Left on 'Read': Expectations and Perceptions of Response Time in Mobile Instant Messaging

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I declare that this submission is my own work. Where I have read, consulted, and used the work of others I have acknowledged this in the text.

Signed: _____

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Abstract

Mobile Instant Messaging (MIM) apps allow for easy social interaction, however, individuals increasingly report feeling overwhelmed and distracted by these interaction opportunities, followed by a pressure to respond, with senders expecting their messages to be seen, read and replied to instantly. To manage these expectations, MIM apps have evolved to include online status and message read receipts. Research has demonstrated that these app signals have increased the pressure to respond, with the average expected response time being considered instant particularly when a message is 'read'. With this in mind present study aimed to explore how individuals form these expectations, how the response time is perceived and how these are influenced by MIM app signals. The results indicated that expectations and perceptions of response time are influenced by a number of related factors, including but not limited to MIM app signals of user activity. The results also demonstrated that the decision to respond to a message is also partly influenced by a pressure from MIM app signals such as message read receipts as there is a social obligation associated with opening a message.

Introduction

Mobile Instant Messaging (MIM) applications (apps) allow mobile users to send real-time text, audio and visual based messages to individuals or groups of contacts at no cost, once the user has a mobile internet connection. MIM apps such as WhatsApp, Viber and Facebook Messenger, have risen in popularity due to the surge in smartphone use along with the convenience of mobile data plans (Church & Oliveira, 2013) making social connectivity virtually constant (Perry, O'Hara, Sellen, Borwn & Harper, 2011).

There are many social benefits of using MIM apps, including the ability to see when contacts are available or online, practically instant communication, and the ability to participate in more than one conversation at once (Czerwinski, Cutrell & Horvitz, 2000). While MIM apps allow for easy social interaction, individuals increasingly report feeling overwhelmed and distracted by these interaction opportunities (Turkle, 2011). This is also followed by a pressure to respond, with senders expecting their messages to be seen, read and replied to instantly (Church & Oliviera, 2013). Recent research has begun to explore this pressure to respond, and the expectations of instant response, as individuals are expected to be responsive constantly and report feelings of imprisonment or entrapment when maintaining relationships through instant messaging (Hall & Baym, 2012).

Response Expectations

The popularity of MIM demonstrates the expansion of everyday face-to-face (F2F) social interaction or 'talk' to a new medium, rather than a substitute for traditional forms of interaction and relationship maintenance (Baym, 2002). As such, research investigating response expectations in other computer mediated communication may have applications for understanding response expectations in MIM apps.

Tyler and Tang (2003) investigated email responsiveness in the workplace and how the timing of an email response can convey important information. The researchers explored email user's perceptions of their individual responses to emails and how they formed expectations of others' responses. Findings suggested that participants had a good idea of when to expect a response based on their previous interactions with the recipient and could form these expectations after just a few interactions. Participants also expected responses within a specific timeframe, and if a response was not received within that time, action would be taken through another communication medium. When an immediate response was needed, participants chose Instant Messaging (IM) to contact a colleague. The findings of this study

demonstrate how expectations may be formed through previous interactions with a recipient, and how the timing of an email response can have possible non-verbal communicative interpretations. These findings also highlight how IM is expected to facilitate fast response times, even before the availability of MIM.

Managing Response Time Expectations

With MIM comes an expectation that the receiver will see and read a message within a few minutes or immediately (Church & Oliviera, 2013). To manage these expectations, MIM apps have evolved to include real-time informational features to signal availability, such as WhatsApp's "last seen" feature, or Facebook's "online". In 2010 Apple added its own MIM service, 'iMessage' to iOS 5 along with a real-time informational feature called 'read', these read receipts signalled to the sender when a message had been read by the recipient. Facebook Messenger followed suit with this feature in 2012 with the addition of "seen", accompanied by WhatsApp in 2014 with the inclusion of a double blue tick beside an opened message.

Read receipts are now a feature used by most MIM applications including WhatsApp, Facebook Messenger and Viber, to notify the sender of message status. WhatsApp in particular, has three levels of statuses, a grey 'tick' to convey that a message has been sent, a double grey tick to signal successful delivery and finally a double blue tick to notify the sender that the recipient has read the message.

Signalling to a sender that a message has been opened and read by a recipient plays a similar role to indicating a message has been heard and attended to by gesture or voice in F2F communication. By developing the richness of this social cue in MIM apps, the read receipt now plays a role of increasing synchronicity, likening MIM to F2F communication in the expectation of a reply (Baym, 2010).

Unmet Expectations and Negative Consequences for the Sender

While MIM apps attempt to manage sender expectations by signaling availability and message statuses, knowing when an individual is online and has read a message has raised increases expectations of instant response and can lead to negative emotions in the sender when these expectations are not met.

Ahad and Lim (2014) demonstrated how 'last seen' online status and read receipts can promote addictive-like checking behaviour in the sender. The researchers investigated whether WhatsApp was a convenience or nuisance for undergraduate students and concluded that while MIM apps like WhatsApp provide a medium for convenient, meaningful and emotional communication, participating in a high number of conversations and having a high sensitivity to availability status or read receipt features can be associated with negative psychological consequences for the user.

Similarly, Lynden and Rasmussen (2017) attempted to understand the behaviour, feelings and attitudes surrounding read receipts in MIM through mixed methods. Interviews with participants revealed that in general, individuals dislike read receipts. Participants expressed anxiety, and fear when sending a message that was then marked read, but not responded to. In the subsequent survey 35% of participants reported that they felt ignored when a message was marked read but not responded to. The qualitative phase of this study also demonstrated that read receipts increased checking behaviours and speculation for the sender. This study also illustrated the pressure read receipts can create for the recipient. Recipients often felt overwhelmed by a pressure to respond knowing when they read the message the sender would also know. Participants admitted that they often employed strategies to avoid showing the sender they had read their message, with 82% of the survey respondents admitting to this avoidance with the top strategy being not to open the message.

Similarly, Hoyle, Das, Kapadia, Lee and Vaniea (2017) investigated this access to real-time information on Facebook Messenger and found that senders experience a range of emotions when the MIM application signals that a message is unread or is read but not replied to immediately. The ability for sender to see the delivery status of the message sent and whether it has been read or not, adds to the anxiety of the sender, and creates social pressure along with privacy concerns for the recipient through heightened expectations of response. This study highlights how real-time information about the recipient can influence the sender's expectations of response time and their perception of this response time. However, this study investigated perception through quantitative methods, with two self-reported measures, limiting the explanations of these expectations and perceptions, to those provided by the measures.

Read Receipts and Manipulation of Response Time

Read receipts it appears, play a critical role in forming sender expectations of response time, but also in increasing the pressure to respond in the recipient. Reynolds et al.,

(2011) investigated whether these read receipts affected how individuals responded to messages and observed that BlackBerry Messenger (BBM) users would often intentionally delay opening a message to avoid generating a read notification for the sender, allowing for some ambiguity as to when the message was 'read'. This study suggests that read receipts may not only heighten expectations and perceptions of response time, but may encourage recipients to employ strategies to delay responding.

Similarly, Kato, Kato, Kunihiro and Chida (2012) examined response time and emotional strategy in mobile text messaging in Japan. Through a survey, university students were asked if they would wait before responding to text messages, and if so, in which situations they would they wait. Results indicated that response time is often manipulated, such as intentionally delaying a reply, particularly in emotional situations. Participants were asked to rate whether they would wait before replying to text messages from senders conveying each of four emotions: happiness, sadness, anger, and guilt. The results demonstrated that for each of the four emotional settings (happiness, sadness, anger and guilt) participants reported that they would adjust the timing of message replies in order to influence the emotions of others or their own emotions.

Kato, Kato, Kubota and Tachino (2013) investigated techniques employed to end long chains of text messages, and their results suggested that delayed reply is one such important technique. The timing of responses therefore, could be considered to express important non-verbal information, with slow response conveying a negative emotion to the sender (Kato & Kato, 2015).

The Present Study

MIM applications are used increasingly and users expect responses to their messages almost immediately (Church & Oliveira, 2013). This expectation of immediate response can cause problems, for both the sender and the receiver. Previous research regarding MIM response times has concentrated on users' average expected response time, how individuals manage their expectations and its subsequent potential implications for design, without addressing how MIM users form these expectations and perceptions. With this in mind, the present study aimed to address the following research questions:

1. How do individuals form expectations about how long it will take others to respond to a message in a MIM application?

2. How do individuals perceive the time it takes others to respond to their message in a MIM application?

With the addition of MIM app signals of user online and message statuses, MIM users are now able to see when a message is read, and when the receiver is online. Recent research has begun to examine how this information can elicit emotion for the sender, and put pressure on the receiver to respond, who often employs strategies to avoid showing their presence or receipt of the message. Therefore, the proposed study will also address the following research questions:

3. How do MIM app signals of online and message statuses influence expectations and perceptions of response time in MIM applications?

Method

Design

The present study employed a qualitative interview design, using an inductive approach of thematic analysis to investigate the expectations and perceptions of response time in MIM. Qualitative research is an approach that aims to describe and explain the lived human experience (Polkinghorne, 2005) providing a deeper understanding of social phenomena than would be acquired from purely quantitative methods (Silverman, 2005). FtF interviews give the researcher the opportunity to explore individual's perceptions, focusing on meanings and reasons behind behaviour (Arksey & Knight, 1999). As the purpose is to derive interpretations from respondents' answers (Rubin & Rubin, 2012) the interview process remained flexible and semi-structured, to allow for a variety of meanings to be discussed. Additionally, F2F interviews allow for a wide range of questioning styles, giving the interviewer the opportunity to probe and clarify comprehension of questions and concepts (Frey & Oishi, 1995).

Thematic analysis is a method for identifying, analysing and reporting themes within data, organizing and describing data sets in rich detail (Braun & Clarke, 2006). An inductive approach was used, which produces a comprehensive description of the phenomenon being studied (Wood, Giles & Percy, 2009). This approach determines that themes identified are strongly associated with the data, as the researcher develops themes from interpreting the data. Thematic analysis does not specify the analytical focus too narrowly in advance, offering an accessible and theoretically flexible approach to analysis, particularly for novice qualitative researchers, providing a rich and detailed account of data (Braun & Clarke, 2013).

Participants

Participants for a qualitative study are selected on the basis that they can provide meaningful contributions to explain and describe the social phenomenon under investigation (Polkinghorne, 2005). Participants were selected through purposeful sampling, as this method is deemed most appropriate for selecting participants who are most able to contribute information vital to the research study (Flick, 2009). Individuals who can provide this information are typically those that have experienced or are experiencing the phenomenon being studied (Polkinghorne, 2005). Considering the research questions of the present study,

it was therefore important that participants were both smartphone users and regular users of mobile instant messaging apps.

8 Participants were recruited through the researcher's wider social network, where those that met the selection criteria were invited to partake in individual interviews. 8 participants took part, 5 females and 3 males (25-34yrs). When the main aim of a study is to understand perceptions and experience of individuals who have been purposively selected, 6 to 12 interviews should be sufficient to reach data saturation (Guest, Bunce & Johnson, 2006).

Materials and Apparatus

Participants were given an information sheet (Appendix A) this outlined the aims of the current study and the criteria for participant selection. Each participant was given two consent forms, one for consent to take part (Appendix B) and the second for consent to quote (Appendix C). Participants were asked to fill out a demographic information sheet (Appendix D) before the interview commenced. Once the interview was completed, participants were given a debrief form (Appendix E), thanking them for their participation, outlining the purpose of the study as well as providing contact details for the researcher should they need to ask further questions. An interview script (Appendix F) was created containing open-ended questions which would allow participants to discuss their own experiences. The script was not determinant of the questions asked in each interview but acted as a guide for the researcher. An audio recording smartphone application was used to record the interview conversations. Audio recordings from this device were then uploaded to a computer for transcription purposes and secure keeping.

Pilot Study

A pilot study was conducted with 2 MIM users. These interviews followed the same procedure as outlined below. The purpose of a pilot study was to refine the questions for the interview schedule, and to ensure participants understood the phrasing of questions. It also served to approximate the time needed to conduct the interviews. After the pilot study was completed, it was decided that the interview time would be more flexible, lasting 15-25 minutes, as the participants varied in the amount of time needed to respond to questions.

Interview Procedure

Once recruited, participants and the researcher agreed upon a time and location for each interview. On arrival, the participants were invited into the room and asked to take a seat opposite the researcher. Participants were thanked for their participation and were given an information sheet to read before giving consent. The participants were then asked if they had any questions, which the researcher answered, before completing the consent forms and demographic information sheet. The participants were then told how the interview would be structured, assured that there were no right or wrong answers and reminded that the conversation was recorded. Participants were asked if they would like to choose their pseudonym if consenting to be quoted. Interviews ran between 15-25 minutes and were structured as a conversation. The researcher encouraged participants to elaborate on their points but took extra care to not to give feedback to the participants on their responses. Once the researcher felt there had been sufficient questions asked from the interview schedule, and that the participant had enough time to respond, the interview was ended. The researcher then thanked the participant, stating the interview was over and turned off the recording device. Participants were then given a debrief form and the time to ask any questions. The researcher then asked participants if they would like to be contacted to confirm interpretations of responses before analysis. If they so wished, participants were asked to give an email address where the researcher could contact them.

Ethics

This study received ethical approval (Appendix G) from IADT's Department of Technology and Psychology Ethics Committee (DTPEC). The present study also adhered to the ethical guidelines outlined in The BPS Code of Human Research ethics and the PSI Code of Professional Ethics. The researcher has reviewed these guidelines and has considered these ethical principles in all stages, but has taken specific actions to ensure the confidentiality of respondents and informed consent, voluntary participation and right to withdraw, adequate debriefing, minimal risk to participants, and the secure protection of data.

As the descriptions of the participants may be more detailed than that of quantitative studies, avoiding breaches of confidentiality is of utmost importance in qualitative research (Kaiser, 2009). To ensure confidentiality, the researcher gave participants' a pseudonym and replaced any other identifying information from the data with an 'X'. Confidentiality was discussed with the participants from the outset, outlined in the information sheet, and re-

iterated by the researcher during the process, which is necessary for acquiring informed consent (Crow, Wiles, Heath & Charles, 2006).

The recorded audio files were uploaded to a secure laptop, with the original recording subsequently deleted from the recording device. This data is password protected on a personal student drive. This data will be kept securely for 5 years, after which it will be destroyed.

Results

Analysis Procedure

The audio-recordings of interviews were transcribed verbatim and analysed in Google Sheets (see Appendix H for example). An inductive approach to thematic analysis was used, using Braun and Clarke's (2006) six phase analysis as a guideline. Figure 1 depicts how themes were identified from the data and organized.
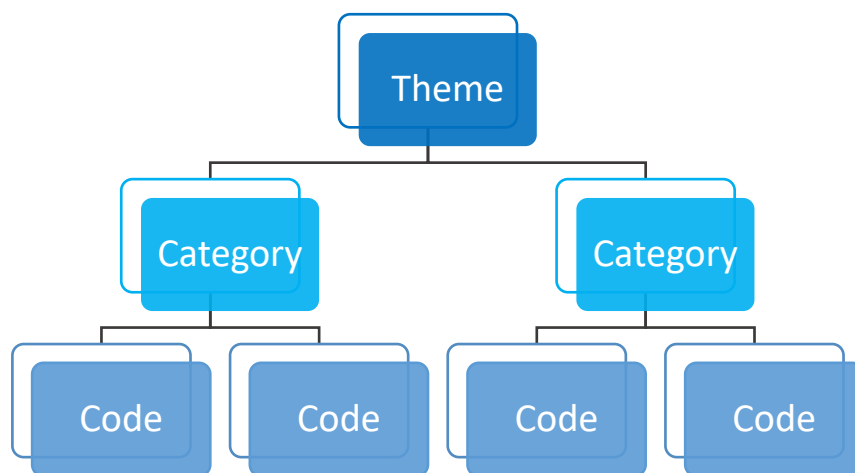
Figure 1. *Organization of codes, categories and themes*

The present study aimed to explore how individuals form expectations of when they will get a response to a message sent via a MIM app and how these response times are subsequently perceived. The present study also aimed to explore how MIM app signals influence these expectations and perceptions. The most frequently occurring themes related to these research questions are reported below, with additional codes and themes are reported in Appendix I. However, it is important to note that patterns that were important for answering these research questions were not necessarily determined by frequency, and although reported, frequencies of themes does not determine its value (Pyett, 2003) in relation to the research questions (Braun & Clarke, 2006). As the interview process was flexible, not every participant discussed the same issues and this is evident in the frequencies of themes.

Reliability

As an inductive approach to thematic analysis was used, the coding system evolved and themes were refined during analysis, in line with the guidelines set by Braun and Clarke (2006). As such, it was deemed most appropriate to measure inter-reliability after the data

had been analysed by the researcher. This was achieved by presenting a colleague with a background in qualitative research, with a subsample of the data representing approximately 20% of each participant's transcript, along with the definitions of the refined themes and sub-themes (see Appendix J). Cohen's Kappa Coefficient was then calculated (Appendix K) to determine if there was agreement, to check inter-rater reliability. There was strong agreement, $\kappa = .843$, $p < .0005$. The evaluation of the strength of this agreement was based on guidelines by Landis and Koch (1977).

Factors Influencing Expectations and Perceptions of Response Time

       The present study aimed to understand how individuals form expectations of response time in MIM apps and how these response times are then perceived. The theme of 'Factors Influencing Expectations and Perceptions of Response Time' identified from the data indicates that response time expectations are formed and influenced by multiple factors, and that the perception of response times is also influenced by these factors. The most occurring influential factors are reported in Table 1 as sub-themes with definitions, example quotes and frequency. It is important to note however that neither of these identified factors are more important than the other, but rather, they represent a collection of influential factors that inform an individual's' expectation and perception of response time.

Table 1

Factors Influencing Expectations and Perceptions of Response Time

Sub-Theme	Definition	Example	Frequency
Importance of Message Content to Sender	The sender's evaluation of importance or urgency of the message content or the significance of the message topic influences the sender's expectations and perceptions of response time	*"It depends on the message really. Like if the message is me sending a silly gif or a meme or something like that, then I'm not really that bothered whether they reply at all..."*	6.52%
Sender's Knowledge of Recipients' Current Availability	An understanding, awareness of the message recipients' current situation, location, context and availability offline or lack thereof, influences expectations and perceptions of response time	*"...probably within the same hour to be honest. Unless they're really away... Like physically away, so say if they're on holidays"*	5.79%
MIM App Signals of User Activity	The signals a MIM app produces about a user's activity including online status and message status updates such as read receipts are described as having an influence on expectations and perceptions of response time	*"It's different... if they haven't seen the message, if they have seen the message, you know those ticks, those two blue ticks like 'seen'..."*	5.07%
Sender Relationship with Recipient	The type of relationship with a recipient and the level of familiarity, comfortableness and rapport is influential in forming expectations and perceptions of response time	*"...It really depends on who the person is..."*	3.98%
Sender's Knowledge of Recipients' Response Tendencies	Knowledge and previous experience with a recipient's usual response time, response tendencies or habits is described as being influential in forming expectations and perceptions of response time	*"I think depending on how much you talk to the person, you can kinda start anticipating their normal replying time"*	2.54%

Number of Recipients	The expectations and perceptions of response time are influenced by the number of recipients, with faster response expected within a group over a 1:1 message exchange.	*"...generally I would expect a response from someone in the group within a couple of hours, cause there's more people, so the chances are someone is online and has read it and will reply"*	1.44%
Total			25.34%

Importance of Message Content to Sender. The most frequently occurring of these sub-themes was 'Importance of Message Content to Sender'. Participants when asked when they would expect a response after sending a message via a MIM app, often explained that "*it depends on what the message was about*" (Doireann)

It also appears that the higher the perceived importance of the message to the sender, the faster the expected response will be:

"*..if I send a message being like 'I've got big news', I'd expect a reply within like 20 minutes, like if I had something really important to say, or if I was really upset, but if it was something like more trivial, then I wouldn't expect a reply as fast*" (Doireann)

This importance of a message and its content urgency was a consistent influential factor in how participants formed their expectations, but also how they formed their perception of a response time. When asked how they would feel if a message was not responded to within their expected time frame, participants often explained that again it would depend on the message itself, how they would feel or react:

"*Like am I asking them to do something? or like 'are we going for drinks tomorrow?' , like if it's just something like sending a video or something, I would just assume they are busy, like I wouldn't get upset or anything*" (Rihanna)

There also appears to be negative perception associated with messages perceived as important with slower than expected response time, in particular it was seen as 'rude':

"*If it's just nonsense, then I don't really care whether they reply or not, but if it's asking a question, or if it's urgent, and they see it and they don't reply, it's rude*" (Samuel). Gina explains how this influences her perception:

"*...like if it was something kind of inconsequential, like 'did ya see this?' or 'have you seen that movie in the cinema?' or whatever, I would think like they're busy they'll get back to me later. But if it was something important like 'can you let me in I'm outside?' or something like that I'd expect a much quicker reply, obviously that's an extreme example but like if you were*

text someone being like 'what did you get Mam for her birthday? I'm in the shopping centre now' and they read your text and they didn't reply, I'd consider that to be rude..."

Knowledge of Recipient Current Availability. Knowledge of the recipient's current availability was also identified as an influential factor when forming expectations and perceptions of response time. When participants were asked when they would expect a response to a message, often they would explain that it depends what time of day it was, and if they knew what the recipient was doing at the time of sending the message: "*I suppose that depends on a number of factors. First of all, is the person in work? I don't expect an immediate reply if they are in work*" (Colin)

Doireann further demonstrates this influence, particularly how the time of day impacts her expectations: "*I probably would expect a reply within a couple of hours, it depends on the time of day. Like if it was first thing in the morning, then maybe not, and during the day if people are in work, then I wouldn't expect a reply...*" Furthermore the perception of response time is also influenced by this knowledge as Doireann goes on to explain further: "*...but in the evening, I'd be like "what are they doing that they can't write back to me*"

MIM App Signals of User Activity. The third research question, addressed how MIM app presence information influence expectations and perceptions of response time. MIM app signals of user activity was identified as a sub-theme of factors influencing expectations and perceptions, in particular read receipts. While not always explicitly mentioned, participants consistently referred to whether a message was 'read' or not as having an influence on their expectations and subsequent perceptions. Oliver reported that he would expect an instant response if a message is read:
"*It's different... if they haven't seen the message, if they have seen the message, you know those ticks, those two blue ticks like 'seen', I would expect them to reply instantly*"
When asked why, he clarifies:
"*Cause they have seen the message like, so they've read it. And they're online. So I'd be expecting them to reply right then*"

Relationship with the Recipient. The relationship with the message recipient was also identified as an influential factor, with participants reporting that response time expectations "depends on the contact" (Doireann) and what their relationship with that person was: "it

depends on the friend" (Rihanna). It also appears that the closer the relationship, the faster the expected response time. Colin explains:

"*I would expect a message more frequently depending on how close I am to the person, so for example, my best friends, somewhat quicker than someone I don't know as well.*"

Sender's Knowledge of Recipients' Response Tendencies. Knowledge of the recipient's usual response times, or messaging rhythm was also identified as a factor influencing expectations and perceptions. It appears that previous interactions with a contact often influence when a reply is expected, as Tara points out:

"*the two people closest to me are the worst when it comes to text, which is strange but... again you learn what the other person's rhythm is*"

This learnt rhythm can also influence on how a response time is perceived, if the recipient deviates greatly from this usual pace, it can be noticed by the sender, and interpreted as strange, odd or indicate that 'something's up', as Rihanna explains:

"*...she would respond like that day at least, but I had sent like 4 messages and she hadn't at all, so I was like 'what's up with her' , so eventually I asked her on WhatsApp what was going on, 'is everything ok?' like*"

Number of Recipients. A difference was also identified in expectations and perceptions of response time between individual messaging and group messaging. As there are more people in a group that will receive the message, the response time expectation increases, as Kate describes:

"*...it's generally very instant with WhatsApp with my friends, especially with a group of friends. Maybe individually it would be longer, but if you're texting within a group, someone is going to reply within 5 mins*"

Perceptions of response times were also influenced by the number of people receiving it, with groups invoking different perceptions than individual, Gina points out why:

"*...if you write into a group and everyone has seen the message and not replied, it's a bit anxiety inducing. You kinda almost feel like texting your best friend from that group, being like 'will you just reply to that cause I look like a freak just talking to myself'. Cause it does feel like you're just shouting into a room full of people, and no one is replying to you, it does feel weird*"

Relationship between Multiple Factors. The relationship between these identified factors was also identified consistently from the data, with participants often referring to more than one factor when explaining how they form their expectations. Rihanna illustrates how relationship with recipient, MIM app signals and knowledge of recipient current availability influence her expectations:

"*It depends on the friend. And if they have read it or not. And if I know what's going on with them or not…*"

Doireann also refers to this relationship, highlighting relationship with recipient, perceived importance of message content and knowledge of recipient availability:

"*It depends on the friend, and it depends on what the message was about… If it was a close friend, I probably would expect a reply within a couple of hours, it depends on the time of day*"

This was also the case for perceptions, for example, Gina explains how the number of recipients influences her perception, but also her relationship with those recipients:

"*I think it depends on how comfortable everyone in the group is with each other, and say like you're writing into a group of your family, you're not gonna care if no one responds, because they have to live with you every day. If you're writing into your college group let's say and you text... and no one replies, like that is humiliating.*"

Reactions to Unmet Expectations

When a sender's expectations are not met by the recipient with no response within the time frame expected participants described different types of reactions, outlined in Table 2.

Table 2

Reactions to Unmet Expectations: Sub-Themes, Definitions, Examples and Frequencies

Sub-Theme	Definition	Example	Frequency
Negative Emotional Reaction	No response elicits a negative emotional reaction, such as frustration, irritation, feelings of being ignored, or annoyance	*"It makes me feel ignored"*	5.43%
Evaluation of Unresponsiveness	No response is questioned, evaluated and deductive reasoning applied, such as an assumption of unavailability, or recipient being pre-occupied.	*"I would just assume they are busy"*	3.62%
Follow-Up Message	Sending a follow-up message asking why a response wasn't received, or re-sending the same message when response not received in expected timeframe	*"I would just leave it until later...and message them again"*	1.08%
Total			10.13%

These reactions are influenced by the factors identified, with a combination of different factors eliciting a different reaction. In particular in close friendships, the reaction to unmet expectations is often to evaluate the unresponsiveness, either because it goes against normal response tendencies, or because the sender trusts the recipient will get back to them at some point due to their high level of rapport. With a newer relationship, or within a group where not all members have the same level of rapport, a negative emotional reaction would appear to be more likely, Rihanna illustrates:

 "*...if it's a new person, I'd probably get a bit paranoid about if they've read it and not responded. But if it's someone I'm comfortable with then I just assume that oh they're busy, they'll get back to me when they're ready*"

Response Evaluation

While the present study aimed to explore how individuals' form expectations of response time in MIM apps, due to the flexible nature of the study, participants often spoke of when they receive a message, and thus a theme of 'response evaluation' was identified from the data. It appears that when a message is received it goes through an evaluation or screening process whereby the recipient where certain factors are considered which help

inform when they will respond to the message. This is evident in the sub-themes identified, which are outlined in Table 3 below. It is important to note, that although frequency is reported, each factor identified is not more influential than the other when deciding to respond to a message, but rather contributes to that decision.

Table 3
Response Evaluation: Sub-Themes, Definitions, Examples and Frequencies

Sub-Theme	Definition	Example	Frequency
Recipient Availability	Decision on when to respond is influenced by recipients' availability when message is received	*"...if I'm sitting on public transport, I'd reply to everyone's message immediately cause I'm not doing anything else"*	5.43%
Relationship with Sender	Decision on when to respond is influenced by who the message is from and the recipient's relationship with the sender	*"I might leave my Mam's text and prioritise say if I had like a new acquaintance"*	4.35%
Effort Needed to Respond	Decision on when to respond is influenced by how much effort is needed to respond including mood, energy and thinking involved in formulating a response	*"Like I'll just leave it until I have the time to think or respond properly"*	3.99%
Perception of Message Content's Importance	Decision on when to respond is influenced by the recipient's perception of the importance of message content or topic urgency	*"...if someone is disclosing like personal information, you can't just kinda ignore a text like that, when someone's being vulnerable"*	3.62%
Total			17.03%

Similar to the factors identified for influencing response time expectations and perceptions, when a message is received, recipient availability, relationship and the perceived importance of the message content are considered. Additionally the recipient estimates the effort needed to respond to a message, which includes mood, energy and how much thinking

is involved. Tara describes this evaluation and the concept of using a notification to screen a message:

"My sister, I love her to bits, but she's a royal pain, and I know once I get chatting to her I'll never get off. And I see the notifications come in, and see it's from my sister, and I'm like 'no chance, nope too tired', 'I'll come back to her tomorrow'"

Using a notification as a screener to aid evaluation gives the recipient time to consider the factors identified. Figure 2 illustrates how a notification can provide this information to a recipient.

Kate explains how she can tell what the message is about from a notification:
"so if I don't wana go to that thing, or I need to have a think about it, and I kinda know what that message is about, then I'll just leave it for a bit...cause you can kinda see a good chunk of the message from the notifications"
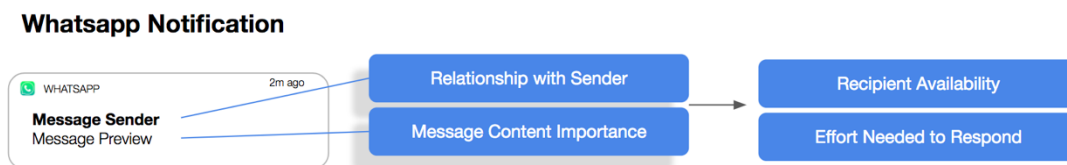
Figure 2. *Response Evaluation, Example of Message Screening Process*

Social Agreement of Response

All participants discussed delaying techniques when discussing the themes related to response evaluation, these techniques included previewing a message in an notification, and purposely not opening it within the application to avoid generating read receipts, and turning on airplane mode to view the opened message, also to avoid generating read receipts. This message screening behaviour is related to the theme of response evaluation, in that participants evaluated the message in a preview state and their decision to open the message was also an agreement to respond, this is represented as a theme of social agreement of response. Table 4 below outlines this theme's categories, definitions and frequency.

Table 4
Social Agreement and Obligation: Sub-Themes, Definitions, Examples and Frequencies

Sub-Theme	Definition	Example	Frequency
Delaying Techniques	Using techniques such as not opening a message, to avoid generating read receipts in order to delay the obligation to respond	*"I don't click into it immediately, if I don't know if I'm going to agree to it. Because I don't want them to know that I've seen it and then not replied to it."*	5.79%
Pressure from MIM app signals of activity	Feeling pressured to respond because of MIM app signals such as online status and read receipts	*"Like if they can see you read the message, then you have to respond..."*	3.26%
Politeness and Etiquette	Believing it is polite to respond once a message has been opened, or to not respond would be rude.	*"I should at least acknowledge that they've messaged me, being like 'lol' or whatever dya know?"*	3.26%
Delayed Response with Excuse	Explaining or justifying one's delayed response with an excuse to why a message was not responded to instantly.	*"And then in the morning then of course there's then a follow up excuse of I'd gone asleep or something"*	2.17%
Dilution of Responsibility	Feeling less pressure or obligation to respond when a message is received in a group.	*"So, there's less pressure, if you're busy then someone else can respond to it, and you can pick it up later. You don't feel that sense of responsibility to respond"*	1.81%
Total			17.01%

There appears to be a social obligation attached to simply opening a message, a formal acknowledgement of receiving a message and an uneasiness of leaving a message 'on read' for fear of appearing rude, Rihanna explains: "*Yeah, cause if someone asks you a question in real life, you don't just leave the room like [laughs]. Like if they can see you've*

read the message, then you have to respond, it would be like leaving the room like if someone asks you a question [laughs]"

        Doireann also highlights this concern for appearing rude or disrespectful:
"*I suppose it's just how things are now with messaging, it's just so quick and so instant like if I missed someone's call, I wouldn't be like 'oh that's rude' , well I'll talk to them when I'm ready, like I'll call them back when I'm not busy. But if I get a text, even something stupid, I should at least acknowledge that they've messaged me, being like 'lol' or whatever dya know? Just some kind of acknowledgment that they've message me*"

        Gina describes a term called 'Left on Read', which relates to this social obligation in that it is a direct violation of it:
 "*that turn of phrase you hear 'left on read', like he 'left me on read'*" She goes on to explain when asked what this meant:
"*...like 'so and so texted your man last night and he just left her on read', like he opened their message, and just left it, didn't reply. I almost sometimes, ya know when you send a risky message, like asking someone to do a favour, I know myself that if I get a message like that, I don't click into it immediately, if I don't know if I'm going to agree to it. Because I don't want them to know that I've seen it and then not replied to it. Whereas I just want a little bit of time to think about it, like think about what I'm going to say or whatever*"

Choosing Communication Medium Based on Recipient Availability

        All participants expressed how they used more than one MIM app, with the two most popular being WhatsApp and Facebook Messenger. The reason to use more than one MIM app was identified as a theme of 'choosing communication medium based on recipient availability'. When an individual wants to communicate a message, they choose the communication medium where they know the recipient to be most available to respond, this includes choosing phone call over MIM, and choosing a particular MIM app over another. Table 5 below outlines this theme's categories, definitions and frequency.

Table 5

Choosing Communication Medium Based on Recipient Availability: Categories, Definitions, Examples and Frequencies

Category	Definition	Example	Frequency
Using Different MIM apps for different people	Using more than one MIM app, ore more than one social media app for IM including WhatsApp, Viber, Facebook Messenger, Instagram, Snapchat and Slack, for different individuals or groups.	*" use different ones for different people, like I'd use Viber to talk to my Mam"*	2.89%
Choosing Alternative Communication Medium	Choosing another medium of communication when MIM does not elicit a response within the expected timeframe, or when a message is too important to wait for a response on MIM app.	*" after a while I'd probably just ring them"*	1.45%
Total			4.34%

Summary of Results

Along with themes relating to the research questions, the results identified three additional themes that provided an understanding of how a recipient decides when to respond to a message, and demonstrates the social agreement or obligation to respond.

A summary of the themes and their respective sub-themes, categories and frequencies are reported in Table 6.

Table 6
Summary of most frequently occurring themes identified

Theme	Sub-Themes/Categories	Frequency
Factors Influencing Expectations and Perceptions	• Importance of Message Content to Sender • Sender's Knowledge of Recipients' Current Availability • MIM app signals of User Activity • Sender's Relationship with Recipient • Sender's Knowledge of Recipient Response Tendencies • Number of Recipients	23.9%
Reactions to Unmet Expectations	• Negative Emotional Reaction • Evaluation of unresponsiveness • Follow-up Message	9.05%
Response Evaluation	• Recipient Availability • Relationship with Sender • Effort Needed to Respond • Perception of Message Content's Importance	17.03%
Social Agreement and Obligation to Respond	• Delaying Techniques • Pressure from MIM app signals of user activity • Politeness & Etiquette • Delayed Response with Excuse • Dilution of Responsibility	15.2%
Choosing Communication Medium Based on Recipient Availability	• Using Different MIM apps for different people • Choosing Alternative Communication Medium	4.34%

Discussion

Overview

The present study aimed to explore how individuals form expectations of when they will receive a response to a message in a MIM app, and how the response time is perceived. The present study also aimed to explore how MIM app presence information influences these expectations and perceptions. The results indicate that expectations and perceptions of response time are influenced by a number of related factors, including the importance of message content to the sender, the sender's knowledge of recipient current availability, MIM app signals of user activity, the relationship to recipient, the sender's knowledge of recipient response tendencies and the number of recipients.

The results of this study also identified three different reactions of the sender when expectations are not met: a) negative emotional reactions b) evaluations of unresponsiveness c) sending a follow-up message. These reactions are determined by the factors that influence expectations and perceptions.

While not initially addressed as a research question, the results also demonstrate that before responding to a message, a message goes through a screening process whereby the recipient considers a number of factors to decide when to respond: a) one's availability b) relationship with the sender c) the effort needed to respond d) the message content's importance. This decision to respond however, is often discounted when a message is opened and generates a read receipt for the sender as there is a social obligation to respond associated with reading a message. By opening a message, a recipient formally acknowledges the sender's message, and feels a pressure to respond brought about by the MIM app's signals of read receipts, the 'blue ticks' of WhatsApp and the 'seen' feature of Facebook Messenger.

To mitigate this pressure, a recipient will often employ delaying techniques, allowing for more time to respond and avoiding the appearance of being impolite. This social obligation is lessened in a group, with members of a group diluting the responsibility to respond between them, but is violated when a message is 'left on read', leaving the sender to interpret the delayed or non-response based on the factors identified as being influential in perception.

General Discussion

Response Expectations. Recent research has examined response time expectations in MIM apps and has highlighted that individuals expect a message to be read and replied to

within a few minutes or immediately (Church & Oliveira, 2013), however research examining how these expectations are formed is limited in availability. Tyler and Tang (2003) investigated email response expectations and how the timing of a response can convey important information. The findings demonstrated that individuals had a good idea of response time expectations, formed on the basis of previous interactions with the recipient. The findings of the present study also highlight how previous interactions and knowledge of usual response tendencies help shape response time expectations in MIM app communication.

Additionally, Tyler and Tang (2003) illustrated that individuals expect a response to an email within a specific timeframe and when these expectations are not met, actions are taken through other communication medium such as IM where a faster response time is expected. The participants of the present study also expressed how unmet expectations, particularly when a message was perceived as very important, prompted action to be taken in another communication medium, usually a phone call.

While the results of Tyler and Tang (2003) refer to workplace settings, the similarities in results suggest that unmet expectations of response time provoke further action to be taken in a communication medium deemed to be most able to meet those expectations. This is also demonstrated in the present study participants' choice of MIM apps, with each participant expressing the use of more than one MIM app, and making a decision on which app to use based on the where they deem the recipient to be most available to respond.

Social Agreement and Obligation to Respond. The present study illustrates that a pressure to respond is influenced by a social agreement or obligation when a message is opened and generates a read receipt, and that individuals often decide to delay responding after screening a message, by purposely leaving a message 'unread'. In line with the results of the present study, Reynolds et al., (2011) observed that BBM users would often intentionally delay opening a message to avoid generating a read receipt for the sender, allowing for some ambiguity as to when the message was actually 'read'. Similarly previous research with MIM users (Kato et. al, 2013; 2014, Lynden & Rasmussen, 2017) demonstrated that individuals often manipulate response times, such as intentionally delaying a reply particularly in emotional situations and to end long chains of text. The present study's support of these findings highlights how the inclusion of MIM app presence information increases the social pressure felt by the recipient.

Reactions to Slow Response Time. Kato et al., (2014) proposed that the timing of responses could be considered to express important non-verbal information. This non-verbal information takes the form of a slow response conveying a negative emotion to the sender. The present study supports this proposal to a degree, but includes and highlights the factors that influence the perception of a response time, where a slow response does not always convey a negative emotion. This is evident in the participants' reactions to a slow or non-response, which differed from a negative emotion, an assumption that the recipient was pre-occupied to a follow-up message based on the influential factors identified, particularly the recipient's relationship with the sender. This highlights how level of rapport, comfort or trust with the sender influences sender reactions to a slow or delayed response.

Strengths and Practical Implications

Given the tendency of previous research to focus on measuring the average expected response times, the effect of read receipts on response time, the frequency of delaying techniques and the quantitative approach to methodology in this area, the present study contributes to an existing body of research by deepening the understanding of MIM app communication as the qualitative methods employed allowed for the collection of rich meaningful data (Braun & Clarke, 2006). The conversational structure and flexibility of the interview procedure, allowed participants to reflect on their own experiences of response expectations and perceptions without limiting the topics discussed, providing an individual perspective with little input from the researcher.

Previous research has concentrated on the influence of read receipts and online status information in MIM apps on expectations and perceptions of response times, the present study not only contributes to this body of work, but introduces factors not previously considered fully, factors that have similarities to F2F communication. Indicating that a message has been read plays a similar role to demonstrating a message has been heard or attended to by gesture or voice in F2F communication. By increasing the richness of this social cue in MIM apps, the read receipt plays a role of increasing synchronicity, making it closer to F2F communication in the expectation of a reply (Baym, 2010). The present study therefore contributes to computer mediated communication literature, adding further understanding to how individuals communicate through instant messaging, and how non-verbal information is used and perceived in online communication, creating the basis for what could be a model of expectations and perceptions of response time.

The findings of the present study could also inform best practices for design features to better manage user expectations, not only for personal MIM apps such as WhatsApp and Facebook Messenger, but for Software As A Service (SaaS) companies producing instant messengers to facilitate online customer support or 'live chat' for online businesses such as Olark, Zendesk, Intercom and Drift.

Limitations and Future Research

Although the present study makes important contributions to the existing literature on response time expectations and perceptions in MIM apps, it is not without limitations. The sample size and time constraints of undertaking qualitative research methods may have restricted the generalizability of the results. The sample of 8 participants, while sufficient to reach data saturation (Braun & Clarke, 2013), limits the generalizability of findings, and future research should consider examining this topic with a larger sample. Given a larger time frame, the study may have been able to conduct interviews with a larger sample size and examine the prevalence of themes from a larger data set.

The gender imbalance in the sample was also identified as a limitation. Although previous research would not indicate a difference in MIM app response expectations and perceptions based on gender, this may be due to the sparsity of available literature. The majority of participants in the present study were female, and perhaps the results may have differed with a larger representation of males. Future research should investigate if there is a difference between males and females in their expectations and perceptions of response times.

Future research would also benefit from examining message screening behaviour before employing delaying techniques, to further understand the factors involved in the decision to employ this technique. Investigating what factors are most important when deciding to delay a response may inform the design of more appropriate MIM app signals that would both aid the recipient in taking their time to respond, and remove the uncertainty felt by the sender during this delayed response.

Conclusion

The present study aimed to explore how individuals form expectations and perceptions of response time in MIM and explore how MIM app presence information such

as message and online statuses influence these expectations and perceptions. The present study concludes that expectations and perceptions of response time are influenced by a number of related factors, including the importance of message content to the sender, sender's knowledge of recipient current availability, MIM app signals of user activity, relationship to recipient, the sender's knowledge of recipient response tendencies and the number of recipients.

The results of this study also identified three ways in which a sender reacts to unmet response expectations, such as negative emotional reactions, an evaluation of the lack of response and sending a follow-up message. While not initially addressed as a research question, the results also demonstrated that the decision to respond to a message in a MIM app goes through a screening process which is influenced by a relationship between factors such as recipient availability, relationship with sender, effort needed to respond and the perception of the message content's importance.

The present study also concludes that when using a MIM app there is a social agreement of response, whereby opening a message is a formal acknowledgement of receipt to the sender, and leaves the recipient feeling socially obligated to respond instantly. In order to relieve themselves of this social agreement, individuals often employ delaying techniques which allow for more time to respond, and avoid appearing rude or ignorant. This social obligation however is lessened in a group, with members of a group diluting the responsibility to respond between them. However, the social agreement is violated when a sender's message is 'left on read', leaving the sender to perceive the delayed or non-response of a recipient based on the influential factors identified in this study.

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Appendices

Appendix A

Information Sheet

Study Title: Expectations and Perceptions of Response Time in Mobile Instant Messaging

Purpose of the Research
The current study will explore individuals' expectations and perceptions of response time in mobile instant messaging (MIM) applications. These applications, such as Whatsapp, Viber and Facebook Messenger allow mobile users to send real-time text, audio and visual based messages to individuals or groups of contacts at no cost, once the user has a mobile internet connection. In today's communication climate, be connected is now virtually constant and while there are plenty of social benefits to using MIM, individuals often report feeling overwhelmed and distracted by constant communication opportunities. As these applications now include real-time updates of when someone is available, typing, or read a message there can often be a an expectation to respond immediately or always be available. This study aims to explore how these expectations are formed, and how individuals feel about this pressure to be responsive.

Invitation
You are being invited to consider taking part in the research study 'Expectations and Perceptions of Response Time in Mobile Instant Messaging'. This study aims to explore the expectations and perceptions of response times in mobile instant messaging. As such, it is required that participants own a smartphone and regularly use MIM applications such as WhatsApp, Viber or Facebook Messenger. If you do not own a smartphone or use a MIM app unfortunately you cannot not take part in this study, but I would like to thank you for your interest.
This project is being undertaken by Jennifer Murphy.

Before you decide whether or not you wish to take part, it is important for you to understand why this research is being done and what it will involve. Please take time to read this information carefully and discuss it with friends and relatives if you wish. Please do not hesitate to ask me if there is anything that is unclear or if you would like more information.

Do I have to take part?
You are free to decide whether you wish to take part or not. If you do decide to take part you will be asked to sign two consent forms, one is for you to keep and the other is for the researcher's records.
You are free to withdraw from this study without giving reasons. Due to data analysis deadlines, if you wish to withdraw you must do so by informing the researcher at the email provided below, by March 31ˢᵗ 2018. Furthermore, your choice to take part in the study will have no impact on your grades, assessment or future studies.

If I take part, what do I have to do?
You are free to decide whether you wish to take part or not. If you decide to take part, you will be asked to give your contact details, so an interview time and location can be organized. At the scheduled time you will be asked to give your informed consent on two forms. The

interview will be conversational in nature and will take approximately 30 minutes, after which you will be debriefed and given the opportunity to ask any questions you may have.

What are the benefits (if any) of taking part?
By taking part, you will be enabling a body of research to be conducted, contributing to the advancement of scientific knowledge. You will be contributing to the researcher's completion of the Applied Psychology programme at the Institute of Art, Design and Technology.

What are the disadvantages and risks (if any) of taking part?
As the interview will take up to 30 minutes, you are being asked to give up some free time you have, however, there are no risks associated with taking part in this study.

How will information about me be used?
The interview conversation will be recorded using a digital voice recorder which will then be transcribed verbatim by the researcher. This data will be then analysed and interpreted by the researcher. You will not be identifiable from the data, but you may consent to be quoted under a pseudonym in the published version of this research. This data will not be kept for further use in future studies, but may appear in a future publication such as an academic journal.

Who will have access to information about me?
Only the researcher (Jennifer Murphy) and the supervisor of this study (Dean McDonnell) will have direct access to individual interview transcripts. The data may be also analysed by an additional researcher to validate findings, however this will be conducted at random and will only contain samples of the transcript.

During the interview process your data will be coded with a pseudonym and stored temporarily on a mobile recording device before being uploaded to a password protected computer. The data will then be securely deleted from the recording device. The data will be retained by the researcher for up to 5 years for publication purposes.

When the data is being disposed of, it will be done so in a secure manner. All electronic data will be securely deleted and all paper documentation will be shredded.

What will happen to the results of the study?
The results of this study will be used as part of a major research project for assessment at postgraduate level in MSc Cyberpsychology in the Dun Laoghaire Institute of Art, Design and Technology.

The results will be presented in both hard and soft copies. If you wish to view the results of the major research project, please contact me at the email provided below.

Who has reviewed the study?
This study has been approved by the Department of Technology and Psychology Ethics Committee (DTPEC).

What if there is a problem?
If you have a concern about any aspect of this study, you may wish to speak to the researcher who will do their best to answer your questions. You should contact Jennifer Murphy (N00123454@student.iadt.ie) or their supervisor, Dean McDonnell (dean.mcdonnell@iadt.ie)

Contact for further information
Jennifer Murphy: N00123454@student.iadt.ie
Dean McDonnell: dean.mcdonnell@iadt.ie

I would like to sincerely thank you for taking the time to read this information sheet and for taking part in this study.

Date:

Appendix B

Consent Form

CONSENT FORM

Title of Project: *Expectations and Perceptions of Response Time in Mobile Instant Messaging.*

Name of Researcher: *Jennifer Murphy*

Name of Supervisor: *Dean Mc Donnell*

Please tick box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.

2. I confirm that I am over 18

3. I understand that my participation is voluntary and that I am free to withdraw at any time.

4. I agree to take part in this study.

5. I understand that data collected about me during this study will be anonymised before it is submitted for publication.

6. I agree to the interview being audio recorded

7. I agree to be contacted by the researcher after the interview to clarify my transcript

Appendix C

Consent Form for Use of Quotes

CONSENT FORM (For use of quotes)
Title of Project: *Expectations and Perceptions of Response Time in Mobile Instant Messaging*
Name of Researcher: *Jennifer Murphy*
Name of Supervisor: *Dean McDonnell*

Please tick box

1   I agree for any quotes to be used under a pseudonym   ☐

2   I don't want any quotes to be used   ☐

3   I want to see any proposed quotes before making a decision   ☐

Appendix D

Demographic Information Sheet

DEMOGRAPHIC INFORMATION
Title of Project: Expectations and Perceptions of Response Time in Mobile Instant
Messaging
Name of Researcher: Jennifer Murphy
Name of Supervisor: Dean McDonnell

1. Do you own a smartphone?
(A mobile phone that performs many of the functions of a computer, typically having a touchscreen interface, Internet access, and an operating system capable of running downloaded apps)

Yes ☐

No* ☐

Unfortunately as this study requires participants to own a smartphone, if you do not, you cannot take part in this study, but thank you for your interest.

2. How often do you use messaging apps? (Facebook Messenger, WhatsApp, Viber etc.)

Everyday ☐

At least once a week ☐

At least once a month ☐

*Never ☐

Unfortunately as this study requires participants to use messaging apps regularly, if you do not, you cannot take part in this study, but thank you for your interest.

3. Age *(please tick the appropriate box)*

18-24 ☐

25-34 ☐

35-44 ☐

45+   ☐

3. Gender:

<div style="border:1px solid black; height:80px;"></div>

4. Please provide an email address if you wish to be contacted by the researcher to clarify what has been interpreted from your interview.

<div style="border:1px solid black; height:80px;"></div>

Appendix E

Debrief Form

Debrief

Thank you very much for taking part in this research study.

The study in which you just participated was designed to investigate individuals' expectations and perceptions of response time in mobile instant messaging .

If you have questions about this study or you wish to have your data removed from the study (up until March 31st 2018), please contact me at the following e-mail address: N00123454@student.iadt.ie. Alternatively, you may contact my supervisor, Dean McDonnell at IADT, at dean.mcdonnell@iadt.ie

We thank you sincerely for contributing and assure you that your data is confidential and anonymous, and if published the data will not be in any way identifiable as yours.

If you have been affected by the content of this study in any way, the organizations below may be of assistance:

Reach Out- http://ie.reachout.com/
Head Strong- https://www.headstrong.ie/

Appendix F

Interview Script

This interview schedule was used as a guide to the researcher during the interview process, questions varied between participants due to the flexible and conversational nature of the procedure.

	Objective
Introduction 3-5mins Thank you for taking the time to talk with me today. As outlined in the information sheet, I am conducting this research as part of my postgraduate MSc in Cyberpsychology at IADT Dun Laoghaire. For the next 20-30 minutes, I'm going to ask you some questions about your experience with mobile instant messaging apps such as WhatsApp, Facebook Messenger or Viber, and how you communicate through them. This is not a test, there are no right or wrong answers, and please be as honest as you possibly can. This conversation will be recorded, but if you feel uncomfortable at any point, please let me know and I can stop the recording. Do you have any questions before we begin? [start recording]	• Introduce purpose of interview • Outline structure of interview • Introduce topic of discussion

MIM Use 3-5mins
Can you start out by telling me about what instant messaging apps you use?
 	
And what do you use them for?
   • Why is that?
 	
How do you feel or think about using that app?
   • What makes you say that?
 	
Prompts:
Can you tell me more about that?
What makes you say that?
Why do you think that?
	• Warm-up
	
	• Understand MIM usage

Expectations of Response Time 3-5mins Imagine you sent a message via [messenger app] to one of your friends, when would you expect to get a reply?	• Gauge how response expectations are formed

• Why makes you say that?
 	
Can you tell me more about that, how do you know when you will get a reply?
   • Why is that?
 	
How do you feel when you don't get a reply within that time?
   • Why is that
 	
When you receive a message from a friend, when do you think you should reply?
   • Why is that
 	
Prompts:
Can you tell me more about that?
What makes you say that?
Why do you think that?
	• Uncover feelings about expectations and actual response time
	
	• Explore expectations for response

Perceptions of response time 3-5mins
Imagine you sent a message to your friend, and you didn't get a reply at all that day, how would you feel?
 	
   • Why do you say that?
 	
How about when you don't reply to a message?
 	
Have you ever not replied to a message on purpose?
   • Why was that?
   • Can you tell me what happened?
 	
Prompts:
Can you tell me more about that?
What makes you say that?
Why do you think that?
	• Explore perceptions of response time

Wrap-up and Debrief 2mins That's all the questions I had for you, unless you have anything further to add? Thanks again for taking the time to talk with me today,If you have questions about this study or you wish to have your data removed from the study (up until March 31st 2018), please contact me at the email address given in this form [give debrief].	• Wrap up and allow for final comments • Debrief participant

Appendix G

Ethical Approval Form A and Confirmation Email

DEPARTMENT OF TECHNOLOGY AND PSYCHOLOGY
ETHICAL APPROVAL FORM A

Title of project   Expectations and Perceptions of Response Time in Mobile Instant Messaging

Name of researcher   Jennifer Murphy

Email contact   N00123454@student.iadt.ie

Name of supervisor   TBC

		Yes	No	N/A
1	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	X		
2	Will you tell participants that their participation is voluntary?	X		
3	Will you obtain written consent for participation (through a signed or 'ticked' consent form)?	X		
4	If the research is observational, will you ask participants for their consent to being observed?			X
5	Will you tell participants that they may withdraw from the research at any time and for any reason?	X		
6	With questionnaires, will you give participants the option of omitting questions they do not want to answer?			X
7	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	X		
8	Will you debrief participants at the end of their participation (i.e., give them a brief explanation of the study)?	X		
9	If your study involves people between 16 and 18 years, will you ensure that passive consent is obtained from parents/guardians, with active consent obtained from both the child and their school/ organisation?			X
10	If your study involves people under 16 years, will you ensure that active consent is obtained from parents/guardians and that a parent/guardian or their nominee (such as a teacher) will be present throughout the data collection period?			X
11*	Does your study involve an external agency (e.g. for recruitment)?		X	
12	Is there any realistic risk of any participants experiencing either physical or psychological distress or discomfort?		X	
13	Does your project involve work with animals?		X	

14	Do you plan to give individual feedback to participants regarding their scores on any task or scale?			X	
15	Does your study examine any sensitive topics (such as, but not limited to, religion, sexuality, alcohol, crime, drugs, mental health, physical health)			X	
16	Is your study designed to change the mental state of participants in any negative way (such as inducing aggression, frustration, etc.)			X	
17	Will your project involve deliberately misleading participants in any way?			X	
18	Do participants fall into any of the following special groups?	People with learning or communication difficulties		X	
		Patients (either inpatient or outpatient)		X	
		People in custody		X	

If you have ticked **No** to any of questions 1 to 11, or **Yes** to any of questions 12 to 18 you should refer to the PSI Code of Professional Ethics and BPS Guidelines and consult with your supervisor without delay. You will need to fill in Ethical Approval Form B and submit it to the Department of Technology and Psychology Ethics Committee (DTPEC) in place of this form.

There is an obligation on the researcher to bring to the attention of the DTPEC any issues with ethical implications not clearly covered by the above checklist.

I consider that this project has **no** significant ethical implications to be brought before the DTPEC. I have read and understood the specific guidelines for completion of Ethics Application Forms. I am familiar with the PSI Code of Professional Ethics and BPS Guidelines (and have discussed them with my supervisor).

Signed _Jennifer Murphy_ Print Name _JENNIFER MURPHY_ Date <u>11/05/2017</u>
Applicant

I have discussed this project with my student, and I agree that it has no significant ethical implications to be brought before the DTPEC.

Signed _____TBC_____ Print Name __TBC_____ Date _____
Supervisor

REPLY   REPLY ALL   FORWARD

Grainne Kirwan   Mark as unread
Thu 01/06/2017 13:07
Inbox

To: Jennifer Murphy;

Dear Jennifer

The Department ethics committee has reviewed your Ethics A form, and approved it at their recent meeting.

Please note that you may not proceed with data collection until a supervisor is allocated in September.

Best wishes

Grainne

Dr. Gráinne Kirwan CPsychol

Lecturer in Psychology and Programme Co-Chair MSc in Cyberpsychology
Co-Chair of the 22nd Annual Cyberpsychology, Cybertherapy, & Social Networking Conference
Chair of the Special Interest Group in Media, Art, & Cyberpsychology (SIGMAC) of the Psychological Society of Ireland
Guest Editor of the Psychology of Cybercrime special issue of Cyberpsychology, Behavior, & Social Networking Journal

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Appendix H

Excerpts from Coded Transcript

A	B	C	D	E
PP	**Original Transcript**	**Data to be Coded**	**Category/Sub-Theme**	**Theme**
1	Q. Let's imagine you sent a message to a friend using whatsapp, when would you expect to get a reply from them? It depends on the friend. And if they have read it or not. And if I know what's going on with them or not. Dya know what I mean, so it really just depends on the context.			
		It depends on the friend.	1. Relationship with Sender	**Factors Influencing Expectations and Perceptions**
		And if they have read it or not.	4. MIM app signals of user activity	**Factors Influencing Expectations and Perceptions**
		And if I know what's going on with them or not. Dya know what I mean, so it really just depends on the context.	3. Knowledge of Recipients' Current Availability	**Factors Influencing Expectations and Perceptions**
1	Q. And how do you feel about knowing when someone has read your message? Most of the time I don't care, but like it depends on what you're asking, like if you're asking someone to do something for you, or to be somewhere or if it's a new person, I'd probably get a bit paranoid about if they've read it and not responded. But if it's someone I'm comfortable with then I just assume that oh they're busy, they'll get back to me when they're ready.			
		Most of the time I don't care, but like it depends on what you're asking like if you're asking someone to do something for you, or to be somewhere	2. Importance of Message Content to Sender	**Factors Influencing Expectations and Perceptions**
		or if it's a new person/ But if it's someone I'm comfortable with then	1. Relationship with Sender	**Factors Influencing Expectations and Perceptions**
		I'd probably get a bit paranoid about it .	16. Negative Emotional	**Reactions to unmet expectations**
		if they've read it and not responded.	4. MIM app signals of user activity	**Factors Influencing Expectations and Perceptions**
		I just assume that oh they're busy, they'll get back to me when they're ready.	17. Evaluation of unresponsiveness	**Reactions to unmet expectations**

A	B	C	D	E
PP	**Original Transcript**	**Data to be Coded**	**Category/Sub-Theme**	**Theme**
7	Q. What if they were online and they had read your message? I wouldn't be particularly.... like if it was something kind of inconsequential, like 'did ya see this?' or 'have you seen that movie in the cinema?' or whatever, I would think, like they're busy they'll get back to me later. But if it was something important like 'can you let me in I'm outside?' or something like that I'd expect a much quicker reply, obviously that's an extreme example but like if you were text someone being like 'what did you get mam for her birthday, I'm in the shopping centre now' and they read your text and they didn't reply, I'd text them again to be like 'hello can you answer me please?'. But I'm quite impatient, so it could just be me.			
		I wouldn't be particularly.... like if it was something kind of inconsequential, like 'did ya see this?' or 'have you seen that movie in the cinema?' or whatever But if it was something important like 'can you let me in I'm outside?' or something like that I'd expect a much quicker reply, obviously that's an extreme example but like if you were text someone being like 'what did you get mam for her birthday, I'm in the shopping centre now'	2. Importance of Message Content to Sender	**Factors Influencing Expectations and Perceptions**
		I would think, like they're busy they'll get back to me later.	17. Evaluation of unresponsiveness	**Reactions to unmet expectations**
		and they read your text and they didn't reply	4. MIM app signals of user activity	**Factors Influencing Expectations and Perceptions**
		I'd text them again to be like 'hello can you answer me please?'	8. Follow-Up after No Response	**Reactions to unmet expectations**

Appendix I

Theme Definitions and Coding System

Primary Coding System created after first pass of analysis

Theme	Description/Definition
Expectations and Perceptions of Response Time	The expectations and perceptions of response time are dependent on multiple related factors including relationship, message content, knowledge of recipient's current availability and their response tendencies as well as the number of people that receive the message.
Sub-Theme	**Description/Definition**
1.Sender Relationship with Recipient	The type of relationship with a recipient and the level of familiarity, comfortableness and rapport is influential in forming expectations and perceptions of response time.

Category	Codes	
1. 1 Relationship Type		The type of relationship to the recipient such as friend, family, romantic and professional.
1.11	**Friend**	Reference to a friend
1.12	**Family**	Reference to a family member such as parent or sibling.
1.13	**Romantic**	Reference to a romantic partner or potential romantic partner or someone for whom there is romantic interest.
1.14	**Professional**	Reference to anyone with whom one has a professional relationship including colleague, boss and employer.
1.2. Relationship Level		The level of relationship with the sender, such as intimate, close, casual, or acquaintance.
1.21	**Intimate**	Reference to having a very close and intimate relationship or high level of rapport with an individual or individuals, may refer to as 'best friend/s'
1.22	**Close**	Reference to having a close relationship and rapport with an individual/individuals, may refer to as 'close friend/s'

1.23	**Casual**	Reference to having a casual relationship with little rapport with an individual or group, may refer to as 'friend I don't talk to much'
1.24	**Acquaintance**	Reference to knowing an individual or group but having little to no rapport with them, may refer to as 'someone I don't know that well'

Sub-Theme		Description/Definition
2.Importance of Message Content to Sender		The sender's evaluation of importance or urgency of the message content or the significance of the message topic influences the sender's expectations and perceptions of response time

Category	Codes	
2.1 Content Topic		The topic of content sent in a message including something serious, casual, or trivial.
2.11	Serious	Reference to message content being serious or emotionally meaningful
2.12	Casual	Reference to message content being casual, 'everyday', chit-chat, chinwag or banter
2.13	Trivial	Reference to message content being trivial, silly, stupid including memes, gifs and funny videos.
2.2 Question type		The type of question being asked in a message
2.1	Specific Event	Reference to asking a specific question to an individual that event based, such as "do you want to come to the party?" or "are you coming to dinner?"
2.2	Favour	Reference to asking a favour of an individual or to a group in a message
2.3	Touching base	Reference to asking general questions about an individual or groups' day/health/wellbeing, such as "how it's going?" , "how are you?" or "what are you up to?"
2.3 Question Urgency		Reference to the urgency of a question in a message that requires an answer from the recipient
2.31	Urgent	Reference to a question in a message that requires a response from the recipient immediately
2.32	Time- Sensitive	Reference to a question in a message that requires a response from the recipient in a timely manner so the sender can make a decision but that isn't urgent
2.33	Non-Urgent	Reference to a question in a message that does not require a response from the recipient within a certain timeframe

Sub-Theme		Description/Definition
3.Sender's Knowledge of Recipients' Current Availability		An understanding, awareness of the message recipients' current situation, location, context and availability offline or lack thereof, influences expectations and perceptions of response time
3.1 Context & Location		Reference to a recipient being in a location such as another country, at home, or at work.
3.11	Abroad	Reference to recipient or group being abroad or resident in another country
3.12	At work	Reference to an individual or group being at work
3.13	At home	Reference to a recipient or group being at home
3.2. Current Availability		Reference to recipient or group's current availability, such as being busy, being occupied or engaged, unavailable or available offline presently
3.21	Busy	Reference to a recipient or group being busy, unavailable or "doing something else"
3.22	Available	Reference to an individual or group being available, free or ready
Sub-Theme		**Description/Definition**
4.MIM app signals of user activity		The signals a MIM app produces about a user's activity including online status and message status updates such as read receipts are described as having an influence on expectations and perceptions of response time
4.1 Online Status		Reference to expectations and perceptions of response time being influenced by a recipient being offline or online, indicated by information provided by an application such as "last seen", 'online'
4.11	Online	
4.12	Last Seen or Active	
4.13	Offline or inactive	
4.2 Message Status		Reference to expectations and perceptions of response time being influenced by message being 'read' or 'read' 'opened' or 'delivered' as indicated by an application such as "blue ticks", "double ticks"
4.21	Read	
4.22	Not read	

Sub-Theme		Description/Definition
5.Sender's Knowledge of Recipients' Response Tendencies		Knowledge and previous experience with a recipient's usual response time, response tendencies or habits is described as being influential in forming expectations and perceptions of response time
5.1 Response Tendencies		Reference to knowing a recipient's usual response tendencies, such as being usually fast or slow to respond, or reference to a recipient being usually unresponsive.
5.11	Fast	
5.12	Slow	
5.13	Unresponsive	
5.2 Online Availability Habits		Reference to recipient's usual online activity habits, including always online or connected, being unavailable/available for messaging consistently
Sub-Theme		Description/Definition
6. Number of recipients		The expectations and perceptions of response time are influenced by the number of recipients, with faster response expected within a group over a 1:1 message exchange.
6.1 Group Expectations		Senders expect a faster response from a group over an individual.
6.2 Delayed Response in Groups		Senders perceive a non-response or delayed response in a group as more concerning, more anxiety inducing or evokes paranoia more so than on an individual basis.

Additional coding added after first review of themes, sub-themes, categories and codes.

Theme	Description/Definition
Response Evaluation	When a message is received is goes through an evaluation process whereby the decision of when to respond is dependent on a number of factors including relationship, message content, recipient current availability, the effort needed to respond and whether it is received in a group or on an individual basis.
Sub-Themes	Description/Definition
7.Relationship with Sender	Decision on when to respond is influenced by who the message is from and the recipient's relationship with the sender
8.Perception of Message Content's Importance	Decision on when to respond is influenced by the recipient's perception of the importance of message content or topic urgency

9. Recipient Availability	Decision on when to respond is influenced by recipients' availability when message is received
10.Effort for Response	Decision on when to respond is influenced by how much effort is needed to respond including mood, energy and thinking involved in formulating a response

Theme	Description/Definition
Social Agreement/Obligation to respond	Existence of a social obligation attached to simply opening a message, a formal acknowledgement of receiving a message and an uneasiness of leaving a message 'on read', which often results in employing strategies to delay response, to avoid appearing rude or ignorant. This obligation is then lessened for groups, where there is a dilution of responsibility.
Sub-Theme	Description/Definition
11. Politeness & Etiquette	Believing it is polite to respond once a message has been opened, or to not respond would be rude
12. Pressure from MIM app signals of activity	Feeling pressured to respond because of MIM app signals such as online status and read receipts
13. Delaying Techniques	Using techniques such as not opening a message, to avoid generating read receipts in order to delay the obligation to respond
14. Delayed Response with Excuse	Explaining or justifying one's delayed response with an excuse to why a message was not responded to instantly
15. Dilution of Responsibility	Feeling less pressure or obligation to respond when a message is received in a group.

Theme	Description/Definition
Reactions to unmet expectations	When a response time expectation is not met, the sender reacts either negatively feeling ignored, frustrated or annoyed, or assumes the recipient is

		otherwise pre-occupied, unavailable, or doing something more important, or sends a message to prompt response.
Category	**Codes**	**Description/Definition**
16. Negative Emotional Reaction		No response elicits a negative emotional reaction, such as frustration, irritation, feelings of being ignored, paranoia or annoyance
16.1	**Annoyance or Frustration**	
16.2	**Anxiety or Paranoia**	
16.3	**Feeling Ignored**	
Category		**Codes**
17. Evaluation of unresponsiveness		No response is questioned, evaluated and deductive reasoning applied, such as an assumption of unavailability, or recipient being pre-occupied.
17.1	Assumptions of Unavailability	Assuming a delayed response, or unmet expectation of response time is due to the recipient being unavailable or preoccupied
17.2	Questioning Unresponsiveness	Questioning why a recipient hasn't responded, such as 'what are they doing?'
18. Follow-Up after No Response		Sending a follow-up message asking why a response wasn't received, or re-sending the same message when response not received in expected timeframe

Theme	**Description/Definition**
Choosing communication medium based on recipient availability	When an individual wants to communicate a message, they choose the communication medium where the know the recipient to be most available to respond, this includes choosing phone call over MIM, and choosing a particular MIM app over another
Sub-Theme	**Description/Definition**

19. Using Different MIM apps for different people	Using more than one MIM app, or more than one social media app for instant messaging including WhatsApp, Viber, Facebook Messenger, Instagram and Snapchat, Slack for different individuals or groups.
20. Choosing Alternative Communication Medium	Choosing another medium of communication when MIM does not elicit a response within the expected timeframe, or when a message is too important to wait for a response on MIM app.

Category of Codes		Description/Definition
21. Benefits of Whatsapp		Benefit of or preference for WhatsApp over other MIM apps as it is free, easy to use, personal and more secure.
21.1	Free	Benefit of WhatsApp is that it is free to use
21.2	Easy to use	Benefit of WhatsApp is how easy it is to use
21.3	Personal	Benefit of WhatsApp is that its more personal than Facebook Messenger
21.4	Secure	Benefit of WhatsApp is that it is more secure in terms of data protection than Facebook Messenger
22. Visibility of Availability is Beneficial		Seeing the benefit of online status s as a way to understand who is available to chat, using online status as an indicator of offline behaviour such as seeing if someone has returned home, if someone is travelling based on their last seen status.
23. Facebook Messenger Benefits		Turning off read receipts and/or last seen on a MIM app
23.1	Availability Accuracy	Benefit to Facebook Messenger is that it is more accurate for seeing who is available than WhatsApp or Viber
23.2	For Business	Benefit of Facebook Messenger over other MIM apps is the ability to contact Businesses for complaints

24. Privacy Concerns	Feeling concerned for personal privacy by having online status visible
25. Preference for individual conversations over group	Reference to preferring 1:1 message exchange over groups in MIM apps
26. Using Read Receipts to Make a point	Using the generation of read receipts to make a point, to express disagreement or send a negative non-verbal message to the sender, by purposely opening the message and not responding.

Appendix J

Legend for Inter-Rater Reliability

CODE	THEME/CATEGORY LABEL	DEFINITION
1.	Sender Relationship with Recipient	The type of relationship with a recipient and the level of familiarity, comfortableness and rapport is influential in forming expectations and perceptions of response time.
2.	Importance of Message Content to Sender	The sender's evaluation of importance or urgency of the message content or the significance of the message topic influences the sender's expectations and perceptions of response time
3.	Sender's Knowledge of Recipients' Current Availability	An understanding, awareness of the message recipients' current situation, location, context and availability offline or lack thereof, influences expectations and perceptions of response time
4.	MIM app signals of user activity	The signals a MIM app produces about a user's activity including online status and message status updates such as read receipts are described as having an influence on expectations and perceptions of response time
5.	Sender's Knowledge of Recipients' Response Tendencies	Knowledge and previous experience with a recipient's usual response time, response tendencies or habits is described as being influential in forming expectations and perceptions of response time
6.	Number of recipients	The expectations and perceptions of response time are influenced by the number of recipients, with faster response expected within a group over a 1:1 message exchange.
7.	Relationship with Sender	Decision on when to respond is influenced by who the message is from and the recipient's relationship with the sender
8.	Perception of Message Content's Importance	Decision on when to respond is influenced by the recipient's perception of the importance of message content or topic urgency
9.	Recipient Availability	Decision on when to respond is influenced by recipients' availability when message is received
10.	Effort Needed for Response	Decision on when to respond is influenced by how much effort is needed to respond including mood, energy and thinking involved in formulating a response
11.	Politeness & Etiquette	Believing it is polite to respond once a message has been opened, or to not respond would be rude

12.	Pressure from MIM app signals of activity	Feeling pressured to respond because of MIM app signals such as online status and read receipts
13.	Delayed Response with Excuse	Explaining or justifying one's delayed response with an excuse to why a message was not responded to instantly
14.	Delayed Response with Excuse	Explaining or justifying one's delayed response with an excuse to why a message was not responded to instantly
15.	Dilution of Responsibility	Feeling less pressure or obligation to respond when a message is received in a group.
16.	Negative Emotional Reaction	Responding negatively to an unmet expectation with feelings of frustration, annoyance, irritation or feeling ignored or unattended to.
17.	Evaluation of Unresponsiveness	Evaluating why a recipient has not responded, applying deductive reasoning to make assumptions as to why someone has not responded within the expected timeframe such as unavailability and preoccupation
18.	Using Different MIM apps for different people	Using more than one MIM app, or more than one social media app for instant messaging including WhatsApp, Viber, Facebook Messenger, Instagram and Snapchat, Slack for different individuals or groups.
19.	Choosing Alternative Communication Medium	Choosing another medium of communication when MIM does not elicit a response within the expected timeframe, or when a message is too important to wait for a response on MIM app.
20.	Benefits of WhatsApp	Benefit of or preference for WhatsApp over other MIM apps as it is free, easy to use, personal and more secure.
21.	Visibility of Availability is Beneficial	Seeing the benefit of online status s as a way to understand who is available to chat, using online status as an indicator of offline behaviour such as seeing if someone has returned home, if someone is travelling based on their last seen status.
22.	Facebook Messenger Benefits	Turning off read receipts and/or last seen on a MIM app
23.	Privacy Concerns	Feeling concerned for personal privacy by having online status visible
24.	Preference for 1:1	Reference to preferring 1:1 message exchange over groups in MIM apps
25.	Intentionally Using Read Receipts to Make a point	Purposely using the generation of read receipts to make a point, to express disagreement or send a negative non-verbal message to the sender, by purposely opening the message and not responding.

26.	Follow-up after no response	Sending a follow-up message asking why a response wasn't received, or re-sending the same message when response not received in expected timeframe

Appendix K

SPSS Output for Inter-Rater Reliability

Case Processing Summary

| | Cases | | | | | |
| | Valid | | Missing | | Total | |
	N	Percent	N	Percent	N	Percent
Researcher * Rater	87	100.0%	0	0.0%	87	100.0%

Researcher * Rater Crosstabulation

Count

| | | Rater | | | | | | | | | | | |
		0	1	2	3	4	5	6	7	8	9	10	11
Researcher	0	0	1	0	0	0	0	0	0	0	0	0	0
	1	0	6	0	0	0	0	0	0	0	0	0	0
	2	0	0	4	0	0	0	0	0	0	0	0	0
	3	0	0	0	4	0	0	0	0	0	0	0	0
	4	0	0	0	0	4	0	0	0	0	0	0	0
	5	0	0	0	0	0	4	0	0	0	0	0	0
	6	0	0	0	0	0	0	2	0	0	0	0	0
	7	0	1	0	0	0	0	0	3	0	0	0	0
	8	0	0	3	0	0	0	0	0	2	0	0	0
	9	1	0	0	0	0	0	0	0	0	4	0	0
	10	0	0	0	0	0	0	0	0	0	0	5	0
	11	0	0	0	0	0	0	0	0	0	0	0	3
	12	1	0	0	0	0	0	0	0	0	0	0	0
	13	0	0	0	0	1	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0	0	0	0	0	0
	15	0	0	0	0	0	0	0	0	0	0	0	0
	16	0	0	0	0	0	0	0	0	0	0	0	0
	17	1	0	0	0	0	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0	0	0	0	0	0
	19	0	0	0	0	0	0	0	0	0	0	0	0
	20	0	0	0	0	0	0	0	0	0	0	0	0
	21	0	0	0	0	0	0	0	0	0	0	0	0
	22	0	0	0	0	0	0	0	0	0	0	0	0
	24	0	0	0	0	0	0	0	0	0	0	0	0
	25	0	0	0	0	0	0	0	0	0	0	0	0
	26	0	0	0	0	0	0	0	0	0	0	0	0
Total		3	8	7	4	5	4	2	3	2	4	5	3

12	13	14	15	16	17	18	19	20	21	22	24	25	26	Total
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5	0	0	0	0	0	0	0	0	0	0	0	0	0	6
0	4	0	0	0	0	0	0	0	0	0	0	0	0	5
0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
0	0	0	0	0	2	0	0	0	0	0	0	0	0	3
0	0	0	0	0	0	5	0	0	0	0	0	0	0	5
0	0	0	0	0	0	0	3	1	0	0	0	0	0	4
0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
5	5	3	3	1	2	5	4	3	2	1	1	1	1	87

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Measure of Agreement	Kappa	.843	.040	36.121	.000
N of Valid Cases		87			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.