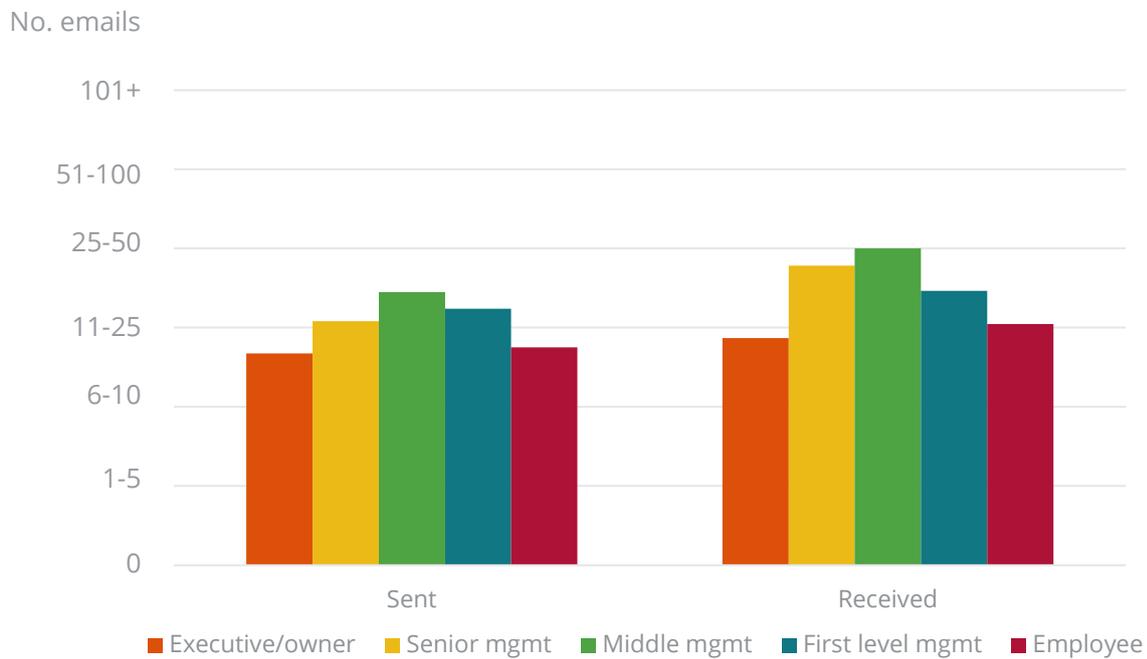
First level managers

- 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

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



¹¹ Oneway ANOVA

Best and worst aspects of using email

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

Best thing about email

The best aspects of email included:

- being able to use it with anyone, anywhere, anytime
- speed
- providing an audit trail.



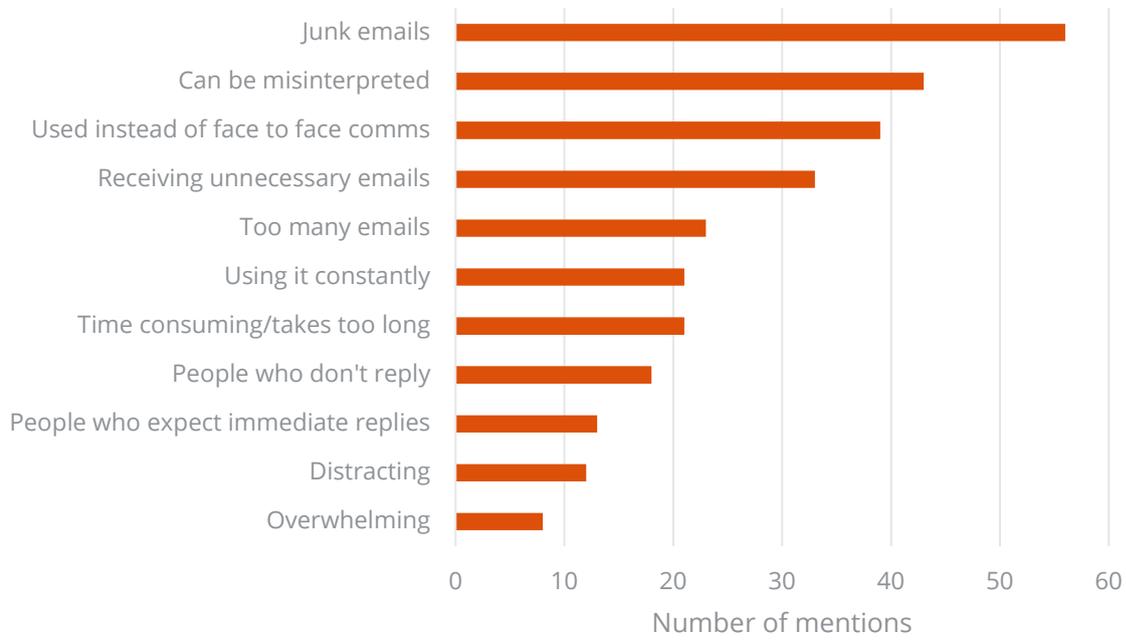
The aspects that particularly appeal to each of the favorite processes are shown below.

| | |
|----------------------|---|
| 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 organization |
| 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
- use of email instead of face-to-face communication.

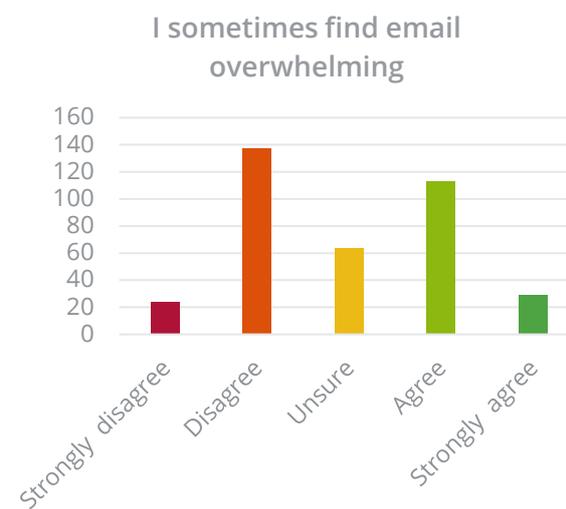
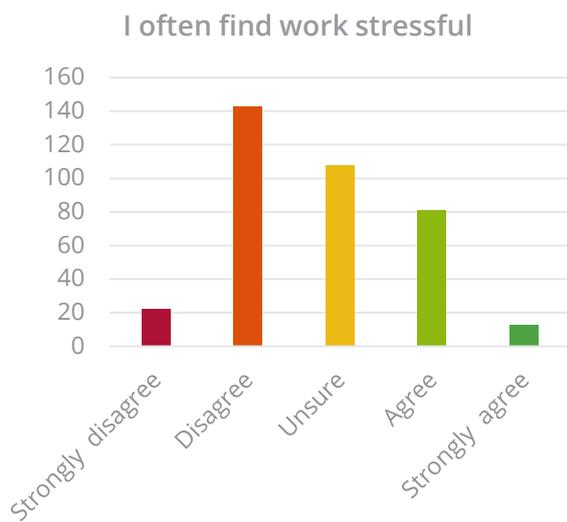
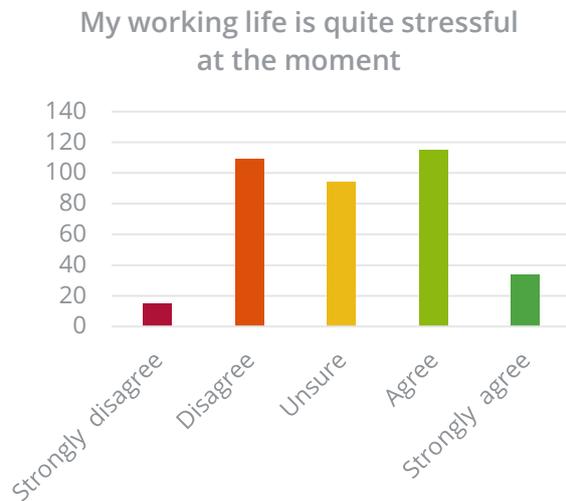
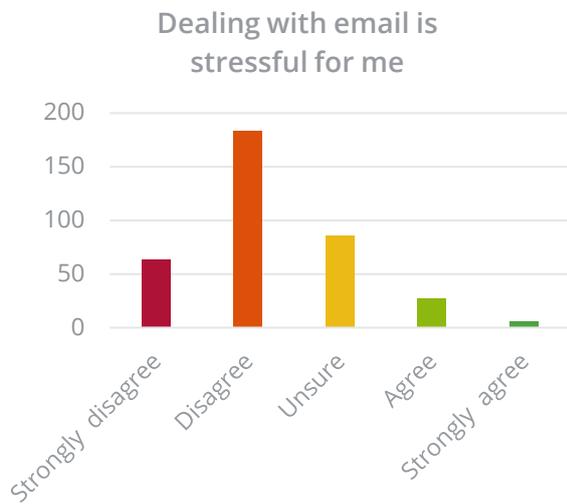


The aspects that each of the favorite processes particularly disliked are shown below.

| | |
|----------------------|--|
| 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), for 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 organization
- 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 takes 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 organization 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 organization 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 support previous research which showed that checking new messages when they 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 which 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 favorite processes or functional pairs. Overall, no single 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 considering the number of emails received.



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).

¹² Independent-samples t-test
¹³ Oneway ANOVA

Stressors for each favorite process

The data for each favorite process was analyzed independently to look for any specific stressors.

S^e Extraverted Sensing

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

Sⁱ Introverted Sensing

Unlike other types, the number of emails sent by Introverted Sensing types showed a higher correlation with stress than the number received. This suggests that for these types, it may be more stressful to send emails than to receive them. Those who were more stressed were particularly likely to feel that they wasted a lot of time dealing with email, and to be distracted by email notifications. So, they were particularly likely to turn off email notifications. As these types 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. They are more likely to worry that they are no longer using email efficiently. They may be more stressed than most types by having unread emails in their inbox.

N^e Extraverted Intuition

Extraverted Intuition types 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. Those who are more stressed 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

For these types 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. Those who were more stressed were also likely to agree that it could take them days or even weeks to respond to an email.

T^e Extraverted Thinking

Extraverted Thinking types who are stressed feel that they spend a lot of time waiting for replies from others. They also feel that they waste a lot of time dealing with email. 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). Under stress 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

For the Introverted Thinking group, several factors correlated with how stressed they were. Those who were more stressed 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

Across all the groups of favorite processes, it is Extraverted Feeling types 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 those who do not. Those who more often check or send emails during the evening, at night or in bed, at the weekend or on holiday are also more stressed than those who do not. As with other groups, those who are more stressed feel that they waste a lot of time dealing with email. They also may sometimes take days or even weeks to respond to an email.

Fⁱ Introverted Feeling

This group are particularly likely to be stressed by receiving a lot of emails, and to feel less in control of their working life when they do become stressed. Introverted feeling types who are more stressed 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 organizations make the most of email and avoid email-related stress.

Training programs 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. In practice, it 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. Or that you should ignore notifications and only check emails at set times, or that you should always check emails immediately so that you don't worry about them. Or that you should respond to emails immediately, or respond only when you have thought about your answers. A judgmental 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 the author of those rules. When reading the guidelines below, therefore, please treat them 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 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 necessary. Two factors that will cause other people stress are i) email overload in general, and ii) 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 organizational 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 MBTI type, you will have a particular approach to email communication which may or may not match the needs of your audience. Use the suggestions in the next section to help with this.

Guidelines for each favorite process

| Extraverted Sensing (ESTP, ESFP) | |
|---|---|
| Advice for ESTP/ESFP | Advice for others |
| <p>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.</p> <p>Do make sure that you have actually sent any emails that you started.</p> <p>It may be painful to read through a long email, but remember that it might contain some useful information.</p> <p>Even when you are not in the 'to' line, you may have been copied into an email for a good reason. It might not be a good idea to ignore such emails entirely.</p> | <p>ESTP and ESFP types will usually appreciate a face to face or telephone conversation. On any given occasion, consider whether an email is the best way to communicate.</p> <p>Don't expect them to check their emails at the weekend.</p> <p>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.</p> <p>Try to get back to them quickly.</p> |

| Introverted Sensing (ISTJ, ISFJ) | |
|--|--|
| Advice for ISTJ/ISFJ | Advice for others |
| <p>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.</p> <p>If you get no response to an important email, do follow up. Not everyone checks email as vigilantly as you are likely to.</p> <p>Avoid being dismissive of how others use email even if they seem disorganized.</p> <p>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.</p> | <p>Try not to bombard ISTJ and ISFJ types 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.</p> <p>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.</p> <p>Don't expect them to check their emails at the weekend, or before they go to work.</p> |

Extraverted Intuition (ENTP, ENFP)

Advice for ENTP/ENFP

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 must create subfolders to organize your email. You may find you create them but then don't use them.

You might 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.

Advice for others

ENTP and ENFP types 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. These types will not always respond quickly to emails.

If possible, avoid putting ENTP/ENFP types in a situation where they are obliged to check their emails at the weekend. They might find this stressful.

Introverted Intuition (INTJ, INFJ)

Advice for INTJ/INFJ

INTJ and INFJ types often like to compose their thoughts, which means you might 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.

Advice for others

INTJ and INFJ types are more stressed than most by the amount of emails they receive. Try to avoid bombarding them with emails.

They like to think about their responses and might react negatively if pressurized for an immediate answer. However, they can 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 their emails. They have probably worked hard to get the wording right.

Extraverted Thinking (ESTJ, ENTJ)

Advice for ESTJ/ENTJ

You may be irritated when others leave out the subject line or don't have a clear point. Consider how you can tactfully help people to improve this.

Avoid criticizing how others use their email or telling them how to organize 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 an INTJ/INFJ type, it may be because 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.

Advice for others

Ensure that your emails to ESTJ/ENTJ types have a subject line and are clear, concise and to the point.

ESTJ/ENTJ types will appreciate and often expect a quick reply to their emails.

If ESTJ or ENTJ 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 these types are particularly likely to use email as an 'audit trail' to track who said what on a project.

Introverted Thinking (ISTP, INTP)

Advice for ISTP/INTP

You may not always respond quickly to emails unless the subject is of particular interest. Remember that some people, and some situations, require a quicker response.

Email can be a way to avoid a confrontation – but sometimes it might be important to have a debate openly. Other types 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.

Advice for others

Make it clear if you need a quick answer, and why you need it. ISTP and INTP types will not always respond quickly to emails. They find it easier than most to ignore email notifications or unread emails.

Emails 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 ISTP/INTP type. They have probably worked hard to get the wording right.

Extraverted Feeling (ESFJ, ENFJ)

Advice for ESFJ/ENFJ

It might feel offensive when people don't include pleasantries in an email, but it doesn't mean they are intending to offend you.

You may be irritated when people don't write a 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 pause 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.

Advice for others

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 an ESFJ or ENFJ type, or at least acknowledge it.

Try not to bombard them with emails. They may find it hard to ignore notifications 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 ESFJ or ENFJ types 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. Others might find it stressful.

Introverted Feeling (ISFP, INFP)

Advice for ISFP/INFP

You might 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.

Advice for others

Include pleasantries, like the recipient's name, a greeting and a sign-off.

Be aware that ISFP and INFP types 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 organizations

- Do not rigidly enforce a one-size-fits-all solution. Individuals with different type preferences may take very different approaches to how they organize 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. The different approaches are likely to help each person use email in a way that works for them. Therefore, organizations might want to avoid strict rules for how people organize 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 organize their email – for storage or security reasons, for example – 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 organization's expectations about the use of email on holiday, at the weekend, in the evening, at night or first thing in the morning. Remember that these expectations may be both explicit and implicit, and that implicit expectations 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 organization 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. 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 phone calls and face-to-face meetings.

And 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, understanding personality type differences in the way in we use email can 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 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 few common views on email across the group:
- Most respondents agreed that it was important to get things right. They agreed 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 disagreed with “I have been known to send an email to the wrong person”.
- A second theme related to promptness and clarity. Most respondents agreed that i) they expected reasonably prompt replies, and ii) it was annoying or irritating when the subject line was missing, or 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: i) being able to use it with anyone, anytime, anywhere, ii) speed, and iii) 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, Orlikowski, & Yates, 2013). This is where email, and especially mobile email, gives 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: i) junk emails, ii) ease of misinterpretation of email, and iii) using 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 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 that email is overused (when face to face or telephone contact could be used instead). They are also more likely 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 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 don’t include pleasantries.
- Most people expect a fairly quick response. 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. They often do not use subfolders or they create them but don’t use them. They are relatively relaxed about having unread emails. These results are in line with previous research (Ludford & Terveen, 2003).
- Differences were also found between different functional pairs, especially between people of each favorite process. These are described in detail in the body of the report. Along with the information on how each favorite process 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' behaviors at work, and may be particularly relevant to organizations 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 organizations 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 others and reported more email stress.

Stress and email

- Individuals who felt more email-related stress were more likely than others to work in a large organization, be at senior or middle management level and work in management or HR. They also 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), favorite processes, or functional pairs. However, Introverts on average both send and receive fewer emails than Extraverts. Among those who receive more than 50 emails a day, Introverts are more stressed than Extraverts.
- The email factors that are particularly stressful for each favorite process 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 and most annoying, as well as the factors linked to email-related stress.

These findings have been used to produce general guidelines for individuals and organizations. 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.

References

- Bolkan, S., & Holmgren, J. L. (2012). "You are such a great teacher and I hate to bother you but...": Instructors' perceptions of students and their use of email messages with varying politeness strategies. *Communication Education*, pp. 253-270.
- Dabbish, L. A., & Kraut, R. E. (2006). Email overload at work: an analysis of factors associated with email strain. *CSCW '06 Proceedings of the 2006 20th anniversary conference on Computer supported cooperative work* (pp. 431-440). New York: ACM.
- Future Work Centre. (2015). *You've Got Mail! Research Report*. Future Work Centre.
- Hair, M., Renaud, K., & Ramsay, J. (2007). The influence of self-esteem and locus of control on perceived email-related stress. *Computers in Human Behavior*, pp. 2791-2803.
- Jackson, T., Dawson, R., & Wilson, D. (2001). The cost of email interruption. *Journal of Systems and Information Technology*, pp. 81-92.
- Jerejian, A. C., Reid, C., & Rees, C. S. (2013). The contribution of email volume, email management strategies and propensity to worry in predicting email stress among academics. *Computers in Human Behavior*, pp. 991-996.
- Kushlev, K., & Dunn, E. (2015). Checking email less frequently reduces stress. *Computers in Human Behavior*, pp. 220-228.
- Ludford, P., & Terveen, L. (2003). Does an individual's Myers-Briggs Type Indicator preference influence task-orientated technology use? In M. Rauterberg, *Human-Computer Interaction - INTERACT'03* (pp. 623-630). IOS Press.
- Mark, G., & Ganzach, Y. (2014). Personality and internet usage: A large-scale representative study of young adults. *Computers in Human Behavior*, pp. 274-281.
- Mazmanian, M., Orlikowski, W. J., & Yates, J. (2013). The autonomy paradox: The implications of mobile email devices for knowledge professionals. *Organization Science*, pp. 1337-1357.
- Ofcom. (2015). *The Communications Market 2015: The market in context*. The Office of Communication.
- OPP Ltd. (2011). *MBTI Step I Instrument European Data Supplement*. Oxford: OPP Ltd.
- Opt, S. K., & Loffredo, D. (2000). Rethinking communication apprehension: A Myers-Briggs perspective. *Journal of Psychology*, 124, pp. 556-570.
- Radicati Group. (2015). *Email Statistics Report, 2015-2019*. Palo Alto, Ca, USA: The Radicati Group, Inc.
- Reinke, K., & Chamorro-Premuzic, T. (2014). When email use gets out of control: Understanding the relationship between personality and email overload and their impact on burnout and work engagement. *Computers in Human Behavior*, pp. 502-509.

Renaud, R., Ramsay, J., & Hair, M. (2006). "You've got e-mail!"... Shall I deal with it now? Electronic mail from the recipient's perspective. *International Journal of Human-Computer Interaction*, pp. 313-332.

Shen, J., Brdiczka, O., & Liu, J. (2013). Understanding email writers: personality prediction from email messages. *User Modeling, Adaption and Personalization*, pp. 318-330.

Shirren, S., & Phillips, J. G. (2011). Decisional style, mood and work communication: email diaries. *Ergonomics*, pp. 891-903.

Turnage, A. K. (2007). Email flaming behaviors and organizational conflict. *Journal of Computer-Mediated Communication*, pp. 43-59.

Vitak, J., Crouse, J., & LaRose, R. (2011). Personal Internet use at work: Understanding cyberslacking. *Computers in Human Behavior*, pp. 1751-1759.

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. |

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| 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! |

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| 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 it's 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) |