Paws for Thought:
Trust in the Shared Economy

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Declaration

By submitting this work, I declare that this work is entirely my own except those parts duly identified and referenced in my submission. It complies with any specified word limits and the requirements and regulations detailed in the assessment instructions and any other relevant programme and module documentation. In submitting this work I acknowledge that I have read and understood the regulations and code regarding academic misconduct, including that relating to plagiarism, as specified in the Programme Handbook. I also acknowledge that this work will be subject to a variety of checks for academic misconduct.

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Abstract

The objective of this research was to understand trust in the sharing economy and to explore if and how it differed from trust in related areas like e-commerce. Additional aims included investigating the effect of dispositional trust, and discovering which profile elements people look for when making a decision about trusting someone they meet online.

The findings of this research help to understand how affect based trust cues like star ratings and reviews can be used in the shared economy to increase reports of trustworthiness. This effect was found for trust ratings of people and websites. This research found that dispositional trust did not correlate with trust scores given. The research also found that in the context of a dog sharing network, participants were interested in the person's background, experience, intentions and community indicators such as reviews.

Keywords: shared economy; collaborative consumption; online trust; trust; affective trust cues

Contents

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1 INTRODUCTION

In our recent past, it would have been unlikely that the general public would have let complete strangers into their homes to stay the night, into their cars for a lift to work, or into their gardens to grow vegetables. However, this is what has happened with the rise of sharing economy businesses (often also called "collaborative consumption") such as Airbnb, BlaBlaCar, and LandShare. Other types of sharing networks such as Freecycle or SwapShop allow members to give away or trade unwanted items such as old DVDs and clothes via the internet with strangers.

Figure 1. shows "heatmaps" comparing the number of properties listed on Airbnb in the same area of San Francisco in 2008 (left) and 2011 (right). Brighter blocks have more listings and darker blocks have fewer.

Figure 1: how use of possibly the most iconic shared economy network, Airbnb, grew between 2008 and 2011.

An increasing number of people are participating in the shared economy and the industry is worth approximately $26 billion. However, one of the contributing factors in engaging with the sharing community is to share money. As an example, each car sharing vehicle replaces up to thirteen privately owned vehicles, and 25% of members forgo vehicle purchases they would otherwise have made (Dutzik et al, 2013). While the recent emergence of the shared economy is exciting, many would argue that the concept is not new:

> *"The irony is that these ideas are actually taking us back to old market principles and collaborative behaviours that are hard-wired in all of us. They're just being reinvented in ways that are relevant for the Facebook age"*
>
> Botsman (2010)

This "rediscovery" of community-based behaviours naturally brings about questions of reputation. It could be argued that reputation is a measure of how much a community trusts someone. In business-to-consumer transactions, lack of trust has been identified as the major barrier to the adoption of online shopping (Chang et al., 2013). Similarly, Davis (2012) found that trust issues are a major reason stopping people engaging with the shared economy.

There is a wealth of academic literature on trust, but as it is often conflicting. Scholars from disciplines such as human-computer interaction, psychology, politics, economics, philosophy and sociology (to name but a few) have tried to define trust and have found it extremely difficult. In an online context, the majority of the academic work has been carried out in e-commerce. Researchers

such as Giddens (1990) argue that in an online context, purchasing processes (among others) have become "dis-embedded". That is to say that the indicators of trust that one may take for granted in a face-to-face transaction like facial expression, handshake, eye contact, are all missing. As such, vendors aim to use "virtual re-embedding" processes (Riegelsberger and Sasse, 2003) to insert trust cues. These trust cues vary and could include items such as third part seals, or more social elements such as reviews and reputation systems.

1.1 OBJECTIVES

The fundamental objective of this project was to investigate and understand trust in the shared economy, with a view to contributing to a new area of research. The project can be broken down into the following objectives, designed to achieve this aim:

- OB1: Investigate whether trust cues which are regularly used in e-commerce (and related domains) can be applied to the shared economy
- OB2: Evaluate the effect of trusting beliefs on behaviour in the shared economy
- OB3: Explore information seeking behaviour and its implications for trust in the shared economy

The focus of the first objective was to begin to investigate the extent to which existing knowledge of trust can be applied to the shared economy. The reasoning behind the second objective was to discover whether core trust beliefs have an impact on levels of trust in the shared economy. Findings in related domains such as e-commerce have been mixed. However, the personal nature of the sharing economy could have a significant impact. The final objective is where this project could make a novel contribution to the field. While these objectives may seem unconnected, they are most powerful when considered together. The three objectives were specifically chosen because they could be seen to represent the past, present and future of trust research in human-computer interaction. The first objective looks at whether existing research can be taken forward, the second aims to focus on a question for which there is currently no accepted answer. The final objective will make a novel contribution to the body of research already available and hopefully push understanding forward.

1.2 RESEARCH FOCUS

In order to achieve these objectives, this project will use the shared economy network, BorrowMyDoggy as an example. BorrowMyDoggy describes itself as:

> *"a trusted community where local dog lovers help take care of dogs for walkies, playdays, weekends and happy holidays"*
>
> BorrowMyDoggy (2014)

While the idea of sharing a pet dog may seem novel, it is one that is growing more and more popular. In cities such as London and New York where there are a high proportion of people renting homes (where pets are often not allowed), networks such as BorrowMyDoggy are potentially the only way that some people can have contact with an animal. Figure 2 shows the current BorrowMyDoggy homepage.

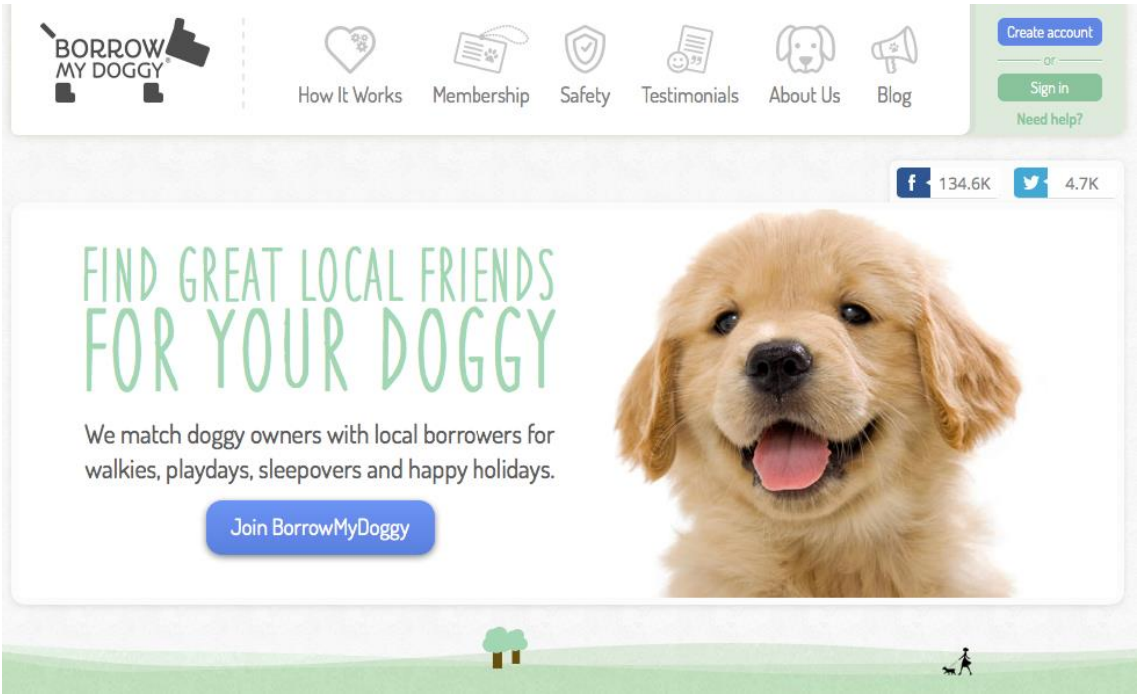


Figure 2: The current BorrowMyDoggy.com homepage

To achieve the aforementioned objectives, the following research questions will be answered:

- RQ1: What effect (if any) do star ratings and verification have on the perception of peer and site trustworthiness in a sharing economy website?
- RQ2: Can the participants' general levels of trust make a difference to trust ratings? If so, how?
- RQ3: What profile elements help dog owners to make a decision about whether to trust a potential borrower?

1.3 Benefits of Research

By answering these questions, the researcher aims to make a useful contribution and improve understanding of trust in the shared economy. The beneficiaries of this work include:

- *The academic community* – who can use the findings and questions raised as a result of this worth to further understanding of trust in the shared economy and how it relates to related domains such as e-commerce
- *Software and web designers* – who can use the findings to help them decide which trust building elements to use in their work
- *The public as a whole* – who can benefit from increased understanding of how shared economy networks and other online communities try to gain their trust

1.4 EXAMPLES OF SHARED ECONOMY NETWORKS

See below for a short list of examples of the kinds of shared economy networks that exist:

Car and ride sharing
City Car Club www.citycarclub.co.uk
BlaBlaCar www.blablacar.com
LiftShare www.liftshare.com
National CarShare
www.nationalcarshare.co.uk
Whipcar www.whipcar.com

Fashion rental
Girl Meets Dress www.girlmeetsdress.com
GetAhead Hats www.getaheadhats.co.uk
One Night Stand www.onenightstand.co.uk

Marketplaces
Craigslist http://london.craigslist.co.uk
Gumtree www.gumtreee.com
Freecycle www.uk.freecycle.org
eBay www.ebay.co.uk
Etsy – www.etsy.com

Travel
Airbnb www.airbnb.co.uk
Couchsurfing www.counchsurfing.org
Crashpadder www.crashpadder.com

Swap sites
Barter Swap www.u-exchange.com
Swapshop www.swapshop.co.uk
BookHopper www.bookhopper.co.uk
SwapStyle www.swapstyle.com

Bike Sharing
Barclays Cycle Hire www.tfl.gov.uk
Byke www.byke.mobi

Peer-to-peer social lending
Zopa http://uk.zopa.com
Quackle www.quackle.co.uk
The Hire Hub www.thehirehub.co.uk

Crowdfunding
Fundbreak UK www.fundbreak.co.uk
Kickstarter www.kickstarter.com

Gardens and parking spaces
Landshare www.landshare.net
Yours2Share www.yours2share.com
Parkatmyhouse w
ww.parkatmyhouse.com
Grow Your Neighbours Own
www.growyourneighboursown.org.uk

Pets
BorrowMyDoggy www.borrowmydoggy.com
City Dog Share www.citydogshare.org
Part Time Pooch www.parttimepooch.com

Household chores
TaskRabbit www.taskrabbit.co.uk

Taxis
www.uber.com

1.5 REPORT FORMAT

This report begins with a review of existing literature to help the reader understand the context of the research. Gaps and conflicting research results are highlighted to show the relevance and requirement for further research. The research method is discussed in detail, including methods of data analysis. This is then followed by two results and discussion sections. The first breaks down the more quantitative focus of the research (RQ1 and RQ2) and the second deals with the exploratory qualitative aspect (RQ3). The report finishes with a section on conclusions, evaluation and a reflection on the project.

Appendices are included in this report and the USB stick supplied separately contains other supporting data such as interview recordings and SPSS outputs.

2 LITERATURE REVIEW

2.1 THE SHARED ECONOMY

This section will explore the concepts of sharing and collaborating being innate human characteristics, then investigate possible reasons behind the recent rise of the sharing economy, and some different types of sharing economy networks, before introducing the vital concept of trust. Investigating trust in the shared economy from the perspective of human-computer interaction is a novel research area.

2.1.1 Sharing as a natural human behaviour

Some researchers have argued that the idea of sharing is instinctive, and a natural human attribute. For thousands of years humans grouped together in tribes and communities for security, to ensure food, land and other resources. In her pivotal book, Rachel Botsman (2010) argues that cooperative efforts continued to a greater and lesser extent throughout history and argues that this mutualism (helping others) and reciprocity (positive actions being rewarded with positive actions in return) are:

> *"hardwired human behaviours that serve as the basis for human cooperation and are the core of our existence"*

Warneken and Tomasello (2013) found that children up to the age of around 3.5 reliably shared with a partner, no matter whether that partner had previously shared with them, or refused to. This supports the idea that children's pro-social behaviour emerges spontaneously. Past the age of 3.5, the children were more likely to share only with those who had previously shared with them. This idea of reciprocity mediating behaviour seems to remain into adulthood, and may be linked to adopting societal norms.

Despite the norms and values of reciprocity, throughout history there have been examples of people sharing things and working collaboratively on a voluntary basis. A relatively recent example of this is the operating system, Linux. When Linus Torvald announced his idea (with its origins in a GNU project at MIT), he received thousands of responses through the Internet from people all over the world. In the early 1980s as the number of Internet users was fewer than 10% of the modern equivalent (Shirky, 2008).

Additionally, online sharing through photo sharing sites such as Flickr, or social media outlets like Twitter and Facebook could be seen as examples of people sharing personal information and content. This is an interesting phenomenon, and not one that shows any signs of slowing down. In fact, every minute, 25 hours worth of YouTube videos are uploaded (Botsman, 2010).

2.1.2 Types of shared economy network

Botsman (2010) has identified three main types of shared economy network:

- Redistribution markets
- Collective lifestyles
- Product-service systems

Redistribution markets

Used, or pre-owned items are moved from where they are no longer required to somewhere, or someone, where they are. These networks are increasingly thought of as the fifth 'R' -- reduce, reuse, recycle, repair and redistribute because they stretch the lifecycle of a product and thereby reduce waste.

Collaborative lifestyles
Resources like money, skills and time are shared. Landshare is a particularly good example of a collaborative lifestyle network. This scheme matches people with spare space in a back garden, with would-be growers, and together they grow their own food.

Product-service systems
A user pays for the benefit of the product without needing to own the product outright, i.e. they access rather than own. This idea is particularly powerful for items that have high-idling capacity such as cars, spare bedrooms and garden equipment.

These three types are a useful way of categorising shared economy businesses. However, there are some that do not easily fall into only one of these categories. The focus of this research, BorrowMyDoggy, is one such business. It most easily falls under collective lifestyles, with dog owners and dog borrowers reaching a mutually beneficial agreement and collectively owning a dog. However, dogs are expensive in terms of food, health and insurance so could potentially fall into a sub-category of product-service systems.

2.1.3 The rise of the shared economy

Botsman (2010) focused on the following to explain the rise of what she calls collaborative consumption:

- A renewed belief in the importance of community
- A torrent of peer-to-peer social networks and real-time technologies
- Pressing unresolved environmental concerns
- A global recession which has fundamentally shocked consumer behaviours

Botman's points are sound, but other research not only includes them, but also adds other substantial ideas. For instance, Owyang (2013) believes that the rise of the sharing economy is inextricably linked with societal shifts, the state of the global economy and advances in technology. These are shown in Figure 3.

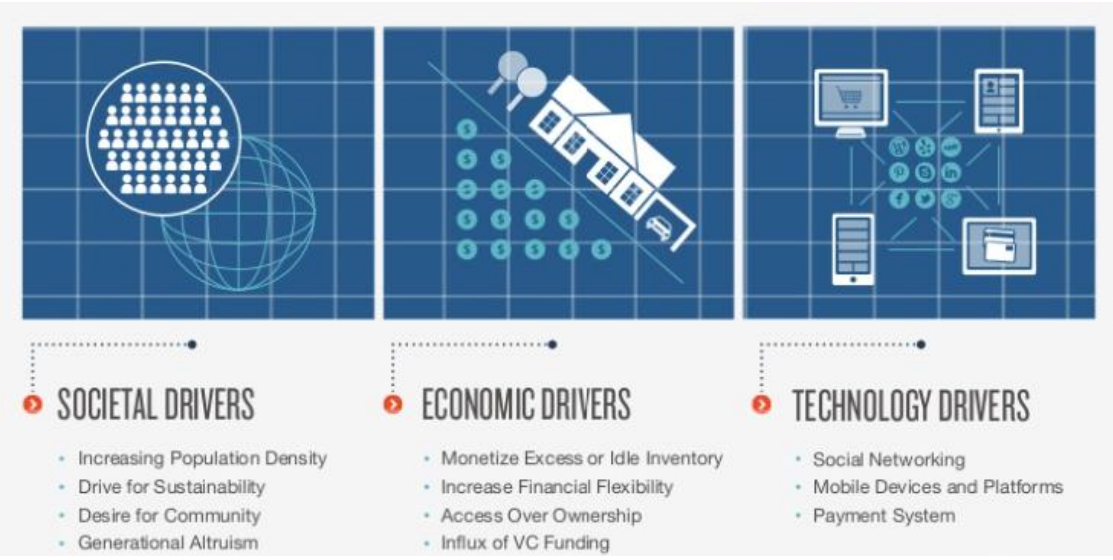


Figure 3: Drivers of the collaborative consumption (Owyang, 2013)

Botsman (2010) provides more focus on a consumer reaction to the global recession than Owyang (2013), which is not surprising as the latter is a business focused report which does not explicitly consider consumers' emotions. Botsman's emphasis is practical and relevant to the population and is there, and is reflected in the discussion of economic drivers below.

Societal drivers

At least in the Western world, we have been living in an individualistic world of hyper-consumption for the fifty years or so. Thus, it is not surprising that we have shifted towards more of an acceptance of disposable, throwaway products. In her book on the social history of trash, Strasser (1999) connects disposability and women's liberation. For the 1950s housewife who had recently entered the workplace for the first time, disposable products such as nappies, paper plates and aluminium cooking trays were seen as convenient and even a "metaphor for freedom". This demonstrates that the disposable nature of many products or even lifestyles was not purely due to technological advances, and should not be separated from the politics and societal changes of the time.

As the population of the Earth rises, it becomes increasingly difficult to support such lifestyles in a sustainable way. The more than seven billion people living on the planet currently are using fuel, land, and food at an alarming rate. This will only be exacerbated by the population increasing as it expected to. Gansky summarises the predicament is the thus:

> *"Simple math suggests that in order to have a peaceful, prosperous, and sustainable world, we are going to have to do a more efficient job of sharing the resources we have."*
>
> Gansky (2010)

The desire for community is an important factor in the rise of the shared economy. As the world becomes more densely populated, there are more people living closer together than ever. However, rather than leading to an increased sense of community, it has led to people becoming more inwardly focussed and even knowing the names of their neighbours. In contrast, the emerging trend is for holidaymakers and business travellers to use services such as Airbnb. This allows guests to experience staying in a home or neighbourhood rather than a hotel and Leonard (2013, cited in Owyang, 2013) claims that:

> *"There is a cultural shift taking place – people want to rely on people, not just companies"*

The sharing economy enables people to avoid big brands, and concentrate on getting to know one another and maintaining a sense of community instead. People exposed to this type of sharing ethos are likely to apply this way of thinking to other aspects of their lives and become more open in general.

Economic drivers

When the most recent recessions hit in the late 2000s, people were seeking ways to reduce expenditure and save money. Being able to utilise excess or idle resources was a key way to achieve this. For example, the average power drill will be used for around 12-13 minutes in its entire lifetime (Botsman, 2010). This seems shocking when one considers that many homes have a power drill that will remain idle for the vast majority of its life. What the sharing economy does is simplify things – after all, "what you need is the hole, not the drill" (Botsman, 2010), so why own a drill in the first place, especially if you can borrow or share one? Individuals who cannot afford certain commodities (which could be a power drill, a room in a castle, or a pet dog) are able to borrow or rent them and enjoy the experience of access without the maintenance and expense of ownership. As Gansky (2010) says:

> *"We're moving from a world where ownership was something we aspired to, to a world where access to goods, service, and talent trumps ownership."*

It is possible to link Gansky's concept of talent, with Owyang's concept of financial flexibility. Networks such as Etsy remove potential barriers such as start-up costs and advertising, for small-time entrepreneurs. Creative people are able to sell their wares online, whether it is a hand-embroidered cushion, a colourful screen print or handmade earrings. Etsy allows for a community not dissimilar to traditional cottage industries where people would buy from other locals with particular skills. However, with the Internet, this idea of being part of a local community may extend over a much greater area. Similarly, Airbnb has allowed many hosts (particularly those with large family homes but whose children have since flown the nest) to make additional income which to stay in their own homes, pay for a few luxuries in retirement and travel. The Economist (2013) reported that Airbnb hosts in San Francisco rent out their homes for an average of 58 nights a year and earn $9,300.

Technological drivers
Advances in technology such as the Internet, social media, mobile apps and real-time systems have accelerated the progression of the sharing economy significantly. Previously, a nearby neighbour may have been more than willing to share their car for a fee, but seeking out a car-sharer may have been more trouble than it was worth.

A British car is driven for less than an hour a day, but costs thousands of pounds to own in upfront costs, petrol and insurance (Economist, 2010). Making money from such a costly asset while it is not in use, or indeed not owning a car at all, can make perfect sense. With 33% of the world's population connected to the Internet and a projected 70% of the literate population likely to own a smartphone in the next four years, society can be considered "connected" (Suster, 2013 in Finley 2013). Thus, the sharing economy makes sense.

The explosion of new technology, in particular social networks and real-time low-friction payment and location services allow us to carry out traditional activities in an online setting.

> *"We're bartering, trading, swapping, sharing, but they're being reinvented into dynamic and appealing forms. What I find fascinating is that we've actually wired our world to share, whether that's our neighbourhood, our school, our office, or our Facebook network, and that's creating an economy of "what's mine is yours."*
>
> Botsman (2010)

Technology has reduced transaction costs, making sharing assets cheaper and easier than ever, and therefore possible on a much larger scale. The significant change is the availability of more data about people and things, which allows physical assets to be disaggregated and consumed as services (Economist, 2013).

2.1.4 Trust in the shared economy

The shared economy basically enables strangers to connect through the Internet and exchange, sell or give commodities to each other. A key factor in enabling these networks to function well (or at all), is for these marketplaces to be seen as transparent, safe places to conduct business. In other words, there must be trust. Botsman believes that technology has helped provide this trusting environment:

> *"Technology is enabling trust between strangers. We now live in a global village where we can mimic the ties that used to happen face-to-face on a scale, and in ways that have never been possible before."*

To some extent she is correct. Technology enables Airbnb guests to send messages and ask questions of their hosts before committing to booking a room with them. It also allows payment to be delayed so that hosts do not get paid until 24 hours after the guest has checked in, so that if there are any issues, these are resolved or the booking is cancelled before any money is exchanged.

But, Davis (2012) found that 67% of survey respondents cited trust concerns as the primary barrier to joining a collaborative consumption service. 30% of those feared that their goods would be stolen or broken, 23% expressed a basic mistrust of strangers, and 14% expressed "privacy concerns". Therefore, it is extremely important that this trust barrier is overcome if the sharing economy is going to be a sustainable business model in the future.

Connections made online as part of the shared economy often have real life impacts, i.e. a person will stay in an Airbnb host's spare bedroom, or a TaskRabbit will be invited into the home to help put up shelves (or other such tasks). The Airbnb host or TaskRabbit experiences a risk which is just as great. In these situations, personal safety is a significant factor. This is a more personal potential risk than the risk associated with losing money in an e-commerce transaction.

Reputation is a key factor that forms the basis of trust in the shared economy. Previously, credit status always decided the credit resources available to an individual. It is not inconceivable (and may be on the way to becoming a reality) that there will be similar criteria about whether we can be trusted or not. As King (2012) puts it:

> *"It's not about your credit, but your credibility"*

Star ratings, reviews, linked social media accounts and third party seals are just some of the many "trust cues" which may form the new currency of reputation in the shared economy.

2.2 TRUST

This section will outline relevant academic research into trust, beginning by discussing the difficulties with defining trust. Some different types of trust will be explored as will the ever-present element of risk. Context will be considered, and differences between offline and online trust will be investigated before the focus shifts to e-commerce, where much of the online trust research has been carried out. Finally, various frameworks, recommendations and trust cues will be examined.

2.2.1 Defining trust

Many definitions of trust exist as the concept has been examined from many different disciplines. For example, philosophy, psychology, sociology, management, marketing, ergonomics and human-computer interaction. These various streams of research have produced extensive literature in the general area. However, as noted in Corritore et al. (2002), there has often been a lack of agreement and focus, even within disciplines. To begin with a broach definition, the Oxford Dictionary of English (2014) defines trust as a:

> *"firm belief in the reliability, truth, or ability of someone or something"*

This is a relatively loose definition and its implication will vary depending on the context within which it is used. There is support for trust being at its core a belief or expectation of behaviour (Möllering, 2001). If a person has an expectation of another's behaviour, then this may simplify their interactions. Riegelsberger and Sasse (2001) expand on this by stating that trust can be used to reduce complexity and that trust depends on the following:

> *"An individual's ability to trust, conventions, and cues of trustworthiness"*

While there are many definitions of trust, explanations often have certain things in common. These similarities have been widely accepted by researchers in the area as characteristics of trust, and have been identified by Wang and Emurian (2005) as follows:

- *Trustor and trustee* - two specific parties must exist, a trusting party (trustor) and the trusted party (trustee). The development of trust is based on the ability of the trustee to act in the interest of the trustor and the degree to which the trustor places in the trustee.
- *Vulnerability* - trustors must be willing to make themselves vulnerable for trust to be operational. Trustors must be willing to take the risk of losing something important to them and rely on the trustee not taking advantage of this vulnerability.
- *Produced actions* - trust leads to actions, mostly risk-taking behaviours. The form of action depends entirely on the situation and may concern something tangible or intangible.
- *Subjective matter* - trust is subjective, and is directly related to and affected by individual differences and situational factors. Different people view the role of trust differently, and the situation can define how much trust can influence outcomes.

2.2.2 Types of trust

While the characteristics above form the basis for most definitions, the issue becomes more complex when considering different types of trust. Various scholars (Delhey et al., 2011; Fritag and Traunmuller, 2009; Welch et al, 2005) identify two separate types of trust in others. These are identified and defined below:

- *Particular, thick, or specific trust* – interaction with a narrow circle of familiar others. An individual's social circle
- *General, thin, or diffuse trust* – interaction with strangers, people in general

Generalised trust is most pertinent type when considering online contact with strangers in environments such as the shared economy. This social trust may be viewed as:

> *"more like a core value or belief; an abstract evaluation of the moral standards of the society in which we live"*
>
> Sturgis et al. (2012)

Having high levels of this kind of trust is often seen as a positive thing for society, as it makes it easier for cooperative behaviour without strict regulation and enforcement. It makes subjective sense to assume that differing levels of generalised trust are linked with levels of social connectedness, i.e. people with more organisations or voluntary groups, and who have more friendly connections with neighbours are more likely to be more trusting of people in general.

Sturgis et al. (2012) conducted a longitudinal study applying statistical models to trust data collected in the UK from 1998-2008. They found that levels of trust did not change significantly over the twenty-year period despite changes in an individual's formal and informal social connections. This suggests that once generalised trust beliefs are formed, they are quite robust and mostly immune to changes in circumstances.

This idea of a baseline level of trust is often referred to as a person's disposition to trust. McKnight et al. (2002) developed a model for validating trust measures in e-commerce, which involved a series of literature-grounded questions to determine an individual's trusting behaviour. The model incorporated disposition to trust, institution based trust, trusting beliefs and trusting intentions. All aspects of this model have been used in various subsequent research, but the dispositional trust measures may have been reused most often (e.g. Sherwani and Stumpf, 2014).

Dispositional trust levels have been shown to predict high-risk Internet activity on a fictional legal advice website, but results are mixed for e-commerce settings (McKnight et al., 2004). Dispositional trust had not been investigated in terms of the shared economy prior to the present study. This aspect of trust is of particular interest because in the shared economy, trust is evaluated in terms of the brand as a whole (Airbnb, TaskRabbit, BlaBlaCar, etc), as well as the actual person the service enables a user to connect with. This duality also exists in peer-to-peer marketplaces like eBay, but the risk

associated with trusting sellers in this situation is more similar to traditional e-commerce. An investigation into the effect of levels of dispositional trust on trust in the shared economy is therefore a novel endeavour.

2.2.3 Risk

All trusting activity involves an unavoidable element of vulnerability or risk. Mayer (1995) incorporates the element of risk and partially defines trust as:

> *"The willingness of a party to be vulnerable to the actions of another party"*

As risk is present wherever there is trust, it makes sense to explore it when defining trust. Bradach and Eccles (1989, cited in Finley, 2013) reconcile the differences between expectation and risk by stating that:

> *"Trust is a type of expectation that alleviates the fear that one's exchange partner will act opportunistically. Of course, the risk of opportunism must be present for trust to operate."*

Consequently, it could be argued that trust requires risk, and vice versa. Everyday interactions with people, businesses or other agents involve risk whether it be negligible or more critical. The type of risk depends upon the context of the situation. For example, Plank et al (cited in Kim et al. 2008) noticed that consumer trust could be based on a number of components such as:

- The salesperson
- The product
- The company

Being able to refer to these concepts allow the consumer to shape their beliefs about whether the selling party will fulfil the transactional obligations. However, in an e-commerce environment these referents are either missing entirely (the product), or based on a website and the consumers' interaction with it.

This process is made more complex when strangers are communicating online through shared economy networks. Not only do users on both sides need to make judgements about the levels of risk and trust involved with a particular website, network or service, they need to include the risks associated with meeting a stranger. Inviting a stranger into the car as Liftshare users do, leaves both parties open to risks such as theft and injury as well as issues of potential non-payment or reciprocation. Remarkably, out of ten thousand completed Airbnb trips, there have been no reports of theft (Botsman, 2010). Many shared economy networks make considerable effort to ensure that users trust one another and feel safe. The Airbnb website (2014) has a section devoted to building trust where details are provided about user verification processes and payment security. Figure 4 shows a screenshot of one such section:

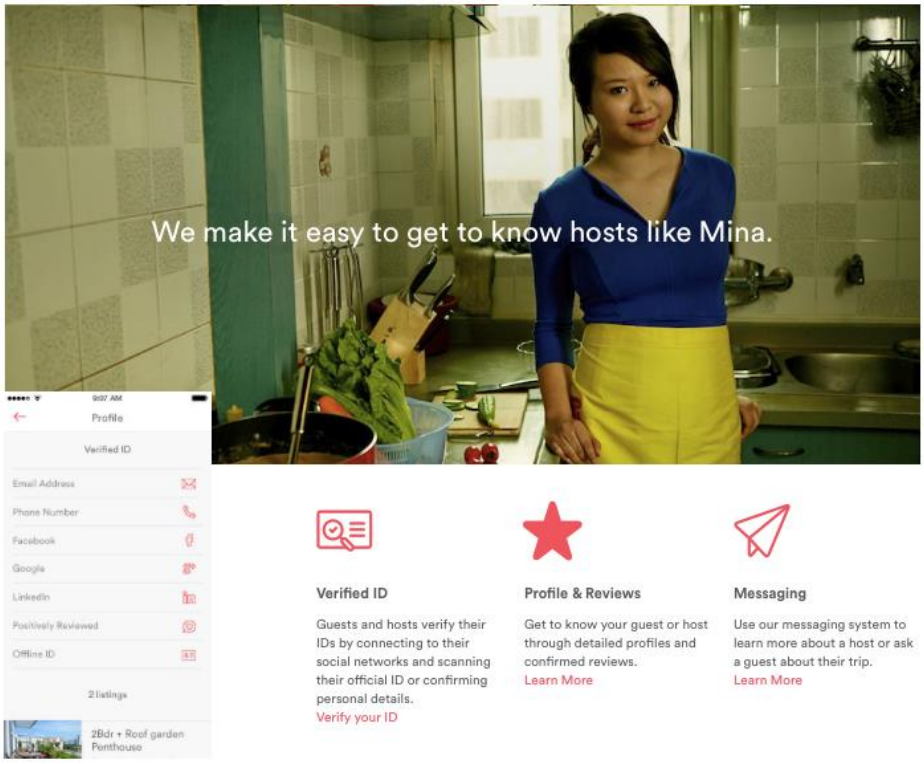


Figure 4: Airbnb's trust section

Currently, there has been no exploratory work investigating what shared economy users look to help them make judgements on risk and trust. As such, the present study is original in attempting to advance knowledge in this area.

2.2.4 Online trust

Online trust may be defined as an attitude of confident expectation that one's vulnerabilities will not be exploited in an online situation (Corritore et al., 2003, cited in Beldad, 2010). Context is key when examining trust, as its meaning and the component parts vary in different situations. As Gefen (2000, as cited in Finley, 2013) concludes:

> *"trust is, by its very nature, complex, multidimensional and context dependent"*

In an offline context, the subject of trust is typically a person or an organisation; whereas in an online context, the technology and the organisation deploying the technology are the objects of trust (Shankar et al. (2002, cited in Beldad et al., 2010) Online interactions between peers, or between businesses and the consumer are constantly evolving as new technology is developed. As the nature of business, society and socialising changes, online interactions are becoming an increasingly important part of everyday life. Technological advances mean that new virtually mediated interactions are always becoming available to users. These applications and tools allow users to communicate through content as well as directly with one another (Golbeck, 2009).

Online interactions are inherently different to more traditional face-to-face ones. This concept has been explored through extensive research into e-commerce. The term "dis-embedding" was originally coined by the sociologist, Anthony Giddens (1990) and was used to refer to the:

> *"'lifting out' of social relations from the local contexts of interaction and their restructuring across indefinite spans of time"*

To operationalise this concept, consider a consumer buying a product from Amazon or similar online retailer. The consumer pays for the item before it is delivered, despite having had no physical contact with the seller or the product. The e-commerce process is dis-embedded as it the interactions are spread out over space and time. A consequence of this dis-embedded interaction is that e-commerce transactions become more high risk. For example, the website the consumer ordered from may be fake, the retailer may be deceitful about the quality of the product, or the postal service may fail to deliver it. These are risks that do not exist in traditional face-to-face transactions, as the consumer can see and touch the product and leave with it after payment.

2.2.5 Trust in e-commerce

Extensive research in e-commerce has found that trust may be formed in two stages (Gefen, 2002; Koufaris, 2004; Marsh and Meech, 2000):

- *Initial trust* – based on first impressions of a vendor website
- *Experiential trust* – based on previous experience with vendor

Initial trust is linked with user interface elements of a website which help form the first impressions. If the user has a negative first impression, they are less likely to engage in a transaction and therefore will not build any experiential trust. Thus, it would appear that levels of initial trust in the vendor website is critical.

Building on this concept, Riegelsberger and Sasse (2003) suggested a process called "virtual re-embedding". This involved embedding cues, or indicators of trustworthiness into the interface of a website, app or other online product. Including photos of people on e-commerce websites is often cited as a way to increase trust in the website, despite findings being mixed. Riegelsberger and Sasse (2003) found that neither the presence of a photo, nor trustworthiness of the person depicted has a significant effect. However, the presence of photos impaired participants' ability to identify vendors with good and bad reputations. Less trustworthy vendors were seen as more trustworthy when they included photos where as the opposite was true for genuinely trustworthy vendors.

One of the many possible explanations is the "halo effect", an error made based on a single trait (usually physical attractiveness) that may significantly cloud judgement. This phenomenon was originally identified by psychologist Edward Thorndike (1920) and showed that more attractive subjects were believed to have more socially desirable traits (such as trustworthiness) than either average or unattractive subjects. This effect has been extensively researched and mainly supported (e.g. Rasmussen, 2008; Schneider et al., 2012). Photos seem to have a significant impact on trust, but may also cloud participants' judgment. As such, they will be omitted from the current research.

Moving on from their work on photos, Riegelsberger et al. (2005) proposed a more general framework of trust, which emphasised embedding cues that would increase a customers' perception of vendor trustworthiness. In this framework, three methods of virtual re-embedding are outlined:

- *Temporal* – trying to build a long-term relationship with a customer through trial offers, loyalty schemes, etc
- *Social* – involving the community through recommendations, reviews and other feedback
- *Institutional* – using the influence of control agencies through industry associations, trust seals and other brand items

2.2.6 Trust cues

Kim et al. (2008) built on this idea of virtual re-embedding by developing a theoretical framework describing the trust based decision making process a consumer uses when making a purchase from a website. This framework argued that there are four categories of trust antecedents that influence consumer trust and perceived risk:

- *Cognition (observation) based* – for example, privacy protection, security protection, system reliability, information quality
- *Affect based* – for example, reputation, third party seals, referral, ratings, recommendation, word-of-mouth
- *Experience based* – for example, familiarity, Internet experience, e-commerce experience
- *Personality orientated* – for example, disposition to trust, shopping style

When examining trust as part of the discipline of human-computer interaction, affect based trust antecedents may be of particular interest. Affect based cues sit between the more system based cognition cues, and the more psychological experience and personality based cues. As such, affect based trust antecedents have been extensively researched, especially in e-commerce.

Lelis and Howes (2011) investigated whether a theory of searching for information to discriminate between alternative choices could explain trusting behaviour. The researchers followed Optimal Experimental Design theories of the value of information. The idea behind these theories is that questions are formed, and used for information gathering. This process of organic information seeking is particularly interesting because it is undefined and results may be surprising. It was concluded that online ratings were of particular interest to participants when making judgements. Similarly, a Neilsen (2012) survey found that after personal recommendations from friends and family, online consumer reviews are the most trusted source of brand information. Approaching research without any expectations, and simply looking to collect information about what participants are seeking when making trust judgements could lead to some exciting and unexpected results.

Ratings and reviews can be transposed into the shared economy with relative ease. In traditional e-commerce environments the product is rated, in peer-to-peer marketplaces such as eBay, the product and the seller are rated. In shared economy networks, the person (and perhaps their service, or offering) is rated. As face-to-face contact is often required, it could be argued that verifying user identity is of particular importance in a shared economy environment. As such, some peer-to-peer networks like eBay excuse themselves from responsibility in their user agreement:

> *"Because user authentication on the Internet is difficult, eBay cannot and does not confirm each user's purported identity"*
>
> eBay User Agreement, as cited in Ba et al. (2003)

Shared economy networks like Airbnb have designed their websites to build trust, and ask users to verify different levels of ID, which earn them different badges on the website. BlaBlaCar, a carpooling network also has levels of experience. For example, Figure 5:

Figure 5: BlaBlaCar member experience levels

The issue of identity verification may be unique to the shared economy, and it has not been investigated in this context until now.

Beldad et al (2010) conducted a literature review exploring the antecedents of online trust. The majority of the research was based on e-commerce, with only a small number of studies available in other domains such as e-government or e-healthcare. Previous studies have generally not considered trust in non-transactional contexts, and have focused on the relationship between a consumer and an organisation rather than looking at peer-to-peer interaction.

In the shared economy, the risks, trust types, and objects of trust differ to those investigated in previous research. Trust in the shared economy combines elements of traditional theories focusing on face-to-face interactions, as well as elements more commonly found in e-commerce environments such as virtual re-embedding and trust cues. For example, TaskRabbit is a network which enables users to outsource household errands and skilled tasks such as cleaning, moving house or building furniture, to trusted people within the community. A price is agreed with the Taskers and they are automatically paid once they have completed the task. In this situation, the person looking to hire help is faced with numerous components, which they could use as a basis for trust. For example:

- TaskRabbit as a company
- The TaskRabbit website/app
- Information provided about the Tasker
- The Tasker themselves

A user's interaction with TaskRabbit begins online but soon becomes face-to-face when the Tasker arrives to help put up some shelves (or other such activity). The trust and risks involved with meeting strangers online has been documented in terms of online dating (Rosen et al, 2008) but has not been experimentally explored in terms of the shared economy before now.

3 METHODS

This section will begin by providing a high level overview of the research carried out. It will then go into detail about the hypotheses, who the participants were, how they were recruited, what the independent, dependent and extraneous variables were, and why these particulars were important. Then, information will be provided on how data was captured and the steps taken to minimise experimental bias while during this process. Finally, the section will conclude by providing details of how the quantitative and qualitative data were analysed, ethical considerations and the limitations of the overall methodological approach.

3.1 OVERVIEW

This research set out to study trust in the shared economy in the context of BorrowMyDoggy. The research questions are defined below:

- RQ1: What effect (if any) do star ratings and verification have on the perception of peer and site trustworthiness in a sharing economy website?
- RQ2: Can the participants' general levels of trust make a difference to trust ratings? If so, how?
- RQ3: What profile elements help dog owners to make a decision about whether to trust a potential borrower?

An experimental method was chosen to investigate this area and discover any relationships through manipulation of the independent variables (Lazar, 2010). The backbone of this research included a questionnaire to identify general trust levels in participants and, at the end of the sessions, short semi-structured interviews were carried out.

3.1.1 Setting the scene for the research

BorrowMyDoggy is a shared economy website which aims to "match dog owners and trusted borrowers for local walks, sitting, home boarding and holiday care." (BorrowMyDoggy, 2014). The benefits for dog owners are free dog-sitting and walking, and for borrowers, spending time with a dog without the commitment of owning one full time. The dog also benefits from extra exercise and attention.

In this research, dog owners constituted the target group. This decision to exclude borrowers from the research was made because dog owners signing up to the website would be taking a much bigger risk (i.e. the dog could be lost or injured) than the dog borrowers. Therefore, the researcher felt that exploring trust in the context of the dog owner would be more academically significant.

3.1.2 Research Design

The research hypotheses that star ratings and verification indicators would affect trust ratings was informed by previous research into e-commerce. However, this finding had not been proven in the shared economy and as trust in e-commerce is business-to-consumer, and the sharing economy is peer-to-peer, it was possible that trust in the shared economy would be different. Therefore, hypotheses were reported as two-tailed. This is a novel research topic because while trust in the shared economy has been investigated from a cultural and business perspective (Finley, 2013), it had not been investigated experimentally until now.

Thirty dog owners were recruited as participants through a mixture of convenience and snowball sampling using existing connections, social media and a poster campaign. A within-groups, repeated-measures experiment was conducted in which all participants were asked to make three decisions in all three conditions. The three conditions involved showing participants three wireframes in a particular (dictated by a Latin Square).

The wireframes were largely based on the search results page of the existing BorrowMyDoggy website. This page would appear after a dog owner has typed in their post code, and would show the people in their area available to borrow their dog. The three conditions were as follows:

- *No cues* – only four names and distance information (all 0.25 miles away)
- *Star ratings* – same as no cues but each potential borrower also had a star rating (1x1*, 1x2*, 1x3* and 1x4*)
- *Star ratings and verification* – same as star ratings, but the borrower with 3* also had a verification indicator (paw print)

The no cues condition acted as a control. The aim of adding the star ratings was to investigate whether this trust antecedent, which works well at shaping trust behaviour in e-commerce, could be applied to a shared economy environment. Adding the verification indicator to the potential borrower with the second highest star rating, enabled exploration of which trust antecedent (if any) would be deemed more important by participants. This had never been investigated before.

The dependent variables were decisions that each participant made in each condition:

- *Borrower choice* - which person they trusted the most
- *Borrower trust rating* - a rating of their trust in this person on a scale from 1 (no trust) to 10 (complete trust).
- *Site trust rating* - a rating of their trust in this site on a scale from 1 (no trust) to 10 (complete trust).

Before completing the experimental portion of the session, a trust questionnaire was administered via SurveyMonkey to capture a baseline level of trust and trust beliefs from each participant. These data were later compared with borrower and site trust ratings to determine whether the baseline levels of trust were and if they had an impact on decisions made during the experiment.

A short semi-structured interview was also conducted at the end of the session where the participant was asked to imagine what they would be looking for on a borrower profile if they clicked through from the search result page. They were asked what sort of information they would be looking for to help them make a decision about whether or not to trust that person and why that particular information was important. They were also asked if they would expect to see photo on a profile, what they would be looking for and why this was important to them. Participants' were divided into two trust groups (high and low trust) based on their dispositional trust scores from the questionnaire section of the research. The purpose of this was to investigate whether dispositional trust levels had an impact on elements of a profile that a participant would be looking for to inform their decision on whether to trust.

To help minimise experimental biases, a Latin Square was used to counterbalance the likelihood of learning effects (Lazar, 2010). Two participants acted as pilots to help refine the procedure, and photos were deliberately omitted from the wireframes for each condition based on evidence included in the literature review that they were likely to sway participants' decisions.

3.1.3 Data collection and analysis

Notes were taken during the sessions to record the quantitative data regarding the dependent variables. SurveyMonkey was used to collect data during the questionnaire section of the research. This automation helped to avoid human error. The semi-structured interviews were recorded using Quicktime to ensure accuracy. Recording the interviews also allowed the researcher to remain neutral and focussed on the participant, not to be seen to be distracted and making lots of notes.

As some of the data collected were not normally distributed, it was decided to use non-parametric tests on all quantitative data for consistency. IBM SPSS v22 was used to run these statistical tests. Qualitative data was analysed using Interpretative Phenomenological Analysis and the research tool, Dedoose was used to code the transcripts and produce data on the frequency each theme appeared.

3.2 HYPOTHESES

RQ1 and RQ2 were suitable for hypothesis testing. RQ3 was more concerned with finding out new information about what participants would be looking for on the profile of a potential borrower (with specific questions on photos) and therefore richer qualitative data collection methods were used. This made RQ3 unsuitable for hypothesis testing.

3.2.1 RQ1: Star Ratings and Verification

The following research question is considered:

> RQ1: What effect (if any) do star ratings and verification have on the perception of peer and site trustworthiness in a sharing economy website?

The overall research hypothesis is that the experimental condition will have an impact on trust choices. In this context, each of the measures described in Section 3.2.1 had a null and an alternative hypothesis.

H_0 There is no difference between experimental conditions for the borrower chosen as most trustworthy.
H_1 There is a difference between experimental conditions for the borrower chosen as most trustworthy.

H_0 There is no difference between experimental conditions for the borrower trust ratings.
H_1 There is a difference between experimental conditions for the borrower trust ratings.

H_0 There is no difference between experimental conditions for the borrower site ratings.
H_1 There is no difference between experimental conditions for the borrower site ratings.

3.2.2 RQ2: Dispositional Trust

The following research question is considered:

> RQ2: Can the participant's general levels of trust make a difference to trust ratings? If so, how?

The overall research hypothesis is that dispositional trust levels will have an impact on trust ratings.

H_0 Levels of dispositional trust have no effect on borrower trust ratings.
H_1 Levels of dispositional trust have an effect on borrower trust ratings.

H_0 Levels of dispositional trust have no effect on site trust ratings.
H_1 Levels of dispositional trust have an effect on site trust ratings.

Each hypothesis is two-tailed because although there has been some research into the effects of dispositional trust (e.g. Sherwani and Stumpf, 2014) there is not a strong body of evidence to help make a solid prediction about the direction of the hypotheses.

3.3 PARTICIPANTS

Thirty participants were recruited in total, with the first two acting as pilots. Data from the first pilot (P1) was removed from analysis so as to avoid bias. This is further explained below (Section 3.6.2 Removing First Pilot Data). Due to technical issues with recording equipment, the session with P28 was not recorded and therefore any qualitative data was lost. However, the researcher took notes of their choices during the experiment and it was decided that this data could still be used along with the dispositional trust questionnaire data.

The target population for the study included anyone who currently owned a dog, was moderately tech savvy, and was comfortable with the idea of the sharing economy and BorrowMyDoggy. Measuring these qualities and determining whether a potential participant would be suitable was dealt with using a screener (Section 3.3.2 Screener). Participants were selected from a variety of backgrounds, and ages in an attempt to increase the external validity of the findings. Sixteen of the participants were in the 25-34 age range because these people were easier for the researcher to access through friends or social networking contacts. However, considerable effort was made to reach older and younger participants. Four were in the 34-55 range, five in the 55-64 range and four were in the 18-24 range. Of the twenty-nine participants whose data was included in the study, ten were male, and nineteen were female.

Gender was not considered an important differentiating factor for any of the screener criteria, so a balanced sample was not attempted. However, gender beliefs and issues ultimately became unexpectedly prominent in the research, so it would have been better to have had an equally split sample. This issue is discussed in more detail in the evaluation and reflection (Section 6: Evaluation, Reflections and Conclusions).

3.3.1 Sampling and Recruitment

A combination of snowball and convenience sampling was used. Participants were recruited because they were easy for the researcher to reach, and willing to help. Participants were recruited through personal contacts, social networks such as Facebook and Twitter (Figure 6). Others were recruited through posters displayed in areas popular with dog owners in the area local to the researcher (Figure 7) such as parks, pet shops and dog-friendly pubs/cafes. Participants were given an incentive of homemade cake for their time.

Figure 6 Facebook recruitment

Figure 7 Poster design

3.3.2 Screener

A screener was used to establish whether a potential participant was suitable for the study (Appendix C: Screener). Participants were asked to give an estimation of how tech savvy they were, asked about their online habits and any devices that they use (e.g. smartphone, laptop, iPad). This was ensure that participants would have a high level familiarity with the internet and websites.

If participants were not reasonably tech savvy and did not regularly use at least one device to regularly access websites, they were not invited to participate in the study. Thirty-seven people were interested in participating in the study. Seven were rejected for the following reasons:

	Reason for rejection		
Potential Participant ID	**Not current dog owner**	**Not regular user of websites**	**Not comfortable with the concept of BorrowMyDoggy**
P1	X		
P2		X	
P3		X	
P4			X
P5			X
P6			X
P7	X		

Table 1: Rejected participants

Participants were also given a short information sheet as part of the screener and asked whether they were comfortable with the concepts of the shared economy and BorrowMyDoggy. This was partly to ensure that the concepts didn't have to be extensively explained to participants during the sessions.

It was thought that people who objected to these concepts would be unlikely to be able to engage with the experiment to a satisfactory level. As the sharing economy has only seen mainstream adoption relatively recently, several potential participants felt it was uncharted territory. They fell into this category and were excluded from the study. This population is quite large, so would be interesting for further study, but for the purposes of this research were beyond scope.

3.3.3 Participant Profiles

Thirty participants were recruited, with the first two acting as pilots. The data of twenty-nine participants were used to answer RQ1 and RQ2. Due to a technical failure, the interview data required to answer RQ3 was lost for P28, therefore data from twenty-eight participants were used to formulate an answer. The table below shows a breakdown of all participants:

Participant ID	Age range	Gender	How often they use sharing economy websites	People that have looked after their dog	Session method
P1	Data removed from the study				
P2	18-24	Male	Never	Neighbour	Face-to-face
P3	55-64	Female	Often	Neighbour	Face-to-face
P4	18-24	Male	Infrequently	Neighbour	Face-to-face
P5	25-34	Female	Never	Friends	Face-to-face
P6	25-34	Female	Sometimes	Friends and family	Face-to-face
P7	25-34	Female	Never	Friends and family	Face-to-face
P8	25-34	Male	Never	Family	Face-to-face
P9	35-44	Female	Never	Family	Face-to-face
P10	45-54	Female	Infrequently	Friends and dog sitter	Face-to-face
P11	35-44	Male	Never	Family and dog sitter	Face-to-face
P12	35-44	Female	Often	Family	Face-to-face
P13	45-54	Female	Never	Family	Face-to-face
P14	25-34	Female	Infrequently	Family and kennel	Face-to-face
P15	25-34	Female	Sometimes	Family, neighbours and doggy day care	Face-to-face
P16	25-34	Male	Sometimes	Family, dog walker, doggy day care	Face-to-face
P17	25-34	Female	Often	Family and dog walker	Face-to-face
P18	25-34	Female	Never	Family, friends and doggy day care	Face-to-face
P19	45-54	Male	Never	Friends and kennel	Skype
P20	18-24	Female	Never	Friends and kennel	Skype
P21	45-54	Female	Never	Friends and kennel	Skype
P22	25-34	Female	Never	Friends and kennel	Skype
P23	25-34	Male	Never	N/A	Skype
P24	35-44	Female	Infrequently	Family and friends	Face-to-face
P25	25-34	Female	Infrequently	Family	Face-to-face
P26	25-34	Male	Infrequently	Family	Skype
P27	25-34	Female	Infrequently	Family and kennel	Skype
P28 (technical issue)	18-24	Female	Never	Family	Skype
P29	25-34	Male	Very Often	Family and kennel	Face-to-face
P30	25-34	Male	Never	N/A	Face-to-face

Table 2: Participant data. Please note that P28 was not included in the qualitative sections of analysis due to a technical failure with the recording equipment.

3.4 MEASURES

Quantitative data was used to answer the first two research questions:

- RQ1: What effect (if any) do star ratings and verification have on the perception of peer and site trustworthiness in a sharing economy website?
- RQ2: Can the participant's general levels of trust make a difference to trust ratings? If so, how?
- The different variables controlled, measured or otherwise involved in answering these questions, are discussed in this section. Qualitative data was used to answer the final research question:
- RQ3: What profile elements help dog owners to make a decision about whether to trust a potential borrower?
- The qualitative data collected and reasons collecting it are also discussed.

3.4.1 Independent Variables

In the experimental part of the study, the three conditions that the participants saw were controlled:

- No cues
- Star ratings
- Star ratings & verification

Prototypes were created in Axure and designed to look as much like the BorrowMyDoggy site as possible and were identical apart from the trust cues. Borrower names were based on the most popular baby names of 2010 as reported by the Office for National Statistics (2011). According to this survey, the most popular names for boys were Oliver and Jack. The most popular names for girls were Olivia and Sophia. It was decided that Olivia was too close to the boys name, Oliver, so the next name in the list was chosen. Therefore, the girls' names used in the wireframes were Sophia and Emily.

Four borrowers were chosen for simplicity. It was easy to have two male and two female borrower names, and although 5-star ratings are generally considered the norm, having 4-stars was not unusual. Also, four borrowers could be spaced out evenly on the screen, minimising any bias to do with placement.

No cues

This was the control condition. Dog owners saw a prototype of the BorrowMyDoggy website search result screen. On this screen they saw four people that would like to borrow their dog. All the owner knows in this condition is that there are four people (Oliver, Sophia, Emily and Jack) and they all live 0.25 miles from the owner.

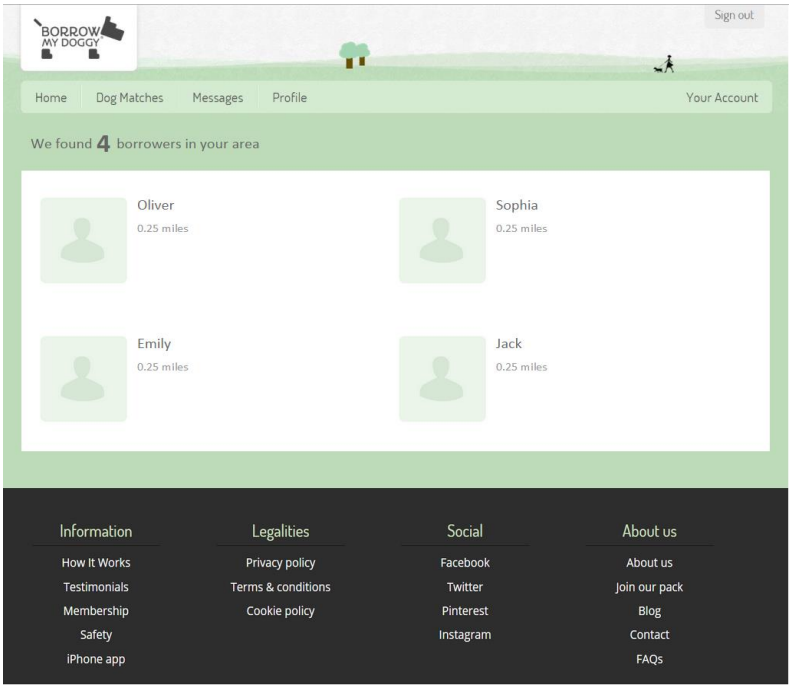


Figure 8: No cues prototype

Star ratings

In this condition, dog owners saw a prototype which was identical to the no trust cues condition above, apart from the addition of star ratings. Emily had one star, Oliver had two stars, Sophia had three stars and Jack had the maximum of four stars.

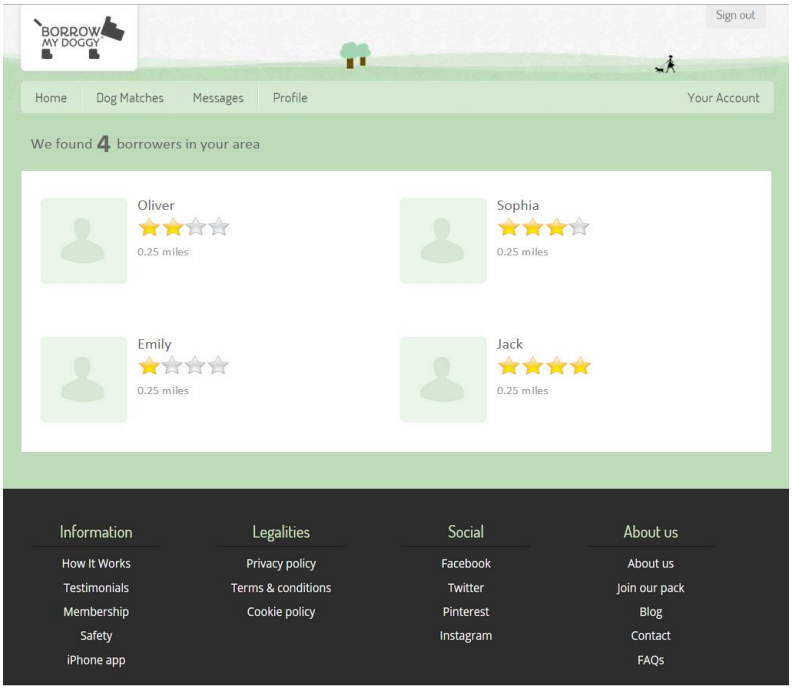


Figure 9: Star ratings prototype

Star ratings and verification
In this condition, dog owners saw a prototype which was identical to the star ratings condition above, apart from the addition of a verification indicator. This verification indicator was a paw print and the word "verified". This verification indicator was assigned to the potential borrower with the second highest star rating.

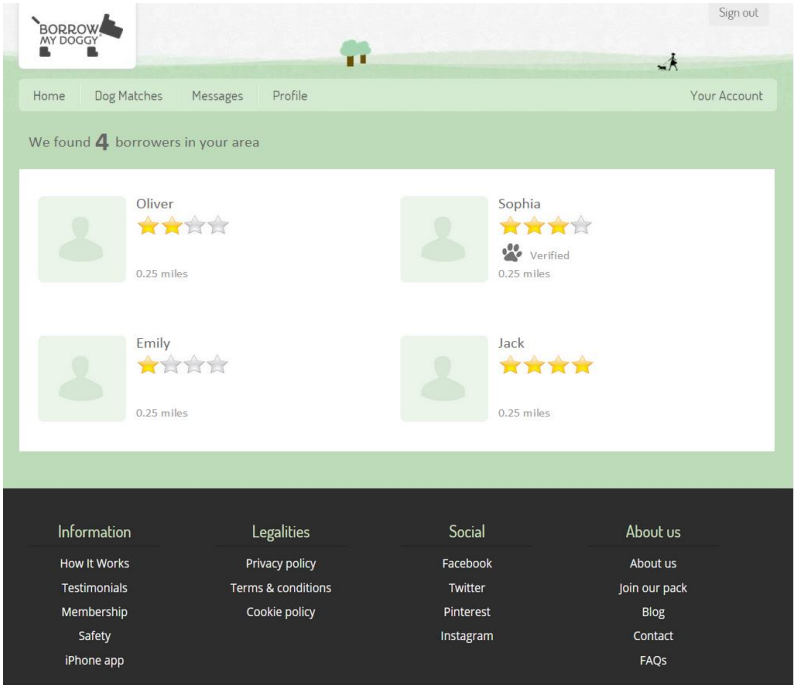


Figure 10: Stars and verification prototype

Issues with the prototypes
The researcher thought that giving each borrower a different star rating (Emily =1, Oliver = 2, Sophia = 3, Jack = 4) would also keep things simple. However, there were issues that arose from this which are discussed in Section 5.3 of the Evaluation and Reflection. Essentially, by adding four levels of star ratings, the analysis became complicated because it could not be assumed that the effect was based on the trust cue either being there or not. This meant that there are an extra four levels to the star rating and star rating & verification conditions. This was unexpected and affected the statistical analyses that could be performed on the borrower chosen data. Also, the researcher looked into using gender as a way of interpreting the results, but accidentally gave males the advantage because Oliver's score plus Jack's score equalled 6, whereas Emily and Sohpia's combined score was only 5. This did not seem to make a difference to the data, but should be considered an error nonetheless. Gender was not a factor that had been initially expected to play a significant role, which is why the participants were not recruited in an even gender split. Please see Section 5.3 for more details.

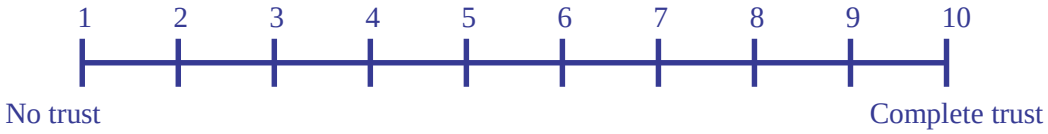
3.4.2 Dependent Variables
In the experimental part of the study, the following ways measuring trust from 29 participants were as follows:

- Borrower choice
- Borrower trust rating
- Site trust rating

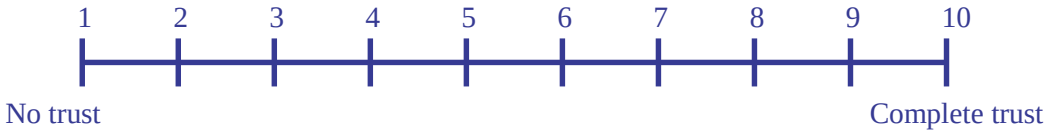
Borrower Choice
This identifies the borrower that a participant chooses to be the person that they trust the most out of the four borrowers they are presented with in each condition.

Issues with the measure
In the stars condition and the stars and verification condition, borrowers had individual star ratings (Emily =1, Oliver = 2, Sophia = 3, Jack = 4). These extra levels complicated the analysis for the borrower choice data. The specific issues are discussed in depth in Section 5 Results and Discussion, as well as Section 6 Evaluation and Reflection. From a methodological point of view, this issue could have been avoided by eliminating borrower choice as an explicit data point, and asking for borrower trust ratings for all four borrowers, i.e. Emily, Oliver, Sophia and Jack, not just the borrower picked as most trustworthy. Then, the most trusted borrower could have been inferred (as they were rated the highest), but it would also have been possible to see how they compared to their peers. The issue stems from the fact that the choice of borrower may be affected by the number of stars a borrower has, not just whether stars are present or not, which is the premise that the research was designed for. Unfortunately this was not picked up by either the researcher or the supervisor during their meetings and only discovered after data collection had already taken place.

Borrower Trust Rating
This is the rating from 1-10 on a trust scale that a participant gave when asked to report how much they trusted their chosen borrower. The scale ranged from 1 = no trust to 10 = complete trust.
Site Trust Rating
This is the rating from 1-10 on a trust scale that a participant gave when asked to report how much



they trusted the version of the website they were currently looking at. The scale ranged from 1 = no trust to 10 = complete trust.



3.4.3 Extraneous Variables

Certain characteristics could have confounded the dependent variables, but were not controlled as part of this study. The main extraneous variables were as follows:

- Dispositional trust level
- Individual differences
- Experimenter effects and demand characteristics

Dispositional Trust Level
This is the result of the McKnight et al. (2002) dispositional trust questionnaire and refer to participants' baseline levels of trust and trusting beliefs. These levels were used as part of the analysis, but could not be controlled by the researcher as they were personal to each participant and made up of a variety of factors, which could not be controlled as part of the study.

Individual Differences
Each participant was different in many ways from every other participant. They all have varying intelligence, mood, concentration levels, etc. They all have past experiences which may impact how likely they are to trust people. They also all have different dogs and relationships with those dogs. For example if a dog had been rescued from a home with a history of neglect, an owner may be more likely to be distrusting of other people with the dog.

Experimenter Effects and Demand Characteristics
Experimenter effects refers to any effect on participants due to the actions or presence of an experimenter. Demand characteristics can be seen as a subset of experimenter effects and specifically refer to any effect caused by the attitudes and actions of the experimenter. These were controlled as much as possible (Section 3.6 Reducing Bias), but experimenters are often completely unaware of the influence or cues that they may be giving.

Characteristics of the researcher such as age, gender, accent etc. could have affected the behaviour of participants. Also, the fact that the experimental method is inherently unnatural leaves it open to the effect of demand characteristics. An example of this could be that participants are not usually asked to place a numeric value on their how much they trust a fictional person, and the very act of being asked to do this by the researcher in an experimental setting may have affected the results. However, the value gained from obtaining this type of information from participants was deemed worth the risk.

3.4.4 Qualitative Data

Borrower Profile Information
After the experimental part of the session, participants were asked about what information they would be looking for on the profile of someone hoping to borrow their dog. These questions were asked as part of a semi-structured interview. Probes were used to encourage participants to elaborate their response on the information they would be looking for.

Participants were also asked to talk about the effect that photos on a profile would have. Specifically, they were asked what they would consider a "trustworthy" photo, and what difference (if any) it would make if the borrower had uploaded a photo of themselves with a dog.

Data from 29 participants was included in the quantitative parts of the research but unfortunately, the audio recording of P28 was lost. Therefore, her choices and ratings in the experiment were captured in the researchers notes, but the semi-structured interview section was not.

Participants were divided into high and low dispositional trust groups to investigate whether baseline levels of trust affected the profile elements that participants used to inform their decision to trust. Participants with a dispositional trust score at or higher than the mean (3.92) were assigned to the high trust group, and those with a score below were assigned to the low trust group.

3.5 DATA CAPTURE

The research questions required both quantitative and qualitative data to answer them, so a mixture of research methods was the most appropriate choice for collecting data. The following methods were used:

- Questionnaire
- Experiment
- Semi-structured interview

Each research method is discussed separately below.

A rough study plan (Appendix B) was created as a working document, which helped to plan the study and was updated as and when plans changed.

3.5.1 Questionnaire

Participants were asked to complete a questionaire using SurveyMonkey before taking part in the experiment. The questionnaire was composed of closed questions about trusting beliefs and behaviours. The particular questions were chosen from the McKnight et al (2002) dispositional trust questionnaire because they had been used successfully in other research. Therefore, findings from the present research could be directly compared.

The McKnight et al (2002) dispositional trust questionnaire was used to calculate a trust score for each participant. This section was made up of four dimensions:

- Integrity
- Competence
- Benevolence
- Trusting Stance

Each of the four dimensions of trust had three statements associated with it and levels of agreement were measured on a 5-point Likert scale. For example, Figure 8. The full questionnaire can be found in Appendix G: Questionnaire.

Figure 11: Example trust question

Each level of agreement was given a score (from 1 = Strongly Disagree to 5 = Strongly Agree). The average score for each dimension was taken, then, a dispositional trust score was calculated as the average score of all four dimensions. These scores were used in subsequent statistical analyses.

These trust scores were compared with the borrower trust ratings and site trust ratings collected during the experiment. A Spearman's correlation was used to statistically analyse whether participant's baseline (dispositional) levels of trust made a difference to their trust ratings.

This questionnaire has been successfully used in research since its development (Sherwani and Stumpf, 2014). Despite having been developed as part of a trust measurement tool-kit for e-commerce, the dispositional trust questionnaire is very broad. Therefore it was decided that this was an appropriate and methodologically robust measure of dispositional trust which could be used outside of e-commerce.

The questionnaire was also used to capture background information about participants such as their online habits as well as information about their experience as a dog owner, whether they had ever let anyone look after their dog before, and if so, who those people were.

The questionnaire was administered to participants using the SurveyMonkey Select package. This was to allow questions to be weighted (scored), and make it easier to compile the data for analysis using the export features. It also enabled remote participants to complete the survey in the same way as the face-to-face participants. Automated data collection also minimised the potential for human error.

3.5.2 Experiment

A within-groups, repeated-measures experiment was conducted in which all participants' were asked to make three decisions in all three conditions. In all conditions, photos were removed so as not to bias the participant's decisions. Considerable literature exists which indicates that photos can change the trustworthiness (Reigelsberger and Sasse, 2001, Riegelsberger et al, 2005).

An experimental setup was used where participants being asked to imagine that they had just entered their postcode into the BorrowMyDoggy website. They were then shown three different mock-up versions of the same search results page. On each version of the page, the participant saw four potential borrowers (two male, two female) in the same position on screen each time. In each condition, the search result page was slightly different.

Prototypes were developed in Axure, and all participants saw all three conditions. Creating prototypes based on an existing website to use in the experiment was novel in the field of trust research.

In each condition, participants were asked to make three decisions, and talk the researcher through their thought process and the reasons behind their choices:

- *Borrower choice* - which person they trusted the most
- *Borrower trust rating* - a rating of their trust in this person on a scale from 1 (no trust) to 10 (complete trust).
- *Site trust rating* - a rating of their trust in this site on a scale from 1 (no trust) to 10 (complete trust).

A scale of 1-10 was used because there is no established method of measuring trust in this sort of environment. McKnight (2002) developed a serious of statements, which aim to measure trust in different aspects of an e-commerce. For example, the following statement forms part of measuring benevolence for a fictional website:

> *"I believe that LegalAdvice.com would act in my best interest"*

While this statement could be adapted for use with BorrowMyDoggy, there are others, such as the following, may have proved problematic:

> *"Given a tough legal issue, I would be willing to pay for a 30-minute phone consultation with a LegalAdvice.com lawyer"*

A whole other project could be based around creating a trust measurement system for a sharing economy website, and as such, developing or extensively customising and adding to an existing one was beyond the scope of this research. However, this would be a very interesting prospect for further research.

Participants were encouraged to think aloud and explain to the researcher what they were thinking as they were making their choices. The researcher also asked participants to elaborate on why they made their choices. Participants were also probed on what they thought the star ratings and verification meant, and what went into each process. The full session guide (Appendix H) contains details of all questions and probes used by the researcher.

An experimental method was chosen because it was the most appropriate way to compare trust in different conditions, which is key to answering the research questions. The researcher was also familiar and comfortable with experimental research, having previously undertaken a bachelor's degree in psychology.

3.5.3 Semi-Structured Interview

After the experimental part of the session, participants were asked questions about what they would expect to see on a borrower profile if they clicked on one from the search results page.

In order to understand why they would expect to see certain information, participants were encouraged to elaborate and explain how important different pieces of information were to them, and how they would expect the information to be displayed on a profile. Participants were asked specifically about the type of photos they would expect to see on a borrower profile.

In addition, participants were asked to whether a photo of the borrower would make a difference to the decisions they made during the experiment. This was interesting because there has been a lot of research which indicates that photos can change reported levels of trustworthiness.

A semi-structured interview was chosen to allow the conversation to flow without too many constraints. Open questions were used alongside prompts to encourage participants to elaborate and fully explore what they were looking for in a profile and why those things would be important to them. As the topic of RQ3 has not been investigated before, encouraging participants to answer in their own words and to be able to ask them to elaborate on their thoughts was an appropriate method. Using a closed questionnaire would not have been suitable as the researcher may have missed options which participants would naturally mention. Also, other methods such as diary studies where participants have to dedicate a significant amount of time to writing down or talking about their thoughts may have led to high drop out rates.

3.6 Reducing Bias

General procedural biases were minimised as far as possible. To reduce the impact of fatigue or boredom, sessions were limited to a maximum of 45 minutes, and participants were informed that they could take a break or stop the session whenever they wished (: H: Session Guide).

Environmental biases were more difficult to reduce because for the majority of the sessions, the researcher was visiting the participant in their homes. Sessions were always conducted indoors and in a quiet room with good lighting. When sessions took place over Skype, participants were encouraged to sit in a quiet, well lit room. Dogs were often present during the sessions (virtual and face-to-face), as they were more likely to be distracting when they were shut out of the room their owner was in. The same equipment was used in all sessions (Section 3.7.2 Equipment).

Experimenter effects and demand characteristics were minimised as much as possible. The researcher wore similar clothes and aimed to use the same tone of voice with all participants. Leading questions were avoided as much as possible through scripted prompts, but due to the semi-structured nature of the interview sessions, these prompts could not always be planned in advance (Appendix H: Session Guide).

Latin square
Using a repeated-measures or within-group experimental approach increases the chance of learning effects (Lazar et al., 2010). To help reduce the impact of this, the experimental design needed to be set up in a way which counterbalanced the learning effects. Ideally, complete randomisation of participants would be used, but this would mean that the number of participants required would be beyond the scope of a university project. A more suitable Latin Square approach was used instead. As there were three conditions, a 3x3 Latin Square Matrix was devised. Participants rotated around the three different orders as shown below:

	Condition		
Order A	1	2	3
Order B	2	3	1
Order C	3	1	2

Key:
1= No cues
2= Star ratings
3= Star ratings & verification

Figure 12: Latin square

Removing First Pilot Data
The first two participants acted as pilots. During the first pilot, issues with the order of questions became apparent. These changes to format are discussed in more detail with regards to the session structure (Section 3.7.5 Changes Made After Pilots). As the first pilot session varied so much from the rest of the sessions, it was decided that this data was not suitable to be included in the research. If the research had been included, it may have skewed the data.

Omitting photos
All participants commented on the lack of photos during the experimental part of the session. Photos have been shown to affect the levels of trust in a website , and considering the fact that the participants would be choosing to trust a person with their dog (just through a website), it was highly likely that the way a person looked could affect how trustworthy they were perceived to be . While a version of this research involving photos would be extremely interesting, to make sure that any differences between conditions were based on the independent variables, photos were omitted.

3.7 RESEARCH PROCEDURE

The study took place over a three-week period with a maximum of six participants on any single day. A minimum of one hour was allocated to each participant, although sessions were expected to last no longer than 45 minutes.

The sessions were split across four sections which took between 30 and 45 minutes to complete. A test script was used to ensure consistency (Appendix H: Session Guide) and an extract from the session guide can be found under research materials (Section 3.71). Participants showed no signs of becoming tired during the sessions.

The procedure for each session was as follows:

1. *Welcome and introduction of the experiment*
   The research took part in a variety of locations. Participants' who were previously known to the researcher were either invited to the researchers home, or the researcher was invited to their home. Participants who the researcher recruited through her poster campaign, arranged to meet in a quiet coffee shop. Some participants were unable to meet in person and were asked to Skype the researcher from a quiet location, preferably their home.

   Participants were welcomed and thanked for agreeing to take part in the procedure. They read an information sheet (Appendix D: Information Sheet) and signed a consent form (Appendix E: Consent Form) They were briefed on the purpose of the research and allowed to ask any questions they had. They were told that they could take a break or stop the session at any point with no negative consequences. This section took an average of 5 minutes.

2. *Introductory questions*
   Participants were asked for some background information such as their age, gender and occupation.

3. *Trust and background questionnaire*
   Participants were either given the researcher's laptop to complete the questionnaire, a paper copy (if they preferred) or sent a link via Skype IM.

   The questionnaire gathered information on the following:

   - Dog ownership
   - Trust (including dispositional trust questions)
   - Sharing economy
   - Online habits

   This section took an average of 10 minutes.

4. *Experiment*
   A balanced Latin Square determined in which order participants saw each of the experimental conditions. In each condition, participants were asked to make a decision about which borrower they trusted the most, how much they trusted them from 1-10, and how much they trusted the website from 1-10. This section took an average of 20 minutes.

5. *Semi-structured interview*
   A semi-structured interview was conducted and recorded on the researcher's laptop using QuickTime. Participants were asked what they would be looking for in a potential borrowers profile to help them decide whether they would trust the person or not. Probes were used to investigate the following:

   - What information participants were looking for on a profile
   - Why the information was important
   - Whether they felt a photo of the borrower would have affected their decisions in the experiment
   - Whether they felt a photo of the borrower with a dog would have affected their decisions in the experiment

   This section took an average of 10 minutes. Afterwards, participants were thanked for their time and given cake as a token of the researchers appreciation. Many expressed an interest in

finding out more about the research once it was completed. The researcher offered to share it as a short easy-to-read blog post on the website of the usability agency the researcher works for. This is likely to be published in the first half of 2015.

3.7.1 Equipment

The following equipment was used in the execution of this research:

Apple MacBook Air

QuickTime Audio Recorder

A Macbook Air laptop was used as it was light and easily transported to participants' homes and coffee shops. It also came with QuickTime installed by default which allowed the semi-structured interviews to be recorded.

The research materials were as follows:

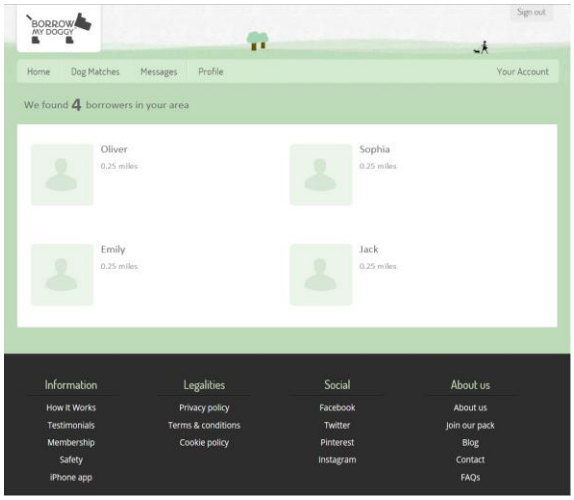
- Participant information sheet
- Consent form
- Session guide
- Prototypes (Axure, with a backup version in Powerpoint)
- Paper questionnaires (if required)

Participants were incentivised with cake, so the researcher made sure this was available to them either throughout the session or at the end.

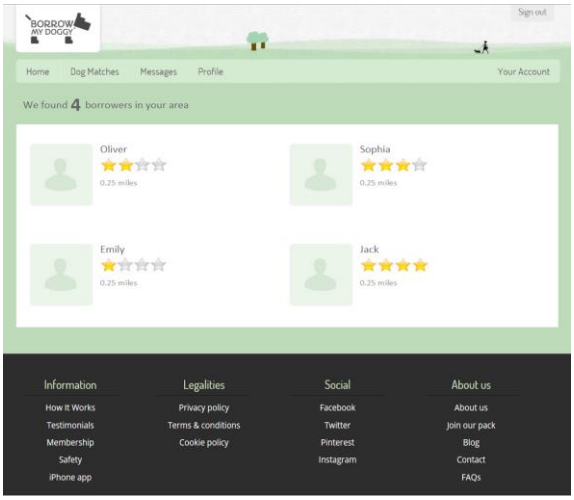
Prototypes

Prototypes were created in Axure and designed to look as much like the BorrowMyDoggy search result page as possible and were identical apart from the trust cues. Backup versions of the prototypes were created in Powerpoint (with screenshots of the prototypes). These came in useful when the researcher encountered technical difficulties with Axure during a couple of sessions. Creating wireframes based on an existing website and customising them was novel in trust research.

No cues



Star ratings



Star ratings and verification

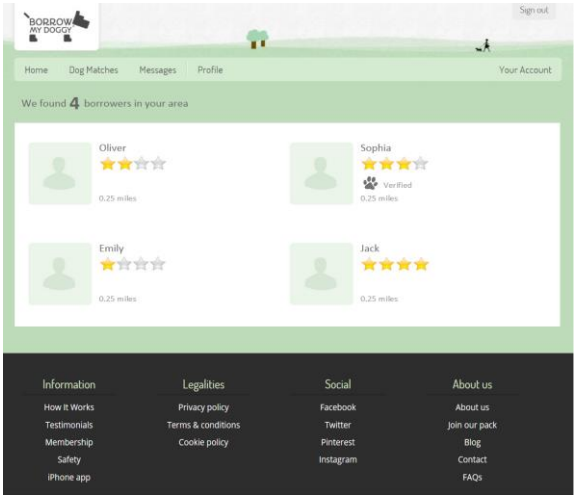


Figure 13: All prototypes

On the existing BorrowMyDoggy site there also filters which allow dog owners to search by borrower availability (weekends, weekdays) and frequency (once or twice a week, several times a week). Clicking on a borrower's photo opens up a full profile.

In this research, a prototype of the search results page was created using Axure. The aim was to make the prototypes usable and easy to understand, as the researcher was more interested in the decisions participants' would make, and the reasons behind them, rather than any usability issues. Four potential borrowers appeared in the search results screen, and photos were excluded because the literature review revealed that photos influence the trustworthiness of a website and were likely to influence

decisions made by dog owners. At the time the project commenced, there were no star ratings or verification processes used on the BorrowMyDoggy site. Therefore, the researcher wanted to investigate the effect of adding these trust cues to the prototypes. In particular, the researcher was interested in which of these cues would be most important to dog owners.

The term "verification" was not used on the BorrowMyDoggy site when the researcher began this project. It was later used to refer to how much information about their ID that the borrower had shared about themselves e.g. address, phone number, photo (see Figure 10 below).

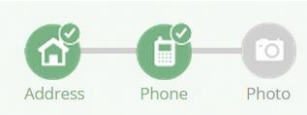


Figure 14: Verification process

The researcher was interested in what helped dog owners to make a decision about which borrower they trust, how much they trusted them and why. Also of interest was the level of trust in the website. The idea of investigating trust in a shared economy was novel, as previous academic work had mainly been carried out in the related area of e-commerce. Also, the concept of separating out trust in a person, and trust in a website was something which had not been investigated before.

3.7.2 Changes Made After Pilots

Pilot 1: Participant 1

The data from Participant 1 were removed from the study because the interview questions and tasks were carried out in a different order to subsequent participants. The researcher encouraged the participant to make their three choices (borrower, borrower rating, site rating) at the beginning of the session and then explained why they had made these choices after all conditions had been seen. This would have meant that the quantitative data and the more qualitative data would have been separated out on the audio recordings which would have made the qualitative data easier to analyse and transcribe.

However, it became apparent that the participant found it difficult to remember the reasons behind teir decisions after seeing all three conditions. It is also likely that having seen all conditions, the participant's answers may have been different when asked at the end, compared with if they had been asked along the way.

It was decided to ask participants for the reasons behind their choices, and to probe on any answers pertinent to the research questions of the study. This meant that qualitative data was scattered in and around the quantitative data. This made the interviews harder to transcribe, and is discussed as a limitation of this method (Section 3.10 Limitations and Potential Problems) as well as in the evaluation and reflection (Section 6: Evaluations, Reflections and Conclusions).

Pilot 2: Participant 2

Minor changes to question phrasing and timing were made after the second pilot session, but the majority of the session stayed the same. Therefore, data from participant 2 was included in the study.

3.8 DATA ANALYSIS

The analysis was conducted in two parallel streams, one dealing with the quantitative data, and the other with the qualitative. The initial quantitative analysis involved conducting tests for normality in terms of distribution on the quantitative data. This process suggested that the data was not normally distributed and therefore non-parametric tests were the best option (Section Ji Tests for Normality).

The statistical tests performed were as follows:

- Spearman's rho correlation coefficient to measure the statistical dependence between participants trust scores and their dispositional trust scores in each of the three conditions.
- Wilcoxon's signed rank test to compare the mean ranks of the trust measures i.e. borrower chosen, borrower rating and site rating between two conditions.
- Friedman's tests to detect differences in treatments across multiple test attempts. This is the non-parametric alternative to a parametric repeated measures ANOVA. Two tests were carried out the first for the borrower trust ratings and the second for the site trust ratings. As this test is a non-parametric analysis of variance, all conditions were included to look for interaction effects.

On the qualitative side semi-structured interview sections were transcribed and emerging themes were recorded on Post-it notes. Then Interpretative Phenomenological Analysis techniques were applied to help the researcher understand and identify meaning and themes.

3.8.1 Quantitative Analysis

Statistical analysis using IBM SPSS (v22) was an appropriate method of analysis for the quantitative data collected to answer RQ1 and RQ2. After all choices and scores were manually entered into an Excel spread sheet. See below for a screenshot of one of the tabs of this spread sheet. The full data file can be found on the USB stick which supports this project.

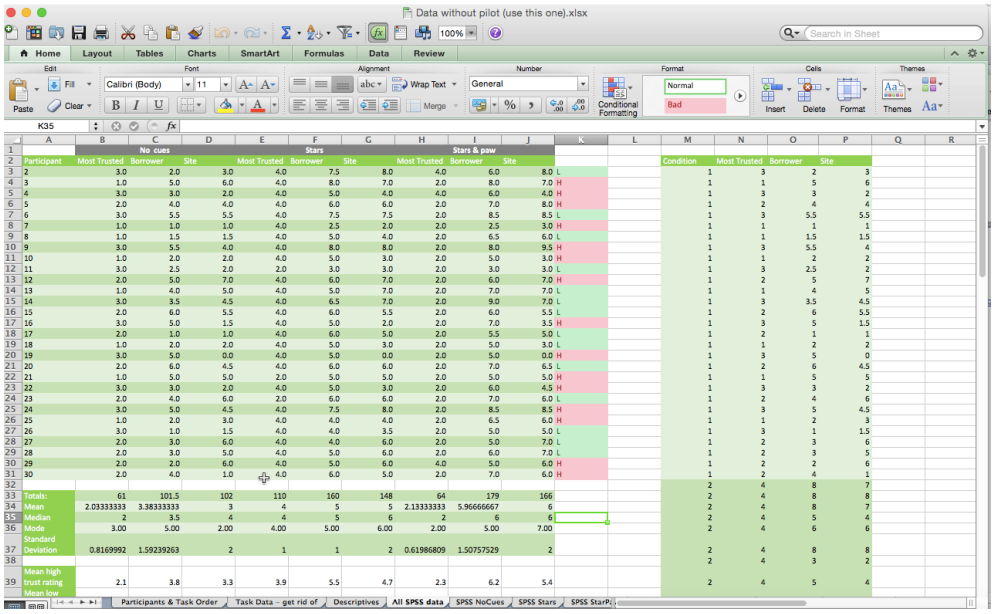


Figure 15: Excel data screenshot

All statistical tests carried out on the raw data were non-parametric. This was due to the initial tests for normality revealing that some of the data violated the standards for normally distributed data (See USB stick).

The following statistical tests were carried out and are broken down by research question:

- RQ1: What effect (if any) do star ratings and verification have on the perception of peer and site trustworthiness in a sharing economy website?

- Friedman's tests to detect differences in treatments across multiple test attempts. This is the non-parametric alternative to a parametric repeated measures ANOVA. Two tests were carried out, the first for the borrower trust ratings and the second for the site trust ratings. As this test is a non-parametric analysis of variance, all conditions were included to look for interaction effects.

- Wilcoxon's signed rank tests were used as post-hoc tests.
- There was no appropriate statistical test which suited the borrower choice data because of the issues in data collection mentioned previously (and discussed in depth as part of Section 6: Evaluation, Reflections and Conclusions). The researcher aimed to see if there was a relationship between the borrower chosen and their star rating. A Spearman's rho correlation was used here, but it was not entirely appropriate due to the data types involved.

RQ2: Can the participant's general levels of trust make a difference to trust ratings? If so, how?

- Spearman's rho correlation coefficient to measure the statistical dependence between participants' trust scores and their dispositional trust scores in each of the three conditions.

IBM SPSS (v22) was used to take this raw data and carry out statistical tests. See below for a screenshot of an SPSS output file. The full outputs can be found on the supporting USB stick.

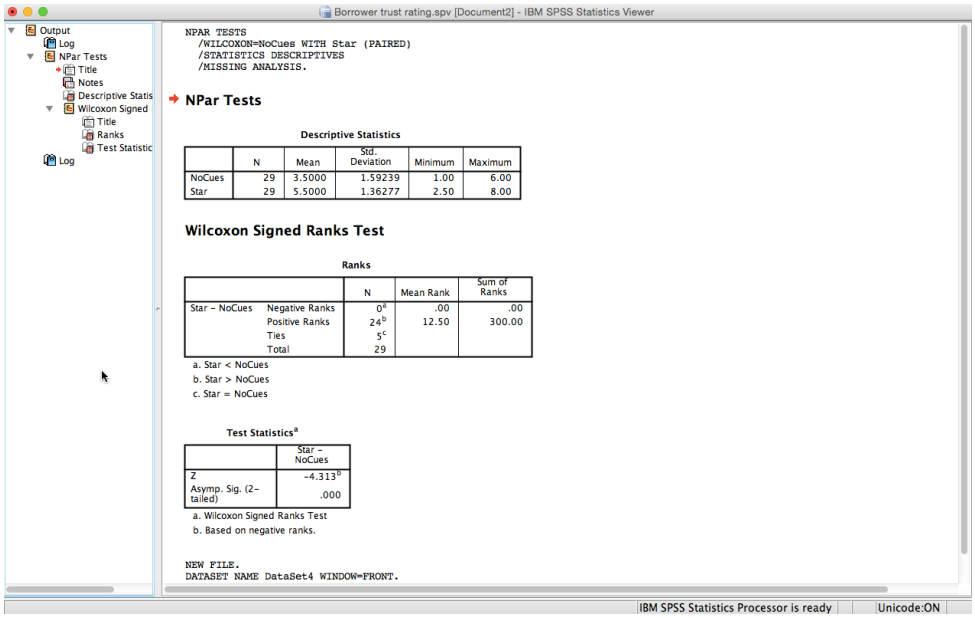


Figure 16: SPSS screenshot

3.8.2 Qualitative Analysis

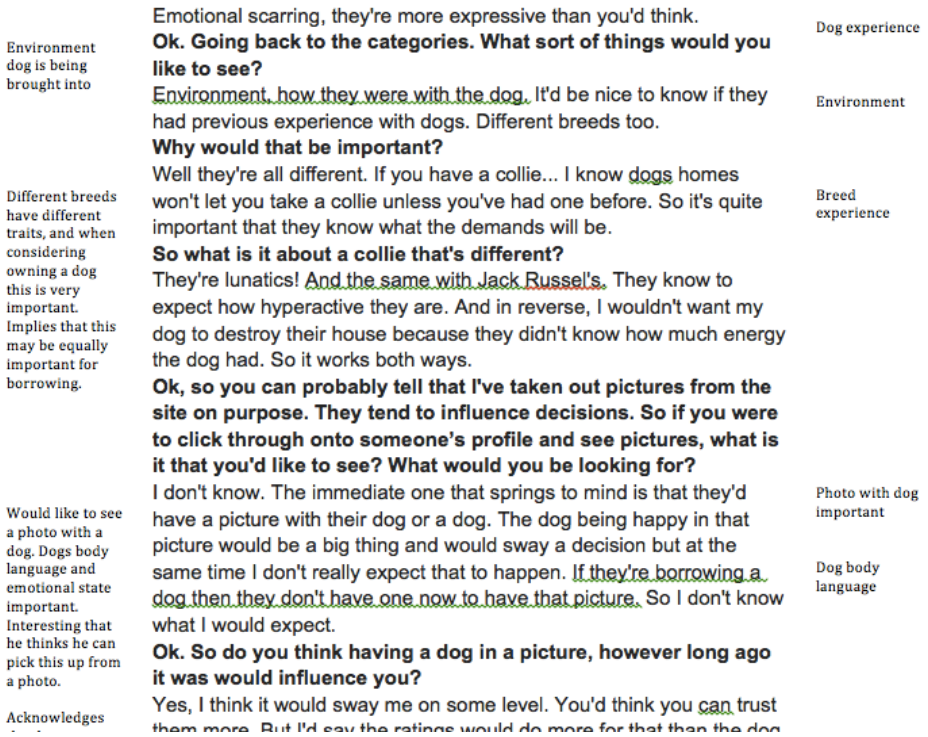
Qualitative data was used to answer RQ3, and required specific qualitative analysis. Interpretative Phenomenological Analysis (IPA) was chosen as an appropriate method because it aims to help understand how a person in a particular context makes sense of a particular situation or phenomenon. Personal significance is also a major part of the approach, which is suitable for the questions being asked as they relate to the information that the participant personally feels they need in order to make a decision about whether to trust a person with their dog or not. (Pietkiewicz and Smith, 2014)

IPA is a bottom-up approach which means it is driven by the data and the researcher generates themes and codes directly from the data, rather than using an existing theory and identifying codes which may be applied to the data. This is appropriate for a topic that has never been researched before, like trust in the sharing economy. It is also appropriate because there were no expectations of the data, i.e. no expected directions that the data would move towards. Qualitative data was collected to help the researcher understand what the experience of looking for information involved, how that information was used to inform a judgement of trust, and how participants made sense of the situation.

The first stage of IPA is transcribing the interviews. This was done using oTranscribe, a free Chrome web app which allows interviews to be played, paused, sped up and slowed down using keyboard

shortcuts within a Chrome web browsing session. The app also allowed the researcher to type directly into the browser and add time stamps if required. Once completed, these transcripts were copied and pasted into Word documents.

These Word documents had extra columns on the left and right. In this case, the left hand column was used to note down exploratory comments and observations, while the right was used to document emerging themes or codes. See below for an extract of the annotated transcript of the semi-structured interview with P8.



	Emotional scarring, they're more expressive than you'd think.	Dog experience
Environment dog is being brought into	**Ok. Going back to the categories. What sort of things would you like to see?**	
	Environment, how they were with the dog. It'd be nice to know if they had previous experience with dogs. Different breeds too.	Environment
	Why would that be important?	
Different breeds have different traits, and when considering owning a dog this is very important. Implies that this may be equally important for borrowing.	Well they're all different. If you have a collie... I know dogs homes won't let you take a collie unless you've had one before. So it's quite important that they know what the demands will be.	Breed experience
	So what is it about a collie that's different?	
	They're lunatics! And the same with Jack Russel's. They know to expect how hyperactive they are. And in reverse, I wouldn't want my dog to destroy their house because they didn't know how much energy the dog had. So it works both ways.	
	Ok, so you can probably tell that I've taken out pictures from the site on purpose. They tend to influence decisions. So if you were to click through onto someone's profile and see pictures, what is it that you'd like to see? What would you be looking for?	
Would like to see a photo with a dog. Dogs body language and emotional state important. Interesting that he thinks he can pick this up from a photo.	I don't know. The immediate one that springs to mind is that they'd have a picture with their dog or a dog. The dog being happy in that picture would be a big thing and would sway a decision but at the same time I don't really expect that to happen. If they're borrowing a dog then they don't have one now to have that picture. So I don't know what I would expect.	Photo with dog important Dog body language
	Ok. So do you think having a dog in a picture, however long ago it was would influence you?	
Acknowledges	Yes, I think it would sway me on some level. You'd think you can trust them more. But I'd say the ratings would do more for that than the dog	

Figure 17: IPA annotated transcript

Once themes had been identified, the researcher used Post-it notes to group these together into categories and identify emerging themes. Duplicates or overly similar themes were removed, and a full list of themes and codes was created (see supporting USB stick).

A qualitative research tool called Dedoose was used. This tool allowed the researcher to tag extracts of the transcripts and assign them to a particular theme or codes. Once all of the transcripts were coded, the researcher used Dedoose to export frequency and incidence data. This was used to identify which profile elements were the most important to the sample of dog owners. See below for a screenshot of a partially coded transcript.

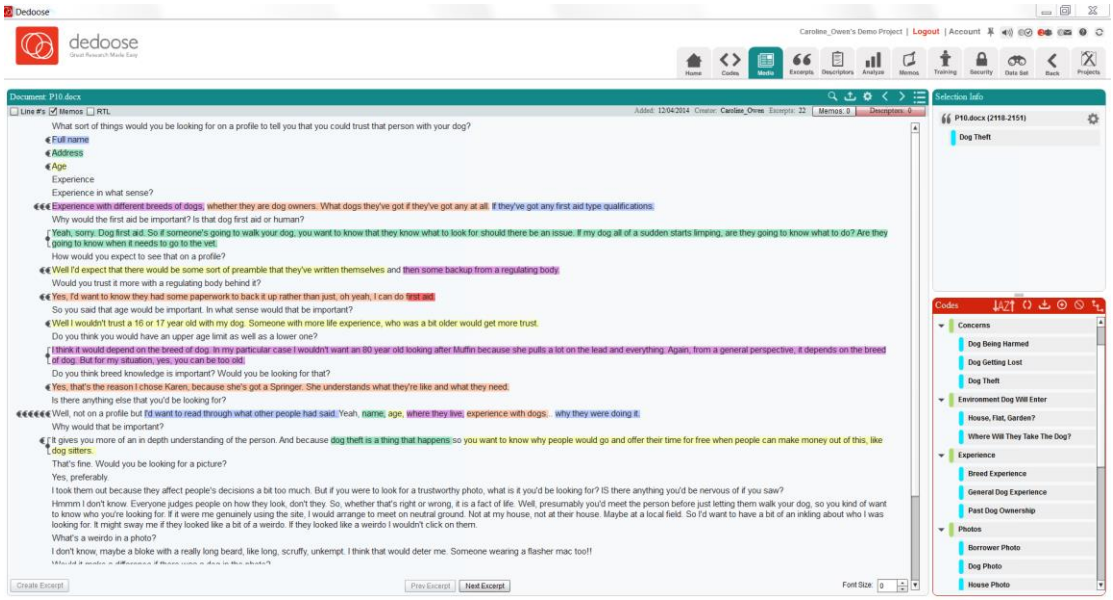


Figure 18: Dedoose coding screenshot

See below for a screenshot of the Dedoose interface which allowed for automated creation of word clouds and frequency tables.

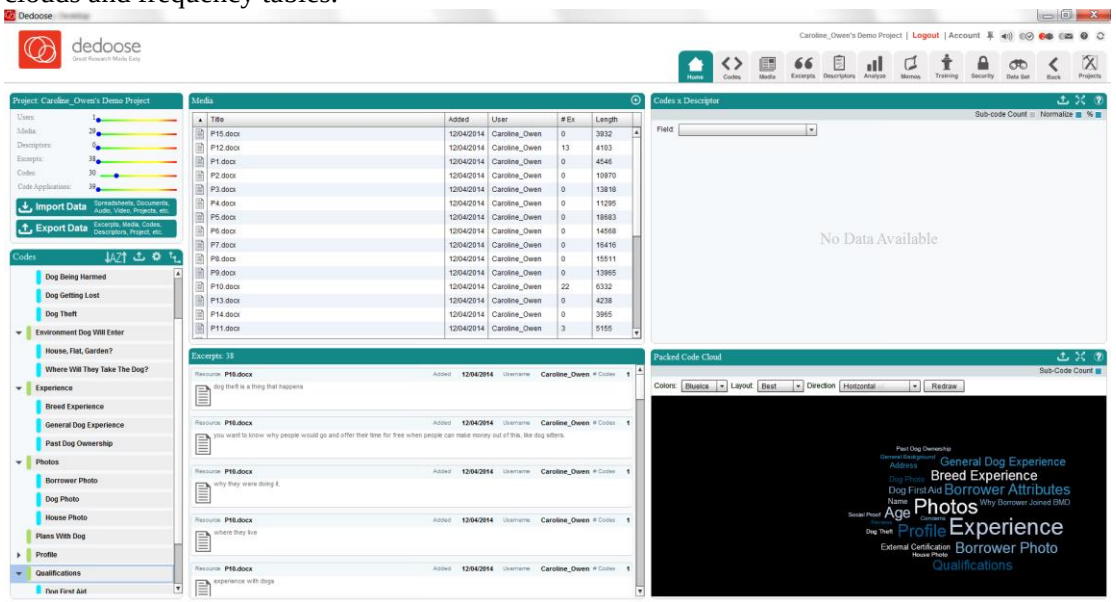


Figure 19: Dedoose dashboard screenshot

Participants scoring 3.92 or above on the dispositional trust questionnaire section of the research were assigned to the high dispositional trust group, and any scoring lower were assigned to the low dispositional trust group. Fifteen participants were part of the high dispositional trust group, while fourteen were part of the low dispositional trust group.

3.9 ETHICS

Many of the participants recruited were not previously known to the researcher. In the interests of safety and ethics for all concerned, all sessions with these participants were carried out either via Skype, or in public places such as coffee shops. Participants who were previously known to the researcher were also invited to have their sessions conducted in public places. However, in practice the researcher visited most of these participants in their homes. When conducting these sessions, the researcher was careful to make the participant feel at ease.

Informed consent was given, and all participants were aware that they could withdraw from the research at any time during or after the sessions. Participants were made aware that their voices were being recorded during the interviews, and that their data would be anonymised. The ethics and risk section of the initial project proposal (Appendix A: Project Proposal) fully covers issues relating to these areas.

3.10 Limitations and Potential Problems

All research methods have limitations, and mistakes cannot always be avoided. Especially in student projects, mistakes are an opportunity to learn and improve. Some methodological issues are discussed below.

3.10.1 Issues with measures

In the stars condition and the stars and verification condition, borrowers had individual star ratings (Emily =1, Oliver = 2, Sophia = 3, Jack = 4). These extra levels complicated the analysis for the borrower choice data. The specific issues are discussed in depth in Section 4: Quantitative Results and Discussion, as well as Section 6: Evaluation, Reflections and Conclusions. The issue stems from the fact that the choice of borrower may be affected by the number of stars a borrower has, not just whether stars are present or not, which is the premise that the research was designed for. Unfortunately this was not picked up by either the researcher or the supervisor during their meetings and only discovered after data collection had already taken place.

3.10.1.1 Qualitative data throughout

Due to changes in the session structure which had to be made after the first pilot participant, qualitative data (reasoning behind choices in the experimental conditions) were scattered throughout the sessions. It was the researcher's intention to keep this data in the interview part of the session to make analysis easier, but this structure did not work well in the pilot session.

4 QUANTITATIVE RESULTS AND DISCUSSION

The results are reported and discussed below. They are divided up per research question.

Data were collected and organised in Excel. An example can be found in Appendix I: Raw Session Data, and the rest of the comprehensive spreadsheet is available on the USB stick supporting this report.

The first stage of statistical analysis involved generating descriptive data, and then performing tests on the distribution of the data. Had the data all been normally distributed, parametric tests would have been the best choice of statistical test. Running parametric tests also lowers the chance of Type II error (a false null hypothesis being accepted).

Visual inspections of the histograms (Figure 16), normal Q-Q plots, Sharipo Wilk's tests ($p>0.05$) and investigations of skewness and kurtosis were carried out. These investigations revealed that while the majority of the data collected was normally distributed (and therefore suitable for parametric testing), data for the borrower choice dependent variable was not normally distributed. The researcher decided to include the borrower choice data in the research analysis. Therefore, in the interest of consistency it was decided that non-parametric statistical tests were appropriate. All SPSS outputs can be found on the USB stick supporting this project.

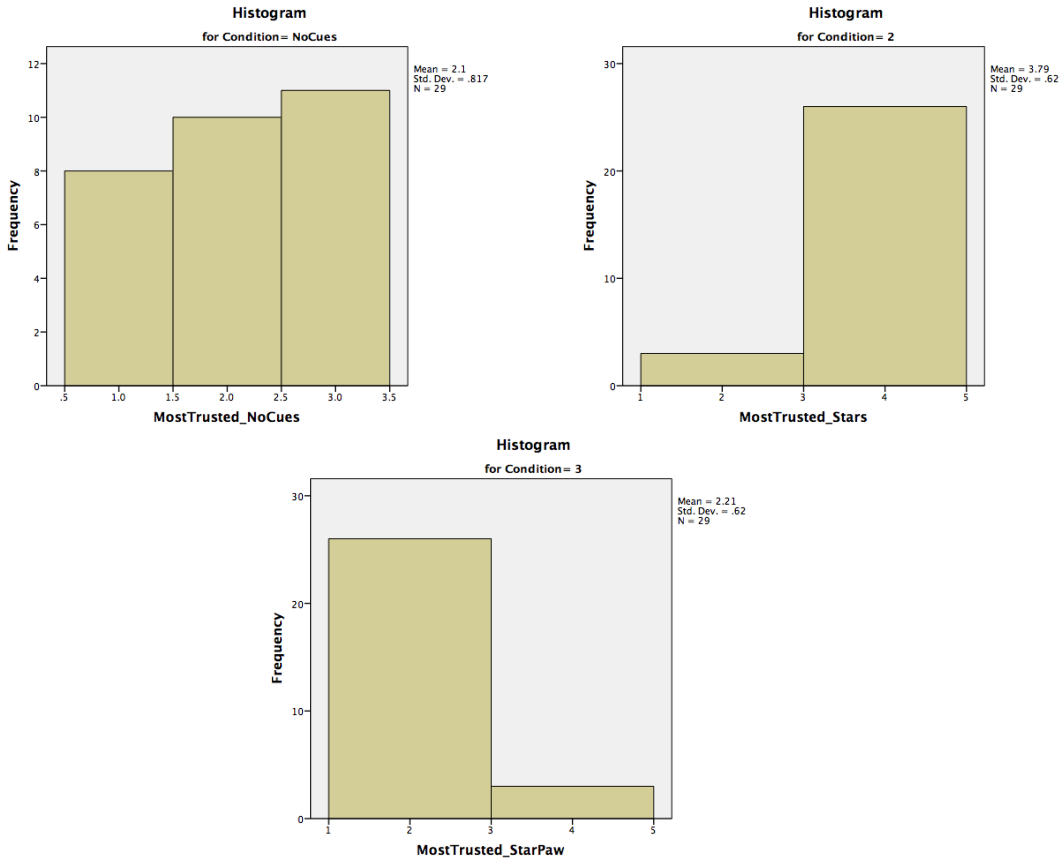


Figure 20: Borrower choice histograms

As previously discussed, after data collection had taken place, issues were found with the borrower choice data. It was found that a better way to collect this would have been to ask participants for trust ratings for all four potential borrowers they were presented with. However, as the majority of the data

had been collected correctly and could be analysed statistically, the researcher continued onto the next stage of the project. The borrower choice data was difficult to analyse as it did not fit any statistical test particularly well, but finding the most suitable way to analyse it was nonetheless an interesting activity.

Borrower choice data has been excluded from the figure below as it is weaker than the other two measures (borrower trust rating and site trust rating). The graph gives an overall impression of the data collected from the experimental section of the research. Participants are broken down into low trust and high trust groups based on their dispositional trust scores. Regardless of trust group, both borrower trust ratings and site trust ratings are lowest in the no cues condition, and highest in the stars and verification condition, with the stars condition in the middle. These results suggest that virtually re-embedding trust cues into the interface of the BorrowMyDoggy prototypes increased trust in both borrowers and the website as a whole.

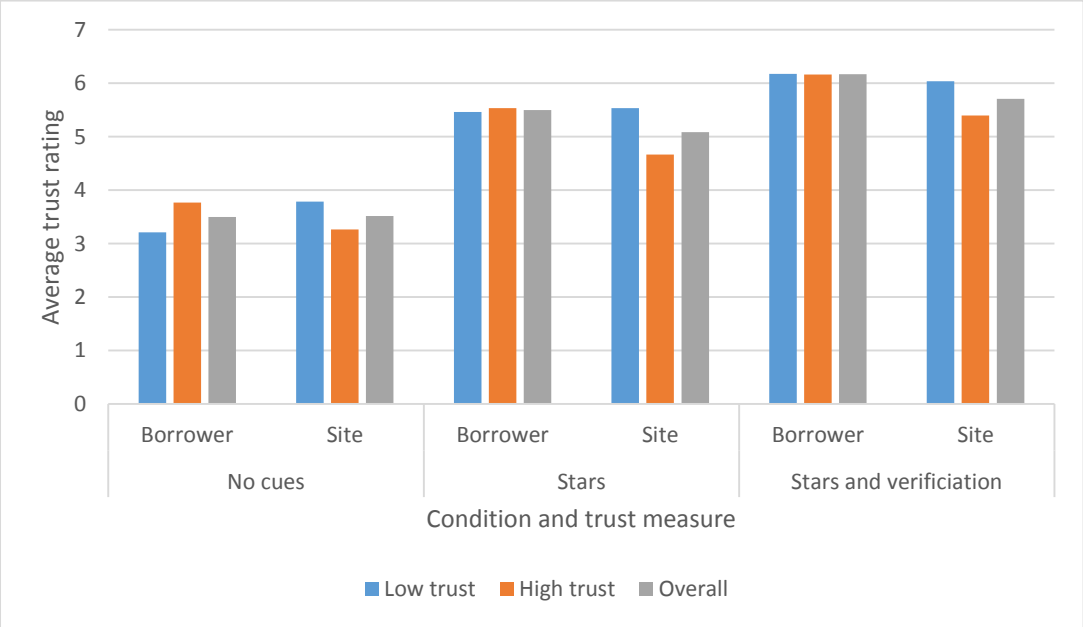


Figure 21: Average borrower and site trust ratings broken down by condition and trust group

4.1 RQ1: Star Ratings and Verification

Results from the experimental exploration of the following research question are reported below:

- RQ1: What effect (if any) do star ratings and verification have on the perception of peer and site trustworthiness in a sharing economy website

The hypotheses relating to this research question were the following:

H_0 There is no difference between experimental conditions for the borrower chosen as most trustworthy.
H_1 There is a difference between experimental conditions for the borrower chosen as most trustworthy.

H_0 There is no difference between experimental conditions for the borrower trust ratings.
H_1 There is a difference between experimental conditions for the borrower trust ratings.

H_0 There is no difference between experimental conditions for the borrower site ratings.
H_1 There is no difference between experimental conditions for the borrower site ratings.

4.1.1 Borrower choice

The borrower most frequently chosen as most trustworthy by participants' over all conditions was Sophia (39 times), followed by Jack (29 times), Emily (11 times) and finally, Oliver (8 times). See the table below for more details.

	Number of times chosen as most trustworthy			
	Oliver	Sophia	Emily	Jack
All Conditions	8	39	11	29
No Cues	8	10	11	0
Stars	0	3	0	26
Stars & Verification	0	26	0	3

Table 3: RQ1 borrower choice data

In the no cues condition, when participants only saw the names of four potential borrowers, all an equal distance away (0.25 miles), Emily was voted the most trustworthy more (11 times) than Sophia (10 times), Oliver (8 times) or Jack (0 times). This result is interesting because Jack was not chosen at all. A quote from the researcher's notes for P4 may shed a little light on the reasons why Jack was never chosen as the most trustworthy borrower in the no cues condition:

> *"There's nothing else to go on. Jack makes me think 'Jack-the-lad'"*
>
> P4, explaining why they would not trust Jack

It is unlikely that all participants had the same reasons for not trusting Jack, so it interesting to look at the trustworthiness of names, and the assumptions people make based on a name. Research has shown that middle name initials enhance evaluations of intellectual performance (van Tilburg et al., 2014). However, this cannot be the case for the present study, as only first names are presented. Another study in this area found that information provided by people with easier to pronounce names was more likely to be believed (Newman et al., 2014). This is unlikely to be an issue in the case of the present study, as most English-speaking people can easily pronounce "Jack". Also, all names used in this study were purposefully chosen because they are common in the UK.

To investigate whether the number of stars they were presented with had an impact on the person chosen as most trustworthy, a Chi-Square test was conducted to test for association between the borrower chosen (Oliver=1, Sophia=2, Emily=3, Jack=4) and the star ratings they were given (Oliver=2, Sophia=3, Emily=1, Jack =4) in the star ratings condition and the star ratings and verification condition.

A non-parametric Spearman's rank order correlation was conducted to determine the relationship between the number of stars each borrower had and how often they were chosen as the most trustworthy in the two experimental conditions where star ratings were shown (star ratings, star ratings and verification). There was very strong, positive monotonic correlation between the number of stars each borrower had and how often they were chosen as the most trustworthy in the stars condition (r_s=1.00, n=29, p<0.01). There was also very strong, positive monotonic correlation between the number of stars each borrower had and how often they were chosen as the most trustworthy in the stars and verification condition (r_s=1.00, n=29, p<0.01).

These results seem promising, but this statistical test was unfortunately just the researchers "best educated guess" at how to deal with the data. As such, all results associated with it should be approached with caution.

The descriptive statistics associated with the borrower choice data are slightly more valid, and are discussed below.

It is interesting to break the data down into male names (Oliver, Jack) and female names (Sophia, Emily).

Figure 22: Male and female borrowers chosen as most trustworthy in all conditions

When there were no other clues about trustworthiness, female names are more likely to be chosen. In fact in the no cues condition, 73% of participants chose a female name, compared with 27% choosing a male name as the most trustworthy. However, when star ratings are introduced, and a male (Oliver=0, Jack=26) borrower has the most stars, 90% of participants chose Jack as the most trustworthy. This could imply that when there is no other information available, participants are more likely to choose a female name. On the other hand, once some trust cues are present in this case, star ratings, this initial preference for female names is superseded, and participants choose borrowers based on their star ratings.

Overall, female names were chosen more times overall than male names. This could indicate that female names are more trustworthy than male names, or that females (the majority of participants) prefer to trust other females. This would support existing studies such as Rudman and Goodwin (2004). They found that women are more likely to trust other women, than men are to trust other men. Further research into the effects of gender on trust, specifically in the shared economy, would help shed some light on this subject.

4.1.2 Borrower trust rating

The lowest borrower trust rating given by participants' over all conditions combined was 1, and the highest was 9. The mean borrower trust rating given by participants' over all conditions combined was 5.25, with a standard deviation of 1.91.

The borrower trust ratings were highest in the stars and verification condition (mean=6.17, standard deviation=1.51) and lowest in the no cues condition (mean=3.50, standard deviation=1.59). See the table below for more details.

	Lowest	Highest	Mean	Standard Deviation
All Conditions	1	9	5.25	1.91
No Cues	1	6	3.50	1.59
Stars	2.5	8	5.50	1.36
Stars & Verification (StarPaw)	2.5	9	6.17	1.51

Table 4: RQ1 borrower trust data

Box and whisker plots for each condition are shown below and show the minimum (lowest), maximum (highest), median and quartile information.

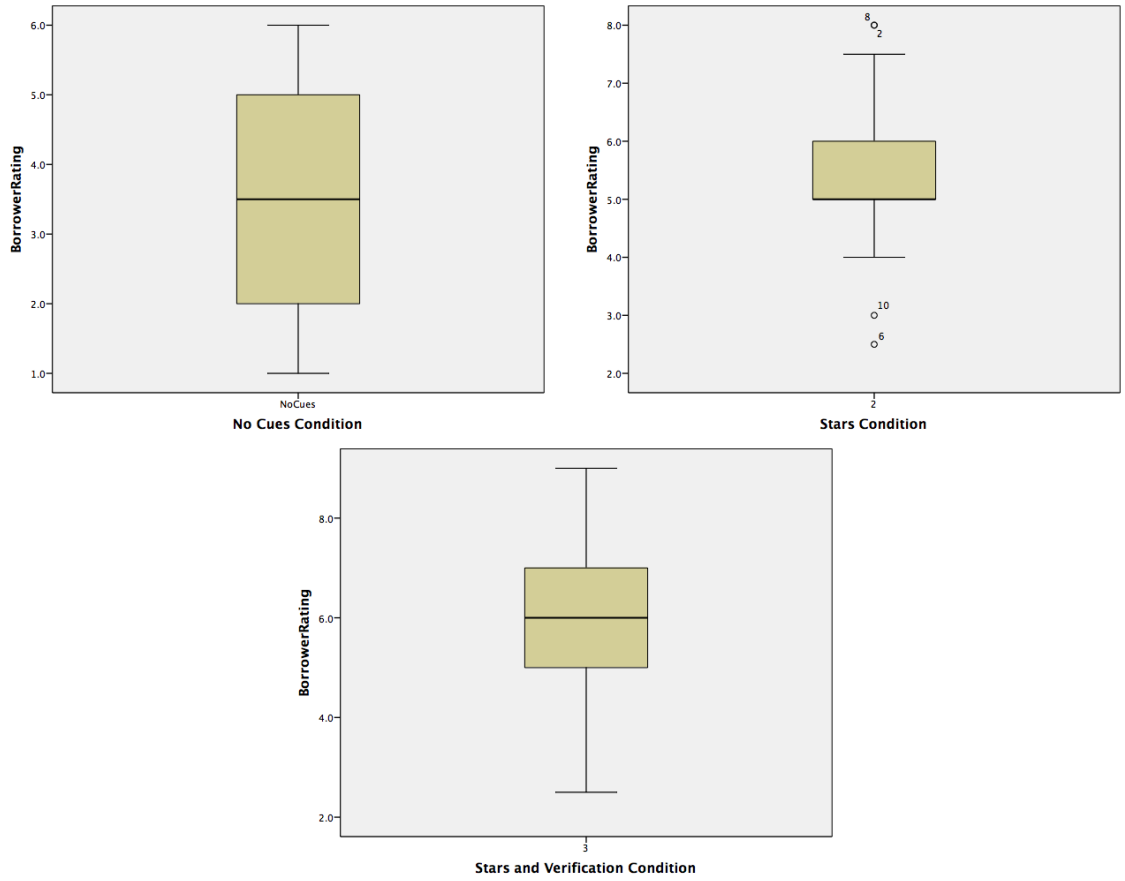


Figure 23: Box and whisker plots for RQ1 borrower trust data

A non-parametric Friedman test of differences among repeated measures was conducted and rendered a Chi-Square value of 44.68, which was significant ($p<0.001$). Post hoc analysis with Wilcoxon signed-rank tests was conducted with a Bonferroni correction applied, resulting in a significance level set at $p<0.017$ (0.05/3). Median borrower trust ratings for the no cues, stars and stars and verifications conditions were 3.5 (1 to 6), 5 (2.5 to 8) and 6 (2.5 to 9) respectively. There were significant differences between the no cues condition and the stars conditions ($Z=-4.313$, $p<0.001$), the no cues condition and the star and verification condition ($Z=-4.510$, $p<0.001$) and the stars condition and star and verification condition ($Z=-3.177$, $p<0.001$).

It is worth noting that in SPSS, the significance levels for the first two Wilcoxon signed-rank tests were reported as significant to $p<0.000$, which were rounded to $p<0.001$ as per the usual convention. However, the final test was significant to $p<0.001$ by default in SPSS, making it slightly less

significant.

The null hypothesis is therefore rejected and the alternative hypothesis that there is a difference between experimental conditions for the borrower trust ratings is accepted.

The findings indicate that, at least in the context of the BorrowMyDoggy shared economy network, star ratings increase reported levels of trustworthiness in the person chosen as most trustworthy. This fits with existing research in e-commerce, and other peer-to-peer settings such as eBay. However, it is a novel, if not unsurprising finding for a shared economy network.

The findings also indicate that adding a verification indicator to the star ratings, increase reported levels of trustworthiness in the person chosen as most trustworthy. This is a new finding, as this has not been investigated before now.

4.1.3 Site trust rating

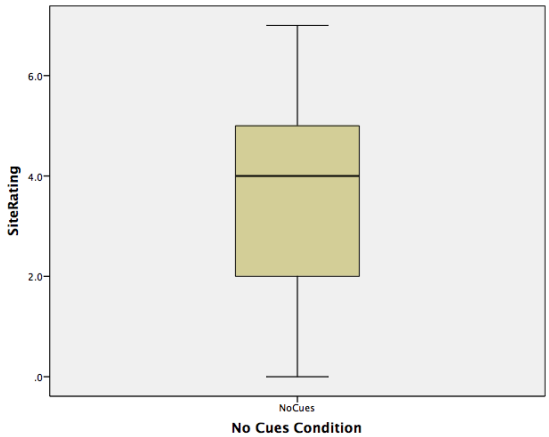
The lowest site rating given by participants' was 0 and the highest was 9.5. The mean site trust rating given by participants' over all conditions combined was 4.95, with a standard deviation of 2.00.

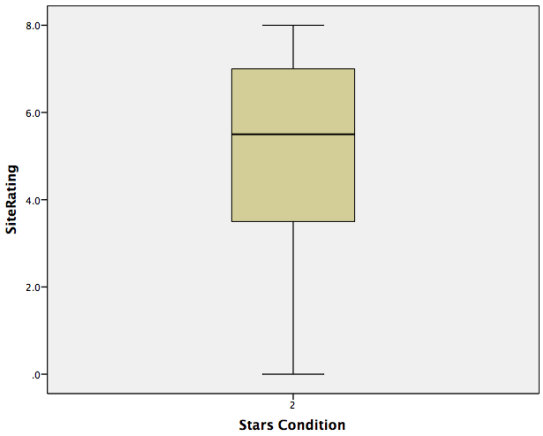
The site trust ratings were highest in the stars and verification condition (mean=5.71, standard deviation=2.11) and lowest in the no cues condition (mean=3.52, standard deviation=1.98). See the table below for more details.

	Lowest	Highest	Mean	Standard Deviation
All Conditions	0	9.5	4.95	2.00
No Cues	0	7	3.52	1.98
Stars	0	8	5.09	2.07
Stars & Verification	0	9.5	5.71	2.11

Table 5: RQ1: site trust data

Box and whisker plots for each condition are shown below and show the minimum (lowest), maximum (highest), median and quartile information.





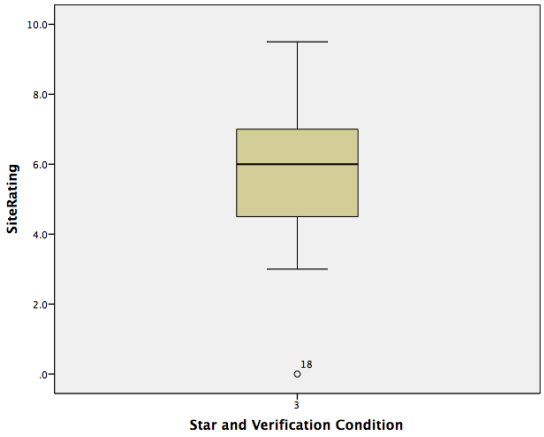


Figure 24: Box and whisker plots for RQ1 site trust data

A non-parametric Friedman test of differences among repeated measures was conducted and rendered a Chi-Square value of 42.17, which was significant ($p<0.001$). Post hoc analysis with Wilcoxon signed-rank tests was conducted with a Bonferroni correction applied, resulting in a significance level set at $p<0.017$ (0.05/3). Median site trust ratings for the no cues, stars and stars and verifications conditions were 4 (0 to 7), 5.5 (0 to 8) and 6 (0 to 9.5) respectively. There were significant differences between the no cues condition and the stars conditions ($Z=-4.137$, $p<0.001$), the no cues condition and the star and verification condition ($Z=-4.212$, $p<0.001$) and the stars condition and star and verification condition ($Z=-3.325$, $p<0.001$).

It is worth noting that in SPSS, the significance levels for the first two Wilcoxon signed-rank tests were reported as significant to $p<0.000$, which were rounded to $p<0.001$ as per the usual convention. However, the final test was significant to $p<0.001$ by default in SPSS, making it slightly less significant.

The null hypothesis is therefore rejected and the alternative hypothesis that there is a difference between experimental conditions for the site trust ratings is accepted.

The findings indicate that, at least in the context of the BorrowMyDoggy shared economy network, star ratings increase reported levels of trustworthiness in the website. This fits with existing research in e-commerce, and other peer-to-peer settings such as eBay. However, it is a novel, if not unsurprising finding for a shared economy network.

4.1.4 Summary

The findings of this research demonstrate that there are statistically significant differences in borrower trust rating and site trust ratings between experimental conditions. Thus, the null hypotheses were rejected and the alternate hypotheses were accepted. Star ratings and verification indicators both have an effect on trust ratings given by participants. There were issues in data collection (and therefore analysis) for the borrower choice data, but the descriptive data alone helped to build on knowledge in the domain of trust in the shared economy. Valuable lessons have been learned during the course of this project.

Many questions have been raised through this research, but the most pertinent for future research may be the following:

- Does gender impact trust in the shared economy?
- Are some names more trustworthy than others?

The concept of using two affect based trust antecedents and trying to infer importance based on participant decisions is novel, so there has been little work which is directly comparable.

4.2 RQ2: Dispositional Trust

Results from the experimental exploration of the following research question are reported and discussed below:

- RQ2: Can the participant's general levels of trust make a difference to trust ratings? If so, how?

The research hypotheses relating to this research question were the following:

H_0 Levels of dispositional trust have no effect on borrower trust ratings.

H_1 Levels of dispositional trust have an effect on borrower trust ratings.

H_0 Levels of dispositional trust have no effect on site trust ratings.
H_1 Levels of dispositional trust have an effect on site trust ratings.

The highest average dispositional trust score was 4.42 and the lowest was 3.17 (mean=3.69, standard deviation 0.33). The dispositional trust scores were calculated as the average scores across all four dimensions of dispositional trust (benevolence, integrity, competence and trusting stance). See the table below for more details.

	Lowest	Highest	Mean	Standard Deviation	Median
Average dispositional trust score (average of all dimensions)	3.17	4.42	3.69	0.33	3.92
Average benevolence score	2.33	4.33	3.56	0.63	4.00
Average integrity score	2.00	4.00	3.54	0.54	4.00
Average competence score	2.67	5.00	3.54	0.57	3.67
Average trusting stance score	3.33	5.00	4.12	0.59	4.33

Table 6: RQ2: Dispositional trust data

Note: Participants were divided into high and low dispositional trust groups around the mean score of 3.92. These groupings were used as part of answering RQ1 and RQ3.

A box-and-whisker plot is shown below for the average dispositional trust scores:

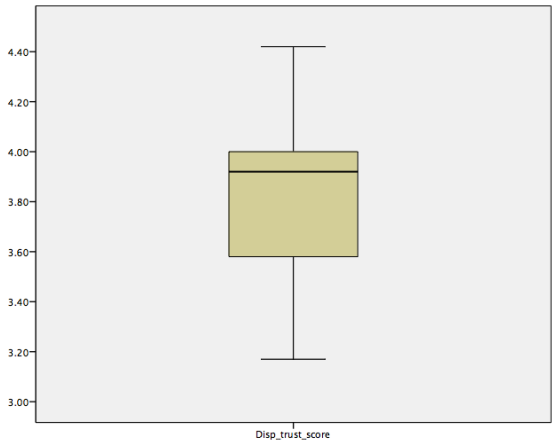


Figure 25: Box and whisker plot for dispositional trust data

Spearman's rho correlations were carried out comparing participants' dispositional trust scores (calculated using their average score over all four dimensions of dispositional trust), and the borrower trust ratings and site trust ratings they gave in each experimental condition.

4.2.1 Borrower Rating

In each of the three conditions, a Spearman's rank order correlation was conducted to determine the relationship between participants' dispositional trust scores and the trust ratings they gave for their chosen borrower. There were no significant correlations reported between dispositional trust score and borrower trust rating for any condition.

The scatter graph below (Figure 13) shows very weak correlation between dispositional trust scores and borrower trust ratings in all conditions. The monotonic function of all correlations is difficult to

identify, as they are so weak. These findings are discussed in more detail with regards to statistical tests.

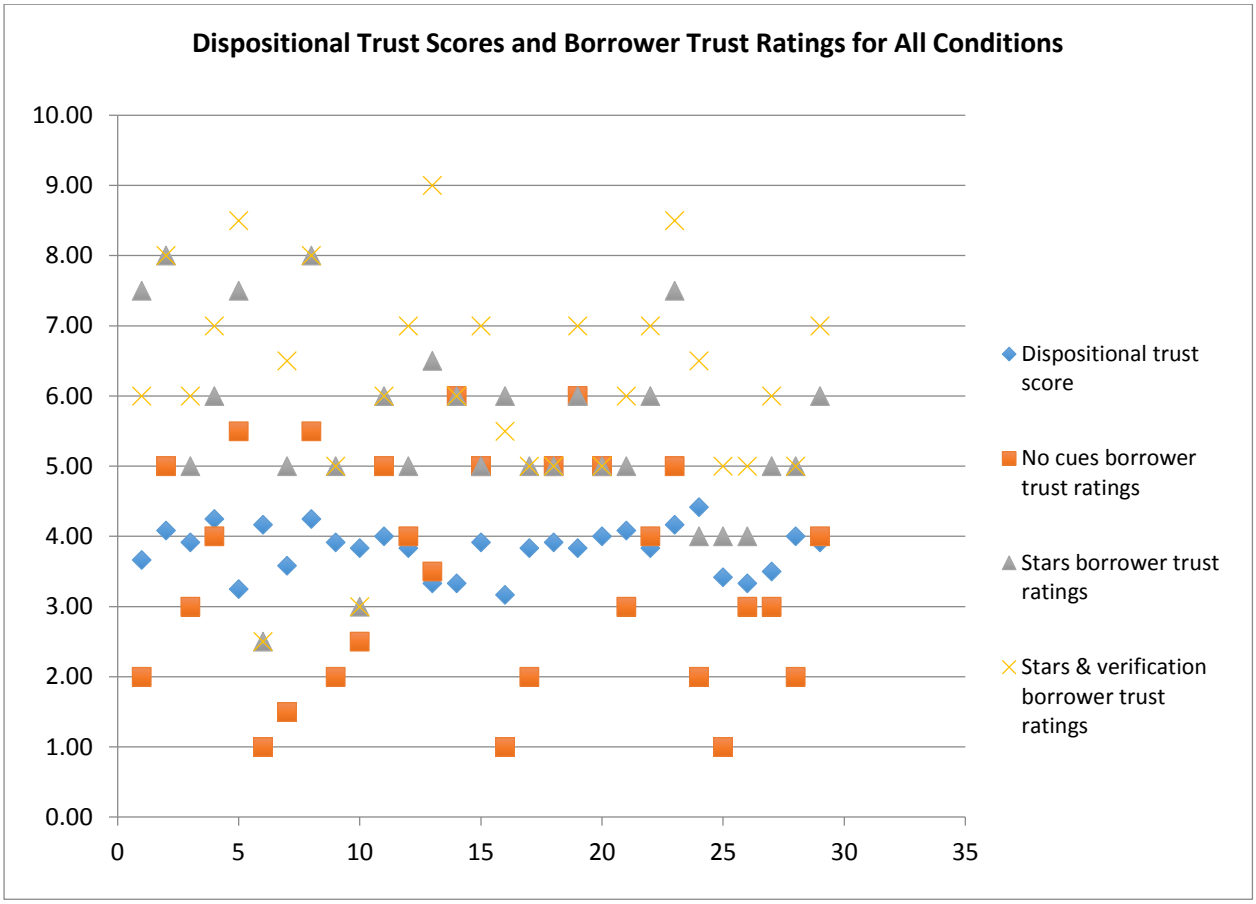


Figure 26: Dispositional trust scores and borrower trust ratings for all conditions

A non-parametric Spearman's rank order correlation was conducted to determine the relationship between 29 participants' dispositional trust scores and borrower trust ratings in all three experimental conditions. There was very weak, positive monotonic correlation between dispositional trust scores and borrower trust ratings in the no cues condition (r_s=0.13, n=29, p>0.05). There was very weak, negative, monotonic correlation between dispositional trust scores and borrower trust ratings in the star ratings condition (r_s=-0.02, n=29, p>0.05). Finally, there was very weak, monotonic correlation between dispositional trust and borrower trust ratings in the stars and verification condition (r_s=-0.01, n=29, p>0.05).

Therefore, the alternate hypothesis is rejected and the null hypothesis that levels of dispositional trust have no effect on borrower trust ratings, is accepted.

4.2.2 Site Rating

The same process was carried out to determine the relationship between participants' dispositional trust scores and the trust scores they gave for each version of the website (prototype). Three Spearman's rank order correlations were carried out and there were no significant correlations reported between dispositional trust score and site trust rating for any condition. Figure 14 provides a breakdown of the very weak correlation.

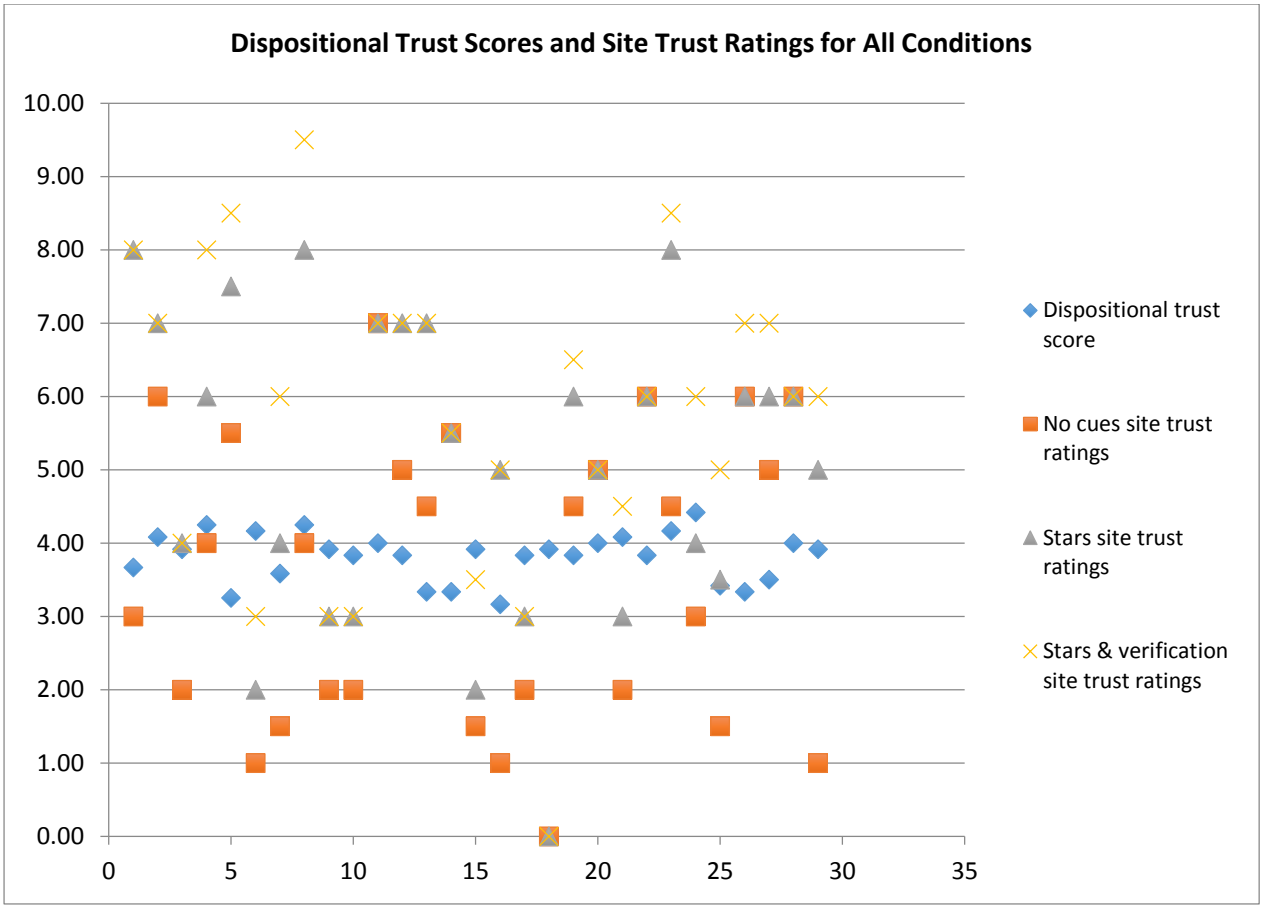


Figure 27: Dispositional trust scores and site trust ratings for all conditions

A non-parametric Spearman's rank order correlation was conducted to determine the relationship between 29 participants' dispositional trust scores and site trust ratings in all three experimental conditions. There was very weak, negative monotonic correlation between dispositional trust scores and site trust ratings in the no cues condition (r_s=-0.04, n=29, p>0.05). There was very weak, negative, monotonic correlation between dispositional trust scores and borrower trust ratings in the star ratings condition (r_s=-0.07, n=29, p>0.05). Finally, there was extremely weak, monotonic correlation between dispositional trust and borrower trust ratings in the stars and verification condition (r_s=-0.00, n=29, p>0.05).

4.2.3 Summary

The findings from this research suggest that there is very weak to no correlation between dispositional trust scores and trust ratings for both borrower trust ratings and site trust ratings. Other research has also concluded that dispositional trust may not be connected to trust behaviour. For example, Li and Zho (2009) found that dispositional trust levels had no obvious influence on technology trust, which refers to understanding the mechanisms behind e-commerce security. This research is particularly relevant to the site trust ratings.

As these data were actually normally distributed (but also to satisfy curiosity), the researcher conducted a Pearson's correlation calculation to investigate whether the insignificant result was due to the decreased sensitivity of non-parametric tests such as Spearman's. These results were also insignificant (see SPSS outputs on USB stick for more details).

5 QUALITATIVE RESULTS AND DISCUSSION

Results from the experimental exploration of the following research question are reported and discussed below:

- RQ3: What profile elements help dog owners to make a decision about whether to trust a potential borrower?

To answer this question, semi-structured interviews were carried out. Interviews were recorded, transcribed (see Appendix K: Interview Transcript for P18 for an example, and the supporting USB stick for the other transcripts) and analysed using Interpretative Phenomenological Analysis (IPA) and then the transcripts were coded using Dedoose. Twenty-eight interviews were analysed; a technical issue caused the interview recording for P28 to fail.

Participants were divided into two groups; high dispositional trust and low dispositional trust based on their scores in the questionnaire section of the research. This idea to divide participants in this way came originally from work by Sherwani and Stumpf (2014). Dispositional trust scores were divided around the median overall score (3.92). Fifteen participants fell into the high dispositional trust group, while fourteen were identified as having low dispositional trust.

In this section, the most frequently mentioned profile elements for each group will be analysed below and then the most significant findings discussed. The full coding scheme with examples can be found on the supporting USB stick.

Qualitative analysis showed that participants were looking for the following profile elements when making a decision about whether to trust a potential borrower:

- Background
- Experience
- Intentions
- Community

Figure 15 gives an overview of all major and minor codes identified and the number of transcripts they were assigned to.

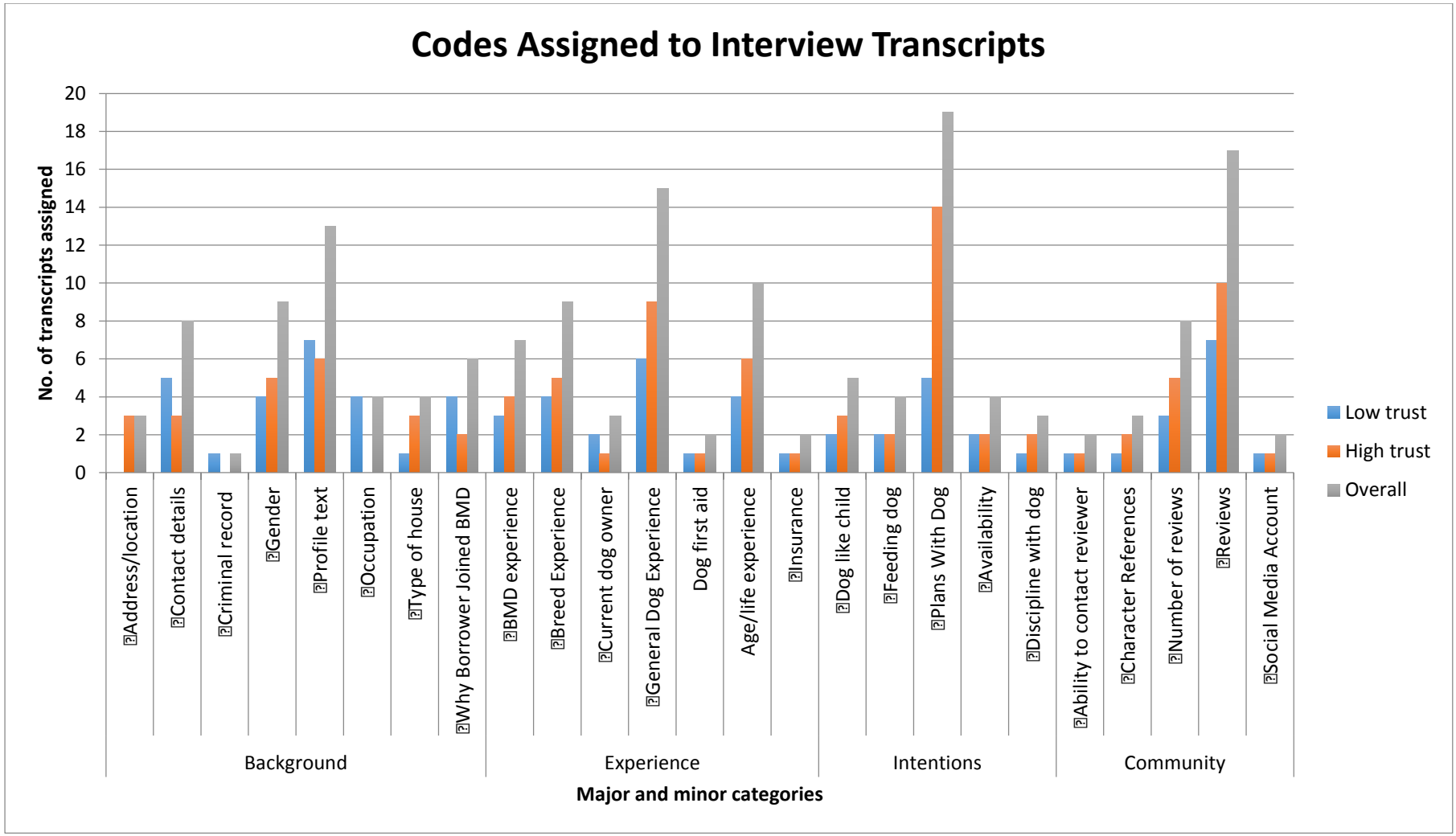


Figure 28: This graph shows how many codes were assigned to participants interview transcripts. This is broken down into transcripts from participants in the low dispositional trust and high dispositional trust groups.

5.1.1 Background information

Participants searched for specific background information on a borrower profile. The table below shows the number of participants who mentioned each code. This is further broken down into the high and low trust groups.

Code	Overall	Low Trust	High Trust
Address/location	3	0	3
Contact details	8	5	3
Criminal record	1	1	0
Gender	9	4	5
Profile text	13	7	6
Occupation	4	4	0
Type of house	4	1	3
Why Borrower Joined BorrowMyDoggy	6	3	2

Table 7: Background information

The three most frequently assigned codes overall are discussed in more depth below:

- Profile text
- Gender
- Contact details

Profile text

Thirteen out of twenty eight participants specifically mentioned that they would expect to see a general preamble on the profile of a borrower. For example:

> *"I would expect the person to have a description of themselves"*
>
> P25, on profile text

When questioned about why this information would be important for helping them make a judgement about whether or not to trust the borrower, participants were interested in getting to know the person.

> *"Something about the person so you can get a feel for who they are"*
>
> P14, on profile text

The idea of being able to pick up information about what a person is like through what they choose to include on their profile links to existing research into the role of emotion in trust behaviours. Whereas cognitive trust has been strongly linked to the competence and responsibility of the information provider (Cook and Wall, 1980, cited in Xu, 2014), affective trust is driven by emotion. Johnson and Grayson (2005) used surveys to examine both cognitive and affective trust in service providers and found that cognitive and affective trust are highly correlated, but empirically distinguishable. They found that participants' feelings towards the information provider were based on the perception of openness, warmth and friendliness. This can be linked to the present research, as participants expressed themselves using emotive language, and tried to get a "feel" for the borrower and their

character from the information provided on a profile. However, it is important to remember that the work by Johnson and Grayson (2005) was conducted from a marketing perspective. The researchers were using principles of social psychology to improve satisfaction ratings for financial services providers. Also, in the sharing economy, the person borrowing or accessing a commodity (in this case, a dog) is not necessarily providing a chargeable service, which changes the relationship dynamic of the information provider and the person reading it.

Despite the criticisms of the particular research, the finding that affective trust between individuals is linked to emotion is reasonably well established. For example, Johnson-George and Swap (1982) demonstrated that participants were able to rate each other as untrustworthy with personal confidences (in a manipulated situation), without contaminating impressions of reliability, thus exposing different types of trust. Emotional trust would be an interesting avenue for future research into the shared economy because people are often lending personal items. In fact, the act of lending implies that the item must be returned, and specifically exploring the emotional risks involved would be a fascinating endeavour. For instance, lending or borrowing a dog using BorrowMyDoggy is likely to be a more emotional experience than lending or borrowing a lawnmower using Zilok, a resource sharing network.

Another emotional feature picked up in the present research was that adding more profile information implied a higher level of effort and interest. This was important to participants, for example:

> *"With these kinds of things, the more information the better. If you just put three or four lines, you're less likely to get picked because it doesn't show that you're that interested"*
>
> P17, on profile information

This idea is somewhat supported by existing research. A survey carried out by Chronos and BlaBlaCar (2012) found that a complete profile resulted in trust levels of 4.2. Survey responses were measured on a scale from 0 "do not trust" to 5 "trust a lot". This finding is particularly interesting because it is approaching the trust level that respondents assigned to family members (4.68) and friends (4.71). Caution is advised when referring to commercial research where the company (BlaBlaCar, a car sharing network) has been involved. However, the research was conducted in a shared economy environment and is more directly applicable than e-commerce work.

Gender

When recruiting participants, it was not anticipated that gender would become a theme that affected trust in potential dog borrowers. However, throughout the research, gender became more and more prominent. As discussed in Section 6: Evaluation, Reflections and Conclusions, if the research were to be repeated, a more balanced split of participants would be recruited.

Several participants expressed safety or comfort concerns with regards to meeting a stranger from the Internet. For example:

> *"If you're going to meet up with somebody using the internet, I would feel more comfortable with meeting up with a woman... because I trust them more... feeling safer"*
>
> P22, on feeling safer meeting women

This focus on safety could be linked to physical differences between the sexes, i.e. on average men are larger, stronger and faster than women. However, there has also been extensive research into the effects of gender on trusting behaviour.

Sexual orientation, gender and trust are topics that do not appear to have been explored in its own right. P5 hinted that her sexual orientation could be linked to whom she chooses to trust:

> *"Maybe being a female and having a female girlfriend, I guess... I'm just more drawn to females. Not in that sort of way! Maybe it's just a female thing. You know what you're like and maybe you think that they'll be the same. But I don't know any male dog owners so maybe that's why I'm more drawn to her"*
>
> P5, on her preference for females

This would be a very interesting direction for future research. While trust has been investigated in terms of interpersonal trust and "coming out" (Boon and Miller, 2008), there does has not been a specific focus on sexuality with regards to trust, online or otherwise.

Other research has investigated gender and trust without considering sexual orientation as a factor. Rudman and Goodwin (2004) found that across four experiments, women's in-group bias was significantly stronger than men's. This means that women are more likely to trust other women, than men are to trust other men. This could explain why P6 would prefer to trust another woman:

> *"It sounds more sexist, but I think I'd be more likely to trust a woman. So if that said Jackie rather than Jack, they would possibly have been rated higher"*
>
> P6, on why she is more inclined to trust women

Buchan et al. (2007) examined the relationship between trust and gender using an investment game. They found that men trust more than women, and that women are more trustworthy than men. Similarly, Rudmand and Goodwin (2004) found a pro-female bias in their male participants. As this was a psychological study, the researchers looked at the motivations behind this finding. They found that participants automatically favoured their mothers over their fathers. It was concluded that females were associated with maternal bonding, and males were associated with intimidation and violence. This could be used to explain why P11 preferred women to look after his dogs:

> *"Me personally, I am for women doing the job. I'm not sexist in any way, shape or form. It's just my personal preference"*
>
> P11, on why he prefers women to look after his dogs

However, the small sample size involved in the study, as well as the academic discipline that the researchers' came from could have influenced the interpretation of the results. The idea that trust in gender roles could be so binary seems counterintuitive and highly worthy of further research. However, the idea that women are perceived as maternal fits with the responses that the participants in the present study gave with regards to finding someone to take care of their dog. For instance, P9 felt that women understood the emotions of her dogs better than men:

> *"Dogs do respond better to kindness and gentleness. You need to dominate them a little bit to be the boss but they like gentle people. Women pick up on emotions and things better than men"*
>
> P9, on women getting along better with her dogs

Contact details

Participants expressed an interest in contacting the potential borrower in some way before arranging to meet them. For example:

> *"I think you'd want some way to contact them and speak to them ahead of time"*
> P14, on why she would like contact details

Participants differed on their preferred methods of communicating with potential borrowers. The majority would prefer to speak to the person through online chat, or an in-built email style service. For example:

> *"I think I'd like to be able to have a conversation with them. I think initially I'd like to do that through online chat, just because of the kind of person I am. I don't want to pick up the phone and speak to a stranger, which could be awkward anyway. So maybe an email address that I could email and get a feel for..."*
> P25, on her preferred method of contacting a potential borrower

However, others specified that they would rather call the borrower directly. For example:

> *"I think in this instance it would be, for me, it would be a call. I wouldn't want to sit down and write a message on Facebook. I'd just give a call if there was anything that gave me any indication that anything was wrong, I'd need to call straight away I think"*
> P24, on why she would prefer a phone number

Both P24 and P25 were part of the high dispositional trust group, so their differing opinions cannot be explained through differences in trust beliefs. However, on closer inspection of both quotes, they do appear to be talking about different stages of letting someone borrow their dog through BorrowMyDoggy. P24 referred to initial contact being based in online messages, where as P25 was referring to a situation where a borrower is currently with her dog. In that situation, P25 would want to call the borrower if she had a feeling that someone was wrong (perhaps the borrower was late returning the dog).

Text-based communication was initially the only form of online communication available to Internet users due to restrictions in bandwidth, compression and processing power. In his PhD thesis on trust in computer-mediated communication, Riegelsberger (2005) points out that despite these restrictions becoming less powerful, text-only representations are still frequently used in e-commerce. These methods still offer advantages, for example:

- Easy archiving
- Searchable data
- Messages are easily reviewed

This familiarity could explain why participants involved in the present study were comfortable with text-based communication at least as an initial step. Where the shared economy differs from the world of e-commerce is that initial computer-mediated communication, often leads to real-world contact. In the case of BorrowMyDoggy, the dog owner would be required to meet the potential borrower at some point, if only to give them the dog. In a similar vein, a participant highlighted the similarities between contacting a potential dog borrower, and contacting a potential flatmate:

> *"When you try and find someone to live with, so, Spareroom.com or something. You're able to message them through that and exchange contact details and obviously that's quite important because you're going to live with the person so you want to trust they are who they say they are. So having something like that there... where you can message them and get in contact with them"*
> P14, on using a messaging tool on Spareroom.com to find a flatmate

5.1.2 Experience

Participants searched for specific information about the various experience that a borrower had. The table below shows the number of participants who mentioned each code. This is further broken down into the high and low trust groups.

Code	Overall	Low Trust	High Trust
BorrowMyDoggy Experience	7	3	6
Breed experience	9	4	5
Current dog owner	3	1	2
General dog experience	15	6	9
Dog first aid	2	1	1
Age/life experience	10	4	6
Insurance	2	1	1

Table 8: Experience

The three most frequently assigned codes overall are discussed in more depth below:

- General dog experience
- Age/life experience
- Breed experience

General dog experience

Unsurprisingly, participants looking for someone to look after their dog, were interested in the person's previous experience with dogs. For example,

> *"It'd be nice to know if they had previous experience with dogs"*
>
> P8, on experience with dogs

Some participants were particularly interested in making sure that the potential borrower had an idea of the commitment involved in being in a dog's life. For example,

> *"It seems like a brilliant idea to borrow someone's dog, but a dog's not just for Christmas, they're for life. So they may not realise what they're getting into"*
>
> P6, on knowledge of dogs

This particular participant (P6), had the second lowest score on the dispositional trust questionnaire, and although she was comfortable with the idea of other people using BorrowMyDoggy, she stated that she would never use it herself. This position made her a particularly interesting participant. She also stated that she would want to make sure:

> *"They know what having a dog entails and they're not going into it blindly"*
>
> P6, on dog ownership

Comments such as these suggest that P6 takes dog ownership very seriously, and would require similar levels of commitment from anyone she would let take care of her dog. Linked to this is the fact that P6 had only ever let her dog stay with friends or family in the past. Encouraging people with views similar to P6 to use shared economy networks would be challenging, but an entirely worthwhile

undertaking. A person with low levels of trust is likely to make more rigorous background checks and ask more difficult questions of a person or a website. However, if a person such as this were to trust in a particular website, then that would be a strong indication that the website were doing something right. Focusing on those with low levels of dispositional trust would be an interesting topic for further research.

Age/life experience

Life experience and age are parts of the more specific information that participants' were looking for when deciding whether to trust a potential borrower with their dog. Participants mainly mentioned a reluctance to trusting younger people. For example:

> *"I think you could be too young. Maybe someone at the age of 15, then you wouldn't necessarily trust them as much. Just due to them possibly not being able to look after themselves as opposed to someone in their 30's who has probably had kids and who understands it more"*
>
> P23, on age and life experience

The effect of age on trust has been investigated to some degree. For example, Castle et al (2012) used behavioural and neuroimaging techniques to find that older adults were much more likely to trust faces manipulated to be "untrustworthy" than younger adults. This loss of "gut instinct" is has been used to explain why older people are more likely to become victims of fraud. There has also been extensive research into trust in children, for example, Rotenberg et al (2013) found that trust beliefs in peers mediated the relation between trust beliefs in parents and behaviour dependent trust in peers. However, the idea that older people may not be willing to trust younger people has not been specifically researched in this context.

Age is unlikely to be the sole reason why a participant would not want to let someone borrow his or her dog. Stage in life as well as general life experience may be the key factor:

> *"I wouldn't give my dog to a student. If they were just in halls of residence, it's not to say that they're not trustworthy. But where they are in their life, my dog probably isn't their number one focus. So if they're a professional I'd trust that they could hold down a good job, they're more likely to look after your dog. That's probably it"*
>
> P16, on life experience

When viewed in this light, the matter of trust becomes a purely practical one and a potential borrower must demonstrate that they are able to cope with the responsibility of taking care of a dog. Similarly, this has not been specifically researched which makes this a novel, if not entirely surprising finding. How one would reliably demonstrate being a "responsible adult" through an online profile is another question warranting further research.

Breed experience

As well as general experience with dogs, participants also mentioned that they would prefer a potential borrower to have had experience with specific dog breeds. The following quotes from P18 an P8 demonstrate this well:

> *"I have a Jack Russell. Not the greatest breed for everyone, but people that have Jack Russells, they get it. So if someone likes Schitzus then you're not the one for me, but if they like crazy Terriers then yeah, let's do that. It would be great to have their favourite dogs"*
>
> P18, on why specific breed experience is important

> *"Well, they're all different. If you have a collie... I know dogs' homes won't let you take a collie unless you've had one before. So it's quite important that they know what the demands will be"*
>
> P8, on the demands of Border Collies

Specific breed experience could be likened to a type of expertise in a particular field, in this case, dogs. Riegelsberger (2005) investigated trust in human advisors using various methods of online communication (photo and text, video, avatar and audio). He found that participants mainly sought advice from expert advisors, irrespective of media representation, although there was some preference for video advice. This desire to access "expert" advice is likely to be linked to a desire for security, or at least minimisation of risk. All trust involves an element of risk – in fact, trust enables people to take risks (McAllister, 1995). It could be inferred that by seeking out agents (people, companies, organisations) perceived to be experts, people are attempting to lower the risk they are exposed to. This may explain why P12 said that she would be significantly more likely to trust a potential borrower who had previous experience with Springer Spaniels:

> *"Different dogs, different traits. Labradors and Springers will eat you out of house and home if you turn your back on them, Beagles will howl and escape given the opportunity. They've got different traits so if there's someone that'd been a Springer owner, I'd be drawn to them 100%"*
>
> P12, on breed experience and her preferences

This idea of specific experience being required may be unique to shared economy networks. Similar requirements may emerge in other networks where specifics are required, for example, vintage car sharing, gardening or boat sharing. However, it is unlikely that such expertise would ever be required in a more traditional e-commerce setting. Therefore, this may be a finding exclusive to the shared economy.

5.1.3 Intentions

Participants searched for specific information about the borrower's intentions with the dogs. The table below shows the number of participants who mentioned each code. This is further broken down into the high and low trust groups.

Code	Overall	Low Trust	High Trust
Dog like child	5	2	3
Feeding dog	4	2	2
Plans with dog	19	5	14
Availability	4	2	2
Discipline with dog	3	1	2

Table 9: Intentions

The two most frequently mentioned codes overall are discussed in more depth below:

- Plans with dog
- Dog like child

Participants were very interested in what the potential borrower would like to do with their dog, and specifically, the environment that the dog would be taken into. For example:

> *"What they like to do with the dogs'? Is it going for walks? Is it staying at home? I think that sort of information would make them feel more real. Like they're more of a person"*
>
> P25, on the borrowers' plans with the dog

Emotional trust reappeared in quotes such as these. Participants were interested in making, or at least exploring the possibility for an emotional connection with a potential borrower. Research into online dating profiles has revealed that the level of emotionality and self-disclosure significantly impact first impressions of a potential partner (Rosen et al, 2008). It was found that the use of strong emotional words such as "excited" and "wonderful" led to more positive first impressions. Results regarding levels of self-disclosure were less clear-cut, but led to different impressions. The following quote is a strong example of a participant who would be likely to develop a more positive first impression based on enhanced self-disclosure:

> *"I would trust people more if they gave an indication of what they wanted to do and why they wanted to borrow my dog. I mean why don't you get your own dog? Maybe their dog just died, you should say that - I'd totally trust them more. Not... they didn't kill them, but just because they had a dog and you lost your dog and yeah, hang out with mine"*
>
> P18, on the borrowers' plans with the dog

As well as disclosure of intentions, some participants were specifically interested in where the dog would be taken. The following is a good example of this sentiment:

> *"Yeah, I'd like to see where the dog will be. If it's for dog walking then I'd like to see where they're going to be walked. I'm not that bothered about where the person lives, but definitely the sort of environment they're taking the dog into. Whether you're going to take it to, effectively, the lions' den, or whether it's going to be a nice park"*
>
> P19, on where the dog would be taken

This emotional attachment was prevalent throughout many participant interviews. For instance, P18 mentioned that she would like to see lots of details about where the borrower takes the dogs:

> *"I just want someone that says they're going to post pictures. I want more pictures. I want them to have pictures of where they take the dogs. And not just pictures, maybe a map. That would be nice"*
>
> P18, on pictures and maps

P18 in particular wanted people to admire her dog and commented that she would like a borrower to upload photos to the photo sharing social network, Instagram so that they are:

> *"…out there for everyone else to look at to see how handsome he is. Because that dog is not just for me, he's for the whole world"*
>
> P18, on sharing photos of her dog

This sort of finding is likely to be specific to shared economy networks such as BorrowMyDoggy, but it would be very interesting to explore the emotional attachment that people may have with regards to renting out a spare bedroom, car, or item of sports equipment.

Dog like child
Returning to the idea of women being perceived as maternal figures, many participants specifically mentioned that they thought of their dog like a child, and would seek out people to care for the dog accordingly. For example:

> *"I don't know how males act around dogs so much. I know females are more caring. Well, we have a more caring nature when it comes to children and things like that. So I guess females would look at a dog in the same way they'd look at a child. Look at it that way. More of a natural feeling, really"*
>
> P5, on females caring for dogs like they were children

Women are overrepresented in caring professions such as nursing, childcare and teaching, and this is likely to affect participant's perceptions of who is more likely to be a good caregiver to their child, or dog. P13 thought of the dog as a family member:

> *"They're handling a family member of mine, and like a child, I wouldn't just hand them to anybody"*
>
> P13, on the dog as a family member

Specific findings such as this are unlikely to be applicable in other contexts, but the underlying point concerning trust differences between genders is more transferrable.

5.1.4 Community

Participants searched for community opinions on the borrower. The table below shows the number of participants who mentioned each code. This is further broken down into the high and low trust groups.

Code	Overall	Low Trust	High Trust
Ability to contact reviewer	2	1	1
Character references	3	1	2
Number of reviews	8	3	5
Reviews	17	7	10
Social media account	2	1	1

Table 10: Community

The two most frequently mentioned codes overall are discussed in more depth below:

- Reviews
- Number of reviews

Star ratings and verification indicators were chosen as the specific trust cues to be researched in the present study. However, many other affective trust cues are being used more frequently online. Social proof is often also referred to as informational social influence or informational conformity. It is based on the idea that when a person is in an ambiguous or unclear situation, they look to the wider group for guidance. This concept is supported by extensive literature. The most famous might be the

classic experiment by Sherif (1935) where participants were asked to estimate how much a light moved either on their own, or in groups. The light was not actually moving, and the effect was an optical illusion. When alone, participants' estimates varied greatly, but when in groups they converged around a common estimate.

The idea that people look to the group in ambiguous or unclear situations can be linked with online trust in the form of reviews, ratings and other forms of social proof. The idea is that an indication of reputation and levels of credibility can be gleaned from the opinions of others. The idea of social proof and reviews could help fulfil the following:

> *"While most Web designers seek to design sites with maximum levels of credibility, a more admirable goal would be to design sites that convey appropriate levels of credibility"*
>
> Fogg, 2003

By allowing features such as reviews and ratings to appear on websites, a shift could be taking place, allowing for more transparency. This may be useful in the context of BorrowMyDoggy as dog owners would be able to see real reviews from real people who have previously used certain borrowers.

Reviews and number of reviews

Research into online dating has shown that people have a tendency to present an "ideal self" rather than an authentic representation of themselves (Ellison et al., 2006). This is likely to be linked with the importance of reviews to participants in the present study. Reviews were given a high priority and were the most frequently mentioned profile element that a dog owner would be looking for to help inform their decision on whether to trust a potential borrower. For example:

> *"In terms of trust I think reviews are the most important"*
>
> P26, on reviews

Reviews help to combat the effect of the "ideal self", by presenting the opinions of real people. User generated reviews have dramatically changed the way users make purchase decisions in e-commerce (Liu et al, 2008, cited in Sherwani and Stumpf, 2014). Reviews and feedback may form an extension of the online community, enabling users to make evidence-based judgments before engaging in any risk-taking trust behaviours such as placing an order. Using reviews as trust cues is a form of virtual re-embedding (Riegelsberger and Sasse, 2003). Participants were familiar with reviews and ratings from other websites, TripAdvisor and Amazon in particular.

A key finding from research by Sherwani and Stumpf (2014) was that the number of reviews is an important trust indicator. This is likely to be linked to ideas of source expertise (Kim et al., 2008), i.e. the person has reviewed a lot of items, and therefore they must know what they are talking about. Number of reviews is also important in terms of the item (or in the case of the shared economy, the person) being reviewed. Participants said they would feel more comfortable trusting a person if they had been reviewed multiple times:

> *"It'd be nice to have a lot of actual reviews, rather than just a couple. Because then you get a real sense of the person"*
>
> P3, on the number of reviews

More reviews means more opinions and more general information. When deciding who to trust with their dog, participants were keen to access as much material as possible. An interesting topic for future work could be to investigate whether there is an ideal length of review, or ideal amount of information, and whether this varies based on factors like content, dispositional trust levels, or the

context in which the review is presented (i.e. shared economy, e-commerce, e-health, etc). However, access to a wide variety of information can lead to users having doubts about authenticity. P4 stated that:

> *"Too many good remarks I suppose would* make *me, you know... suspicious"*
>
> P4, on reviews

This idea links to research carried out my Lelis and Howes (2011) into theories and experimental implications for how people use online rating information to make choices. They found that the Internet is dominated by positive reviews, and as such, people take more time to seek out reviews of lower ratings. This links well with P4 in the present study, as he said he would actively seek out lower ratings. A major reason behind this was that P4 felt that it was not possible to please all dog owners all the time, because the people and dogs involved would be likely to vary a great deal. This particular finding may be specific to dog sharing networks, but it seems like common sense that one may be suspicious of a product or person with a high number of reviews and a 100% approval rating.

Additional points on reviews

In addition, research has shown that as well as looking at review quality and source expertise (Kim et al., 2008) users are interested in assessing the trustworthiness of a reviewer. Source expertise may be revealed by summarising ratings of a reviewer's generated content by other users. This enables users to establish whether a review is trustworthy (Kim et al, 2008, cited in Sherwani and Stumpf, 2014). As well as looking for trustworthy reviewers, participants in the present study were looking for reviewers they could relate to. P22 describes this well:

> *Something from someone with a similar background to me. Similar age, woman, that kind of thing. Someone that's relatable, and someone that may have a similar opinion to you"*
>
> P22, on what they look for in a reviewer

P14 also mentioned that they when looking for a trustworthy person to take care of their dog, they would prefer someone they perceive to be like them. This idea of similarity improving reports of trustworthiness has been explored in psychological research. For example, Farmer et al. (2013) that when a person is deemed trustworthy, we perceive that person's face to be more similar to our own. An interesting topic for future research could be to show participant's ratings and reviews (a mixture of trustworthy and untrustworthy) and ask them to match profile photos of faces with the reviews.

6 EVALUATION, REFLECTIONS AND CONCLUSIONS

This project was carried out to investigate and understand trust in the shared economy, with a view to contributing to a new area of research. This overarching objective was broken down into three smaller ones:

> OB1: Investigate whether trust cues which are regularly used in e-commerce (and related domains) can be applied to the shared economy
>
> OB2: Evaluate the effect of trusting beliefs on behaviour in the shared economy
>
> OB3: Explore information seeking behaviour and its implications for trust in the shared economy

To achieve these objectives, the project aimed to answer the following research questions:

- RQ1: What effect (if any) do star ratings and verification have on the perception of peer and site trustworthiness in a sharing economy website?
- RQ2: Can the participants' general levels of trust make a difference to trust ratings? If so, how?
- RQ3: What profile elements help dog owners to make a decision about whether to trust a potential borrower?

The initial scope of the project changed dramatically from the initial proposal due to issues largely outside of the researcher's control. Time constraints, data collection problems (which significantly impeded analysis) and methodological issues also had an impact on the final outcome. This section reviews all aspects of the project to determine what has been achieved by undertaking this project.

6.1 PROJECT PLANNING

This project changed significantly since the first plan was submitted. Initially, the project was going to investigate trust in air traffic control in partnership with National Air Traffic Services (NATS). See Appendix Aii: Trust in Air Traffic Control for more details. However, one month into the project, and a couple of weeks before data collection was due to start, NATS informed the researcher that they would not be able to fulfil their side of the agreement and provide a sufficient number of air traffic controllers with enough time to participate in the study. As such, a new project proposal was written as soon as possible (Appendix Ai: Trust in the Shared Economy). As this second proposal was not so polished, and the researcher had very recently moved jobs, there were issues with direction and objectives. The researcher initially had difficulty forming academically sound research questions in an entirely new domain and the focus of the project evolved throughout its execution. In hindsight, the researcher may have been eligible for a deadline extension, but did not apply for one.

With the support of the dissertation supervisor, a new research focus was established and data collection actually finished ahead of the estimated time. The qualitative data analysis exceeded the researcher's expectations, and the project became more focussed on RQ3 than initially planned. The researcher enjoyed becoming immersed in the qualitative aspect of the project. On reflection it would have been wiser to constrain this and focus on the write up of the deliverable report.

6.2 LITERATURE REVIEW

The literature review that forms part of the original proposal was shallow as a result of time constraints. During the course of the project, the researcher carried out a great deal of desk research,

which ensured that academically interesting objectives, and thus, research questions emerged. The literature review informed the approach to conducting the research in order to answer each of the research questions and helped support the conclusions made from the findings and discussion.

6.3 METHOD

Problems were encountered with the borrower choice dependent variable, stemming from an issue with the prototypes. Both conditions involving star ratings (e.g. Figure 25 below) depicted potential borrowers with four different ratings (Emily = 1*, Oliver = 2*, Sophia = 3*, Jack = 4*).

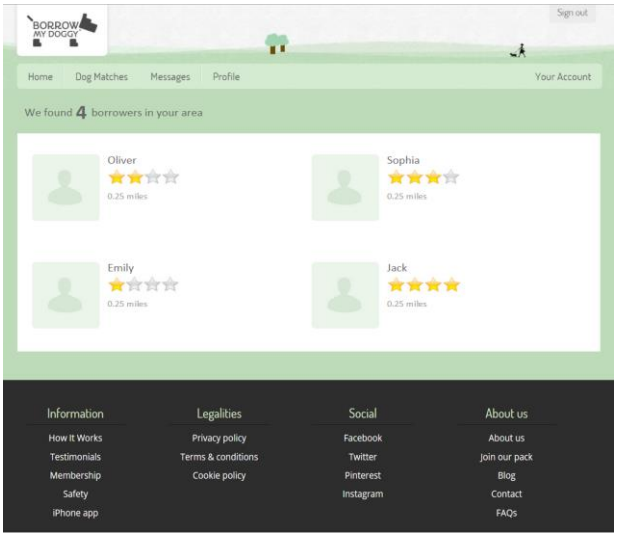


Figure 29: Star ratings prototype

The project was designed to so that data collected in these conditions would give an indication of whether star ratings altered borrower choices or changed ratings of trustworthiness. This research design is based on the idea that star ratings are either present or absent, but by adding four different star ratings for the four borrowers, the researcher inadvertently added four extra levels to this independent variable. An additional (embarrassingly simple) problem was that males had more stars over all (2+4=6) than females (1+3=4). These issues were not discovered until data collection had been completed and a draft of the findings had been submitted.
If the researcher were to undertake this project again, the data collection method would be altered to avoid these problems. Firstly, the stars would be reallocated so that there was a gender balance (1+4=5 and 2+3=5). Secondly, the researcher would ask for trust ratings for all four borrowers rather than the one identified as most trustworthy. This approach has the advantage of not only showing which borrower is most trusted (given the highest rating), but also how they compare with the other borrowers.

Another issue is that some of the data collected was not used for its intended purpose while answering the research questions. The following data was collected but not used:

- Reasons behind decisions during the experimental section of the research i.e. why participants chose a certain borrower, why they gave them a certain trust rating, and the reasoning behind the site trust rating
- Participant guesses about what star ratings and verification constituted. For example, some participants thought that verification may be verifying an email address, where as others thought it might involve a representative from BorrowMyDoggy visiting the person's home
- If the participant had ever had a negative experience with someone that had looked after their dog in the past

> If the participant had a negative experience with a borrower as part of BorrowMyDoggy, which agent they would lose trust in – the website, the person, both, neither

These data were designed for use as qualitative anecdotes to support the predominantly quantitative findings used to answer RQ1 and RQ2. The researcher aimed to separate quantitative and qualitative data during the sessions by leaving all explanations as to why decisions were made until the end. However, this did not work well during the pilot session with P1 so it was decided that the "why" questions would be asked after the individual decisions had been made. Unfortunately this meant that qualitative data was scattered throughout the sessions. To resolve this, the researcher would need to transcribe the entire sessions (sometimes lasting up to 30 minutes) as well as conduct extensive statistical analysis. The researcher began by transcribing all sessions, but due to time constraints made the decision to only transcribe the semi-structured interview (used to answer RQ3) at the end of the sessions. This decision meant that all research questions could be answered to some degree. If this decision had not been made, it is likely that RQ3 could not have been answered so fully due to time constraints.

Also due to time constraints, the qualitative data was collected about what photographs participants expected to see on borrower photos. They were specifically asked what would indicate a trustworthy person in a photo, and whether it would make any difference to them if the person had a dog in the photograph with them.

If the researcher were to undertake this project again, the researcher would take more notes during the sessions. Notes taken were limited as the researcher expected to fully transcribe all interviews at a later stage and thus, focused on getting full answers from participants. An alternative method would be to ask participants to write down their reasoning and answers, negating the need for transcriptions.

Gender became more of a theme than the researcher anticipated, and if this project were to be repeated, gender balanced recruitment would be a priority. This would enable more generalisable conclusions to be drawn based on the findings. However, interesting questions about the effect of gender on trust (at least in the context of BorrowMyDoggy) have been raised as a result of this research. For example, "are women more likely to trust other women in the shared economy?". This would be an interesting topic for further research.

6.4 Data Collection

As previously mentioned, methodological issues meant that some incorrect data was collected. However, during the data collection process everything went relatively smoothly. Ideally, all thirty participants would have been available for a face-to-face research session, but the researcher found that Skype sessions were just as valuable. A technical issue with the audio recording software that meant the session with P28 was not recorded. This was unfortunate, but as there were no other issues so data was collected with a success rate of 97% and the researcher was satisfied.

6.5 Data Analysis

Leading on from collecting borrower choice information incorrectly, the researcher found it difficult to analyse these data. All other data was normally distributed and therefore suitable for parametric testing. The researcher decided to include the borrower choice data and try to make the best of it. Part of this decision included deciding to carry out non-parametric statistical tests due to the fact that the borrower choice data was not normally distributed. Non-parametric tests are less efficient than their parametric counterparts and a larger sample size is required to overcome this (Dancey and Reidy,

2011). They are also generally less sensitive i.e. a larger differences are required for the null hypothesis to be rejected. However, the results of Friedman's ANOVAs and post-hoc Wilcoxon tests used to investigate RQ1 revealed significant differences between conditions, which suggests that the effects were strong. To investigate this further, a repeated measures ANOVA was conducted (see USB stick for SPSS outputs) which also revealed significant effects.

In contrast, Spearman's rho correlation coefficients were calculated to investigate RQ2 and revealed extremely weak correlation. The researcher ran the parametric alternative, a Pearson's correlation and this also reported extremely weak correlation (see USB stick for SPSS outputs). Thus, it may be concluded that the non-parametric method of data analysis had a very minimal effect on the reported results.

In terms of answering RQ3, the researcher became very immersed in the qualitative data and invested more time and effort to investigating and reporting these findings. This may have lead the to the overall quality of the project report being slightly reduced due to time constraints

6.6 Generalisation, Validity and Bias

Considerable effort was made to recruit participants from a wide variety of backgrounds, and not simply to recruit friends of the researcher. However, this does not mean that the findings from this research are generalisable to the wider community, and further research should be carried out.

In the context of BorrowMyDoggy, the findings from this research are very exciting. The researcher aimed to focus on interesting and novel findings, which were more generalisable to the wider shared economy. For example, participants were very interest in community and social proof information such as reviews. However, some findings are likely to be less generalisable. For example, participants in this research were emotionally invested in the thing they were potentially sharing, their dog. This may be the case in other sharing environments concerning cars, houses, etc, but further research is required to explore this.

The qualitative aspects of this project are open to the usual criticisms of qualitative research, i.e. that it is not generalisable, and is open to subjectivity. However, the goal of the research was to conduct an in-depth investigation of what participants would look for on a profile when making a trust judgment, and to give a rich and detailed account of the findings. This is in-line with what qualitative research should aim to do (Oates, 2006), and the researcher would conduct this section of the research in a similar way if asked to repeat the project.

6.7 Additional Knowledge Acquired

A considerable number of new skills had to be learned to complete the project successfully. All of which are useful in the field of human-computer interaction and user experience.

It was beyond the technical capabilities of the researcher to create a fully functioning website, so an alternative solution had to be found. The researcher had experience with creating wireframes in Balsamiq Mockups, but had not created more sophisticated prototypes before. As such, creating the materials for the experimental section of the research was a steep learning curve.

The researcher had not conducted an experiment that required statistical analysis in five years. While the researcher's background in psychology may have helped in some aspects of the statistical analysis, the majority of the knowledge was gained through extensive reading of appropriate books. For example Rowntree (1981), Oates (2006) and Dancey and Reidy (2011).

The researcher had never conducted qualitative research before, and found this experience invaluable because it allows for such rich results. The fact that qualitative findings may not be generalisable does

not matter quite so much in the professional world of user experience research. Clients approaching an agency are interested in context specific findings, so qualitative research is highly valued. The qualitative research tool, Dedoose, was found to be particularly useful for exporting coded data and adding a quantitative slant.

6.8 CONCLUSIONS

Despite some issues, this research may be regarded as a success. The project has made a useful contribution to the understanding of trust in the shared economy. This contribution is considerable, mainly because it has not been experimentally investigated before now. A key conclusion is that the findings suggest star ratings and verification indicators can be used successfully in the shared economy. This has clear implications for other shared economy networks interested in building trust in their brand. An interesting angle for further research would be to look at whether this effect is replicated on mobile devices, and in with users in more natural settings (not in a lab-style environment). This would help researchers to understand what is at the core of trusting behaviour.

An obvious extension of this research is to look to other shared economy networks such as BlaBlaCar and Airbnb to see if results can be replicated and supported. Focusing on the emotional aspect of trust could be interesting. This study found that participants were very emotional about their dogs, so it would be interesting to explore whether that is exclusive to dogs, or it can be applied to other items that are shared or rented rather than purchased. Increasing the sample size would also increase generalisability if findings.

Another interesting avenue for further research could be to look into conditions where the user has little to no information about the person they are presented with. In the no cues condition, participants relied on their own experience and in-built preferences and prejudices (i.e. against the borrower called Jack). In this project, this condition was designed to be a control, but it turned out to be one of the more interesting situations.

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8 APPENDICES

Appendix A: Project Proposal

i. Trust in the Shared Economy Proposal
ii. Trust in Air Traffic Control Proposal

Appendix B: Study Plan

Appendix C: Screener

Appendix D: Information Sheet

Appendix E: Consent Form

Appendix F: Participant Profile Data

Appendix G: Questionnaire

Appendix H: Session Guide

Appendix I: Raw session data

Appendix J: Dispositional trust calculations

Appendix K: Interview transcript for P18

8.1 Appendix AI: Project Proposal - Trust in the Shared Economy Proposal

Please note that this proposal is brief, because the researcher originally planned to carry out a different project (Trust in Air Traffic Control) but was let down by National Air Traffic Services one month into the project.

"What's mine is (y)ours":

Trust in the Sharing Economy

Introduction

Context

The concept of the sharing economy has been referred to as many different things e.g. peer-to-peer (p2p) marketplaces, rental networks or collaborative consumption. Collaborative consumption offers a good description of the main attraction of sharing economies. The idea of consuming something as a group rather than singularly is based on the idea that many participants are happy to "access rather than own" (need to find an academic reference for this quote) a commodity. Those that do own, say, a boat, may feel that they do not make as much use of their commodity as they possibly could, and so are happy to let others use it. Specific rules for this usage apply and are often different for each particular p2p sharing network, and a fee may be charged.

There are many factors which contribute to the widespread adoption of the sharing economy, for example the interconnectedness of modern people and technology, and the increased desire to share personal information on social media. One such significant factor is the concept of trust. Building trust is an essential part of any successful online business, and doing this in a p2p environment may require a different approach to say, traditional e-commerce. Rinne et al. (2013) note that "trust is the social glue that enables collaborative consumption marketplaces and the sharing economy to function without friction".

The proposed study will explore the concept of trust in the shared economy and use this knowledge to create and validate wireframes with users. The wireframes will be for BorrowMyDoggy.com, a website which matches dog owners with local people that wish to borrow a dog for "walkies, playdays, sleepovers and happy holidays".

Research Questions

Part 1

Can the antecedents and cues of trust, which have been found to be successful in relation to traditional e-commerce websites, be used to establish trust in the sharing economy?

Are there any extra trust cues, which are unique to the sharing economy?

Which cues are the most important for engendering trust in users?

Part 2

Using the results of a) b) and c), wireframes will be constructed for BorrowMyDoggy.com to include the most important trust cues, and any cues specific to the sharing economy.

d) Do users trust the new design more than the original one?

Project Objectives

Part 1

Explore trust in shared economies, focusing on BorrowMyDoggy.com

Assess whether established e-commerce trust cues are suitable for shared economies

Assess whether there are trust cues which are specific to shared economies

Identify what these shared economy trust cues might be (if applicable)

Prioritize cues based on importance to users

Part 2

Create wireframes based on findings from Part 1

Test wireframes with users

Establish whether the introduction of research findings has increased levels of trust

Scope

Trust cues, which may be particular to sharing economies, will be explored, but a full model of trust or an exhaustive list of trust cues for this sort of business is beyond the scope of this research. Wireframes will be produced and evaluated, but visual design work is outside of the scope unless BorrowMyDoggy agrees to participate in the project.

Motivations

The researcher has actively used shared economies for around ten years. She began buying collectable items on eBay as a teenager, and has used p2p networks such as accommodation services (Couchsurfing and Airbnb) with great success in the past. The researcher is very interested in the growth of these types of network, and is intrigued by the concept of trust in the context of human-computer interaction. She is excited to be investigating a relatively new approach to e-commerce, as well as exploring trust which has not been extensively researched in this capacity and is such a significant factor in user adoption of these businesses.

Beneficiaries (if BorrowMyDoggy are interested)

There are a number of groups which may tangibly benefit from the work that the present study aims to carry out. BorrowMyDoggy will benefit from increased insight into the way their users feel about their business, with an emphasis on trust. If specific shared economy trust cues are found, the company could build on this work and use them to increase user trust in their business. In turn, this could increase user adoption, improve reputation and therefore lead to an increase in revenue. City University, London will benefit from being involved with BorrowMyDoggy, and the interaction lab may become involved in testing prototypes in the future. The wider field of human-computer interaction will have the intangible benefit of an increased understanding and knowledge of trust in shared economies. The work could also

be extended and applied to shared economies other than BorrowMyDoggy. For example, an interesting study could be to see if the shared economy trust cues identified here, apply to different shared economies in different domains.

Literature Review

Sharing Economy

Terminology

The concept of the sharing economy has been given a variety of labels, from peer-to-peer (p2p) marketplaces or rental networks, to collaborative consumption, but the basic idea is the same. Through the power of the internet, individuals are renting their commodities (whether it be a spare room, a car or a pet) to complete strangers. These people have never met before, and they may never have met were it not for the sharing economy which brought them together.

History

Airbnb may be the most well-known example of a shared economy, and was founded in 2008 on the principle that "with the internet and a spare room, anyone can become an innkeeper" (Blecharcyk, in Botsman and Rogers, 2011). However, the sharing economy has been around for much longer, and companies such as eBay could be said to have popularized the concept of p2p e-commerce. Users of eBay are able to become sellers, buyers, or both, and directly interact with one another.

Touch on the difference that paying a fee may have e.g. versus Freecycle and CouchSurfing.

Defining Trust

Trust

The Oxford English Dictionary defines trust as a "firm belief in the reliability, truth, or ability of someone or something". This is a relatively loose definition and its implication may vary enormously depending on the context within which it is used. As previously stated, there are many definitions of trust. However, definitions from all disciplines and applying to all domains, tend to have certain things in common. These similarities have been widely accepted by researchers in the area as characteristics of trust, and have been identified by Wang (2005) as follows:

Trustor and trustee. Two specific parties must exist, a trusting party (trustor) and the trusted party (trustee). The development of trust is based on the ability of the trustee to act in the interest of the trustor and the degree to which the trustor places in the trustee.

Vulnerability. Trustors must be willing to make themselves vulnerable for trust to be operational. Trustors must be willing to take the risk of losing something important to them and rely on the trustee not taking advantage of this vulnerability.

Produced actions. Trust leads to actions, mostly risk-taking behaviours. The form of action depends entirely on the situation and may concern something tangible or intangible.

Subjective matter. Trust is subjective, and is directly related to and affected by individual differences and situational factors. Different people view the role of trust differently, and the situation can define how much trust can influence outcomes.

Dispositional trust

Dispositional trust refers to trust between humans or humans and systems upon initially encountering them, even if no interaction has taken place (Merritt and Ilgen, 2008). Dzindolet et al. (2003) identified that even after very limited interaction with an aid, people believe it to be "very trustworthy" and expect it to perform better than average. Numerous studies have supported this idea, but it has also been shown that people have different levels of dispositional trust, based on individual differences such as personality and propensity to trust (Merritt and Ilgen, 2008).

Risk

Mayer et al. (1995) incorporate the idea of vulnerability and risk into their definition of trust. They define trust as "the willingness of a party to be vulnerable to the actions of another party". It is possible to say that without risk, there is no need for trust. Beldad et al. (2011) break this risk down into three different components:

The magnitude of a loss or injury.

The chance of a loss or injury.

The exposure to a loss or injury.

Generally, levels of trust that a person feels must increase as the levels of each type of risk increase in order for them to think that the danger is worthwhile.

Online Trust

Talk about differences between face to face interaction and online interaction… missing cues from the person to indicate trust. More inherent distrust of online situations (but is that changing?).

Trust in E-Commerce

E-Commerce

(This section needs to be filled in, but there is a lot of research on trust in e-commerce so I focussed on the p2p aspects)

E-Commerce "Lack of trust has been repeatedly identified as one of the most formidable barriers to people for engaging in e-commerce" Wang (2005). Transactional risk factors…

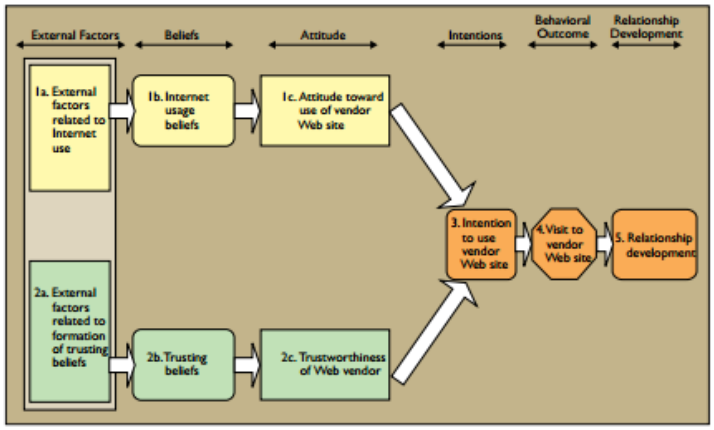


Figure 1. Components of the e-commerce exchange in a trusting environment (Salam et al., 2005).

Trust Cues

e.g. Kim et al. (2008)

Cognition (observation)-based: e.g., privacy protection, security protection, system reliability, information quality, etc.

Affect-based: e.g., reputation, presence of third-party seals, referral, recommendation, buyers' feedback, word-of-mouth, etc.

Experience-based: e.g., familiarity, Internet experience, e-commerce experience, etc.

Personality-oriented: e.g., disposition to trust, shopping style, etc.

Trust in Sharing Economies

Centralised vs. Decentralised

eBay, and to some extent, Amazon, are a good example of a p2p e-commerce system with centralised management. Peers (buyers or sellers) can evaluate each other based on the service quality or behavior during transactions (Wang et al., 2008). Other p2p sharing networks such as Freecycle are more decentralised, allowing peers to interact directly with each other, with little involvement from a central company. These networks are significantly cheaper to setup, and therefore potentially more likely to be misused. Peers are unfamiliar with each other and it is rational (and safe) to doubt the trustworthiness of these strangers. The p2p sharing environment must have an effective trust system to help users locate trustworthy partners and exchange commodities securely and with confidence (Li et al, 2009). The p2p sharing environment opens up a different set of risks to that of more traditional, centralised e-commerce. As such, it is interesting to explore differences that may be present in these sort of environments.

Peer Reputation

Peer reputation is a complicated concept, and different p2p sharing networks approach this in different ways. Ebay and Amazon have reviews and star-rating systems for buyers and sellers, and more decentralised organisations like BorrowMyDoggy have complicated verification processes (address, phone, photo and video verification).

Personal safety

As well as the transactional risk associated with e-commerce, some p2p networks have an aspect of danger to the personal safety of users and the commodity they are sharing. Stats…

Peer-to-Peer Trust

Xiong and Liu (2003) have done extensive work in the area of reputation-based trust in p2p electronic communities and have proposed "PeerTrust" as a model. PeerTrust uses a mathematical formula to compute the trustworthiness of a peer using five main trust parameters:

Feedback on level of satisfaction: e.g. star ratings, scores.

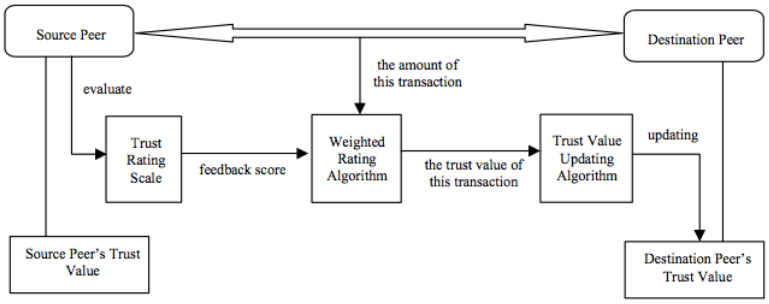
Number of transactions: this is included to help avoid peers increasing their trust value by making a large number of low value transactions.

Credibility of feedback: feedback from more credible sources is given more weight. This is particularly useful in a p2p e-commerce environment when sellers may be likely to attempt to sabotage each other by leaving negative feedback for rivals.

Transaction context factor: e.g. a seller will not be able to develop a good reputation by building their trust ratings in lots of small transactions but trying to be dishonest with larger transactions.

Community context factor: e.g. add a reward as community context for peers who submit feedback.

In Fig. 2 Li et al. (2009) present a similarly mathematical model of trust evaluation based on recommenders trust value and transaction amounts when calculating the trust value of a peer.



Work has also been conducted from more of business focussed perspective, for example the DREAMS trust framework developed for the p2p car-sharing network, Bla Bla Car (Trustman, 2013). According to this framework, there are six pillars of trust in a p2p network and they are as follows:

Declared: peer name, photo, preferences, location etc visible to profile viewers.

Rated: peer recommendations and feedback is visible to profile viewers.

Engaged: bold calls to action e.g. "book now"

Activity based: information on how often the peer logs in, or how responsive they are.

Moderated: email address, phone number, photo etc all verified.

Social: social media connectivity helps prove the person has nothing to hide.

Measuring Trust

Trust is a difficult concept to define, and even harder to objectively measure….

Talk about adapting SATI (trust in automation questionnaire), combined with more qualitative measures like depth interviews.

Look for behavioural indicators of trust in user testing thinkaloud sessions, as well as asking users to rate levels of trust at various points.

Combining questionnaires, interviews and user testing (observation).

Williams and Derro (2008) at Nasa used a combination of methods with observation as a key component. They interviewed and shadowed highly valued system engineers in an attempt to determine what the behaviour of a well-regarded system engineer was. Williams and Derro found a shared set of specific

behaviours which "enable individuals to excel as system engineers. These behaviours are observable and measureable". Applying an approach like this to the domain of the sharing economy, and the topic of trust could provide some revealing insights. In the case of the present study, shadowing would be replaced by facilitated user testing, combined with questionnaires and trust ratings.

Methods and Tools for Analysis and Evaluation

Overview

The present study will comprise of two parts. The first part will explore the trust antecedents and cues, based on the existing literature on trust, trust in e-commerce and trust in the sharing economy. Surveys and depth interviews will be used to investigate how users feel about the findings from the existing research, and also to try and establish whether there are cues which are specific to the shared economy. Once these results have been collated, these will be prioritised by users using surveys/online card sorting. Once these results have been analysed by the researcher, the most important cues will be integrated into wireframes of the BorrowMyDoggy website. User testing sessions will be carried out to compare reported levels of trust in the new wireframes compared with wireframes of the existing website. The results of these sessions will be used to establish whether the added cues had an impact on users' trust in the website.

Participants

x25 participants for trust survey

x5 participants for depth interviews

x10 participants for prioritisation

x12 participants for user testing

Data Collection – Part 1

Trust Surveys

Aim to collect a mixture of quantitative and (short) qualitative data. Aim to make surveys take no more than 30mins to complete.

A mixture of adapted SATI questions, and other academically supported self-reporting trust measures will be used. Mockups will be included e.g. mockup A has trust cues applied (seal of approval, peer ratings etc) and mockup B does not… user asked which they would trust more and why.

SurveyMonkey (or similar) will be used to send out the surveys.

Depth Interviews

Lengthy qualitative data to be collected. All interviews will be recorded.

Interviewees will be asked about their experience with e-commerce in general, as well as the shared economy. General trust questions will also be included e.g. f2f trust, dispositional trust etc.

Prioritisation

Ordinal data (ranks)

Survey or online card sort to understand which cues users feel are most important for engendering trust.

Data Collection - Part 2

Wireframes

Take results from Part 1 and include the most important cues in wireframes.

User Testing

Use Morae/Silverback to record and annotate sessions. Users should thinkaloud while performing tasks using the wireframes. Users asked to focus on trust during thinkaloud and prompted to give trust ratings at various stages in the process e.g. when shown a new screen.

Users asked to perform a task on one set of wireframes (e.g. new) and then a similar one on the other set (e.g. original). For 50% of participants, the order will be reversed – repeated measures.

Analysis – Part 1

Trust Surveys

Mean, median, mode, standard deviation

Depth Interview

Qualitative analysis

Word coding to get statistical data and work out mean, median, mode

Prioritisation

Mean, median, mode, standard deviation

Analysis – Part 2

Wireframes

N/A

User Testing

Analyse time on task thinkaloud data, task completion, trust ratings, user journeys. Create completion graphs, user journey maps, and trust rating diagrams (including timelines?). Create highlights reel to attach when handing in disso and share with BorrowMyDoggy if relevant.

Repeated measures t-test.

Potentially Wilcoxon signed-rank test.

Risks

No.	Risk Description	Priority	Mitigation Actions
1	BorrowMyDoggy may change their website during the research process, leading participants being tested on	High	Researcher will communicate with BorrowMyDoggy and ask if there are any planned upgrades and plan around these. The

	different versions of the website.		general plan will be to carry out testing in a reasonably short period of time to minimise this risk.
2	Researcher may not be able to find enough suitable participants.	Medium	Researcher must work on a recruitment plan and aim to recruit more participants than required to allow for attrition.
3	Pilot studies may be so unsuccessful that the approach may need to be changed entirely. This would have a significant impact on the schedule of work.	High	Researcher should make use of academic expertise and get all methods and questions before use. Extensive preliminary research will also help mitigate this risk.
5	The researcher is changing jobs in September and will be significantly busier in her new role.	Medium	There are no foreseen restrictions on carrying out research with participants at weekends when the researcher will have more free time.
6	Computer may malfunction, or data may be lost e.g. misplaced USB stick, Cloud storage failure	High	Backup everything using Dropbox, and physical storage.

Plan of Work

Week 1: 28th July-3rd August

Research & finding new topic after NATS issues

Start new proposal

Week 2: 4th August-10th August

Discuss project proposal with Simone

Meet with BorrowMyDoggy to discuss potential collaboration (not essential to project)

Start project plan after initial meeting with Simone

Start literature review

Design consent forms and information sheets

Start designing surveys for data collection

Week 3: 11th August-17th August

Continue designing surveys

Design questions for depth interviews

Get data collection methods approved by Simone

Continue working on literature review

Week 4: 18th-24th August

Pilot study

Make changes if required

If pilot successful, send out surveys and start depth interviews (aim to get 2 this week)

Start writing methods section

Week 5: 25th August-31st August

Continue pushing surveys and get more depth interviews done (aim to get 3 this week)

Continue writing methods section

Week 6: 1st September-7th September

Collate trust survey data and organize into prioritisation surveys

Send out prioritization surveys

Week 7: 8th September-14th September

Analyse all survey and interview data

Week 8: 15th September-21st September

Start designing wireframes

Start recruiting participants

Week 9: 22nd September-28th September

Finalise wireframes

Run user testing pilot

Week 10: 29th September-5th October

Make any required changes based on pilot

Start user testing

Week 11: 6th October- 12th October

Continue user testing

Week 12: 13th October-19th October

Continue user testing

Week 13: 20th October-26th October

Analyse user testing results

Week 14: 27th October-2nd November

Continue analysing user testing results (inc. stats)

Week 15: 3rd November-9th November

Write results section

Week 16: 10th November-16th November

Start writing discussion section

Week 17: 17th November-23rd November

Continue writing discussion section

Week 18: 24th November-30th November

Write conclusion and evaluation sections

Week 19: 1st December-7th December

Write introduction

Week 20: 8th December-14th December

Check references and write abstract

Week 21: 15th December-21st December

Proof reading, drafts etc

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Ethics

No foreseen ethical issues as long as informed consent is obtained from all parties and reasonable research guidelines are adhered to.

Research Ethics Checklist

School of Informatics BSc, MSc, MA Projects

If the answer to any of the following questions (1 – 3) is NO, your project needs to be modified.		*Delete as appropriate*
1.	Does your project pose only minimal and predictable risk to you (the student)?	**Yes**
2.	Does your project pose only minimal and predictable risk to other people affected by or participating in the project?	**Yes**
3.	Is your project supervised by a member of academic staff of the School of Informatics or another individual approved by the module leaders?	**Yes**
If the answer to either of the following questions (4 – 5) is YES, you MUST apply to the University Research Ethics Committee for approval. (You should seek advice about this from your project supervisor at an early stage.)		*Delete as appropriate*
4.	Does your project involve animals?	**No**

5.	Does your project involve pregnant women or women in labour?	**No**
If the answer to the following question (6) is YES, you MUST complete the remainder of this form (7 – 19). If the answer is NO, you are finished.		*Delete as appropriate*
6.	Does your project involve human participants? For example, as interviewees, respondents to a questionnaire or participants in evaluation or testing?	**Yes**
If the answer to any of the following questions (7 – 13) is YES, you MUST apply to the Informatics Research Ethics Panel for approval and your application may be referred to the University Research Ethics Committee. (You should seek advice about this from your project supervisor at an early stage.)		*Delete as appropriate*
7.	Could your project uncover illegal activities?	**No**
8.	Could your project cause stress or anxiety in the participants?	**No**
9.	Will you be asking questions of a sensitive nature?	**No**
10.	Does your project rely on covert observation of the participants?	**No**
11.	Does your project involve participants who are under the age of 18?	**No**
12.	Does your project involve adults who are vulnerable because of their social, psychological or medical circumstances (vulnerable adults)?	**No**
13.	Does your project involve participants who have learning difficulties?	**No**
The following questions (14 – 16) must be answered YES, i.e. you MUST COMMIT to satisfy these conditions and have an appropriate plan to ensure they are satisfied.		*Delete as appropriate*
14.	Will you ensure that participants taking part in your project are fully informed about the purpose of the research?	**Yes**
15.	Will you ensure that participants taking part in your project are fully informed about the procedures affecting them or affecting any information collected about them, including information about how the data will be used, to whom it will be disclosed, and how long it will be kept?	**Yes**
16.	When people agree to participate in your project, will it be made clear to them that they may withdraw (i.e. not participate) at any time without any penalty?	**Yes**
The following questions (17 – 19) must be answered and the requested information provided.		*Delete as appropriate*
17.	Will consent be obtained from the participants in your project? Consent from participants will be necessary if you plan to gather personal, medical or other sensitive data about them. "Personal data" means data relating to an identifiable living person; e.g. data you collect using questionnaires, observations, interviews, computer logs. The person might be identifiable if you record their name, username, student id, DNA, fingerprint, etc. *If **YES**, provide the consent request form that you will use and indicate who will*	**Yes**

*obtain the consent, how are you intending to arrange for a copy of the signed consent form for the participants, when will they receive it and how long the participants will have between receiving information about the study and giving consent, and when the filled consent request forms will be available for inspection (**NOTE**: subsequent failure to provide the filled consent request forms will automatically result in withdrawal of any earlier ethical approval of your project):*

18. Have you made arrangements to ensure that material and/or private information obtained from or about the participating individuals will remain confidential? **Yes**

Provide details:

All participants will be referred to by a number and their personal details will only be known to the researcher. Signed consent forms will be stored in a locked cabinet (with no reference to participant numbers).

19. Will the research be conducted in the participant's home or other non-University location? **Yes**

*If **YES**, provide details of how your safety will be preserved:*

Researcher will only visit homes of people known to them previously. Other participants will be met in well lit public places (such as coffee shops) only during daylight hours.

8.2 Appendix AII: Project Proposal - Trust in the Air Traffic Control Proposal

Project Proposal - Trust in Air Traffic Control

Introduction

The use of automation is increasing in a variety of different industries, from online shopping and targeted advertising, to healthcare and the military. Trust in this automation may be a key factor in the success or failure of a particular sociotechnical system. Automation may be viewed as another member of the team, and in some cases it may even be taking the place of a person. If any team member (including the automation) is not trusted, the team is more open to failure. The focus of the present study is trust in automated air traffic control systems. This is a very safety-critical domain, which has been the subject of a large amount of research work, particularly with regards to human factors.

Trust is a complicated concept, which has been studied with reference to a variety of disciplines, including psychology, management and human-computer interaction. Many psychological theorists have focused on interpersonal trust and reliability. Rotter (1967), defined trust as "an expectancy held by individuals or groups that the word, promise, verbal, or written statement of another can be relied on". Management thinkers such as take this definition and apply it to an organisational context, where trust is not simply a something that occurs between two individuals. Driscoll (1978, as cited in Wang 2005) considers organisational trust to be "the belief that the decision makers will produce outcomes favourable to the persons interests without any influence by the person". It is possible to open up this definition to include computer systems as members of a team and incorporate the idea of goal-orientation. Gurtman, (1992, as cited in Lee and See, 2004) states that automation must be trusted to perform a certain task as expected and can be relied upon.

Despite the fact that a definition for "trust" seems to be quite elusive, measurement of trust has been attempted in numerous studies, often using questionnaires following certain standards such as the SHAPE Automation Trust Index (SATI) (European Organisation for the Safety of Air Navigation, 2003b). The present study aims to build on this research and include observation to produce richer data. In terms of output, the researcher hopes to be able to discuss how levels of trust in automation varies over time and why. As far as the researcher is aware, this has not been attempted before. In addition, the researcher aims to formulate a set of guidelines to help NATS to improve the safety and efficiency of their air traffic control process.

Research questions

RQ1) What are the indicators which suggest the level of trust an operator has in the automated air traffic control system?

RQ2) How does an operator establish how much they should trust the automated system?

RQ3) Does the dispositional level of trust of an operator matter, and if so, how?

Indicators of trust

Definitions of trust, from all disciplines and applying to all domains, tend to have certain things in common. These similarities have been widely accepted by researchers in the area as characteristics of trust, and have been collated by Wang (2005). Using characteristics of trust has led to a variety of interesting and informative research. In terms of measurement and indicators of trust, the majority of the research has been conducted using questionnaires and rating scales such as those used in SATI (European Organisation for the Safety of Air Navigation, 2003b). These methods have provided useful data, but are based on self-reporting which calls into question their validity and external validity. The present study aims increase the robustness of this data by using observation as well as questionnaires.

If the present study is able to provide a set of measurable and observable indicators of trust in automated air traffic control systems, this could have significant implications for air traffic control. Trust levels could be presented on a scale if it can be cast as a one-dimensional construct. If this is possible then controllers operating below or above the optimum range could be identified, and this risk mitigated.

Deciding to trust

It is often useful to look to other domains for research inspiration, and e-commerce is an area that has been heavily researched in terms of trust. The focus has often been to identify things that signify trust to a user and to use these to increase trust in a vendor's website. The aim is ultimately to increase sales and boost the reputation of the vendor. Kim et al. (2008) identified four categories of antecedents that influence consumer trust, based on: cognition (observations and perceptions e.g. system reliability), affect (indirect interactions e.g. reputation), experience (consumer history e.g. online shopping experience) and personality (consumer's disposition to trust, shopping habits etc). The present study will use observational techniques combined with interview questions to try and find out what factors or cues help an air traffic controller to decide whether (or how much) they will trust a suggestion made by the automated system.

By shedding light onto what makes operators decide to place their trust in a system (or not), the present study could help with the future design or upgrades of automated systems. For instance, if it is found that operators consistently choose not to trust iFACTS for a particular reason (e.g. information quality is rated as low) then this could be changed to increase the trustworthiness of the system.

Dispositional trust

Finding indicators of trust in automation, and discovering how an operator decides whether to trust a system or not, are definitely worthwhile areas of study, but unless individual differences are considered, any findings from this research may not be easily generalisable. Dispositional trust refers to trust between humans or humans and systems upon initially encountering them, even if no interaction has taken place (Merritt and Ilgen, 2008). Dzindolet et al. (2003) identified that even after very limited interaction with an aid, people believe it to be "very trustworthy" and expect it to perform better than average. Numerous studies have supported this idea, but it has also been shown that people have different levels of dispositional trust, based

on individual differences such as personality and propensity to trust (Merritt and Ilgen, 2008). The third research question of the present study aims to explore the levels of trust which automation operators may have, and the impacts (if any) on trust in automation.

Knowledge about an operator's dispositional level of trust is valuable because if the present study finds indicators of trust in automation, these may be impacted by the dispositional levels. It is possible that person X has a higher level of dispositional trust than person Y, and due to that, their overall level of trust in the system is rated as higher. Other effects could also be based on the dispositional levels of trust, and these levels may also have no effect at all. Finding out whether these initial levels of trust matter, is worth investigating even if it only serves to remove them from the list of factors which affect trust in automation.

Project objectives

Explore of trust in automated air traffic control systems, focusing on automation.

Identify indications of the level of trust an operator has while using automation.

Identify what an operator uses in order to make a decision about whether they should trust an automated system.

Assess whether dispositional trust has an impact on overall trust.

Help formulate guidelines aiming to help NATS identify indications of inefficient or dangerous trust behaviour. These guidelines could be used to mitigate risk of misuse and disuse of automation and thus increase both safety and efficiency.

Scope

iFACTS will be the main automation system focused on in the present study. Dispositional trust levels will be investigated but the individual differences such as age, gender and experience with automation which may contribute to these levels of trust are beyond the scope of this work.

Motivations

The researcher has been very interested in aviation since becoming an air cadet and learning to fly in her teens. She has also been very interested in the human factors side of human-computer interaction since taking an internship with NATS as part of an undergraduate degree in psychology. The researcher has reestablished this connection with the human factors department at NATS to carry out the present study. The researcher also hopes to move into a human factors or user experience consultancy role after graduation and feels that this project will allow her to demonstrate skills in client management by engaging with an external company.

Beneficiaries

There are a number of groups which may tangibly benefit from the work that the present study aims to carry out. City University, London will benefit from being involved in work with NATS. They university has previously been involved in commercial work with NATS with regards to requirements engineering and creativity workshops. Reestablishing this connection in a new field, may open up tangible opportunities in the future. For example, if iFACTS were ever redesigned to incorporate things which made it appear more trustworthy to operators, then the interaction lab may be able to be involved in the testing of prototypes. NATS will benefit from increased insight and potential for safety and trust guidelines. If guidelines are formulated, these could have a significant impact on improving health and safety procedures.

The wider field of human-computer interaction will have the intangible benefit of an increased understanding and knowledge of trust in automation. The work could also be applied to other domains such as healthcare. For example, an interesting study could be to see if indicators of trust identified in air traffic control systems shed any light on trust in medication dispensation systems used by doctors and nurses.

Critical context

Defining trust

The Oxford English Dictionary defines trust as a "firm belief in the reliability, truth, or ability of someone or something". This is a relatively loose definition and its implication may vary enormously depending on the context within which it is used. As previously stated, there are many definitions of trust. However, definitions from all disciplines and applying to all domains, tend to have certain things in common. These similarities have been widely accepted by researchers in the area as characteristics of trust, and have been identified by Wang (2005) as follows:

Trustor and trustee. Two specific parties must exist, a trusting party (trustor) and the trusted party (trustee). The development of trust is based on the ability of the trustee to act in the interest of the trustor and the degree to which the trustor places in the trustee.

Vulnerability. Trustors must be willing to make themselves vulnerable for trust to be operational. Trustors must be willing to take the risk of losing something important to them and rely on the trustee not taking advantage of this vulnerability.

Produced actions. Trust leads to actions, mostly risk-taking behaviours. The form of action depends entirely on the situation and may concern something tangible or intangible.

Subjective matter. Trust is subjective, and is directly related to and affected by individual differences and situational factors. Different people view the role of trust differently, and the situation can define how much trust can influence outcomes. The most widely cited definition was presented by Mayer et al. (1995 as cited in Lee & See, 2004) who identify vulnerability as a key element of trust. For trust to be considered an important part of the human-automation relationship, human operators must willingly put themselves at risk, or in vulnerable positions by allowing responsibility for actions to be delegated to another party (the automation).

When considering trust and the measurement of trust, it is important to consider a baseline and individual differences. Every person has their own history, beliefs and experiences, so therefore, their base, or

dispositional level of trust is likely to be different. Dzindolet et al. (2003), explored this concept by focusing on the reliability of a system. The authors carried out experiments based on finding a soldier (in varying levels of camouflage) on a screen using a "contrast detector" aid. It was found that even after very limited interaction with an aid, people believe it to be "very trustworthy" and expect it to perform better than average. Considering this widely reported finding, it would be interesting to find out whether this dispositional level of trust matters. This does not seem to have been extensively researched in the past.

Given the domain of the present study, it is useful to consider a definition which incorporates intelligent systems. Madsen and Gregor (2000) define trust as "the extent to which a user is willing to act on the basis of the information, recommendations, actions of a computer-based tool or decision aid". This may be the most appropriate definition to use with regards to this project, but it is still imperfect.

Defining automation

In order to begin understanding trust in automation, a definition of automation is required. The US National Research Council defines automation as "a device or system that accomplishes (partially or fully) a function that was previously carried out (partially or fully) by a human operator." (European Organisation for the Safety of Air Navigation, 2003a). This definition is useful because it is flexible and allows for levels of automation through the inclusion of the word "partially". It is useful to think of automation as part of a spectrum (from manual to fully automatic), and Parasuraman et al. (2000) took this a step further and defined ten levels of human-machine cooperation. These levels range from 10, where the computer does everything, acts autonomously and ignores the human, to 1, where the computer offers no assistance and the human must make all decisions and actions.

Trust in automation

The European Organisation for the Safety of Air Navigation (2003b) specifically consider trust in a tool and break the concept of trust into several dimensions. See Figure 1. for a diagram of this model. This approach is interesting because it incorporates attributes to both the tool, and the operator. However, no attempt is made to prioritize these dimensions of trust, so it is difficult to know which would be the most important. Also, many of these dimensions, e.g. personal experience, faith, and usefulness would present issues if researchers were to try and measure these objectively. In terms of measurement of trust, the most widely used method is questionnaires

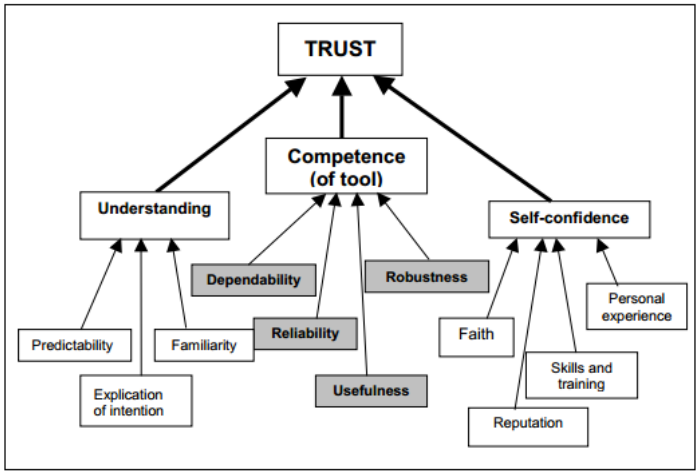


Figure 1. Model of trust and relationship between factors.

Approaches to research methods

The SHAPE Automation Trust Index (SATI) (European Organisation for the Safety of Air Navigation, 2003b) uses a combination of questions and rankings to measure trust. Figure 2. is an example of the sort of question an operator (in this case, and air traffic controller) may answer.

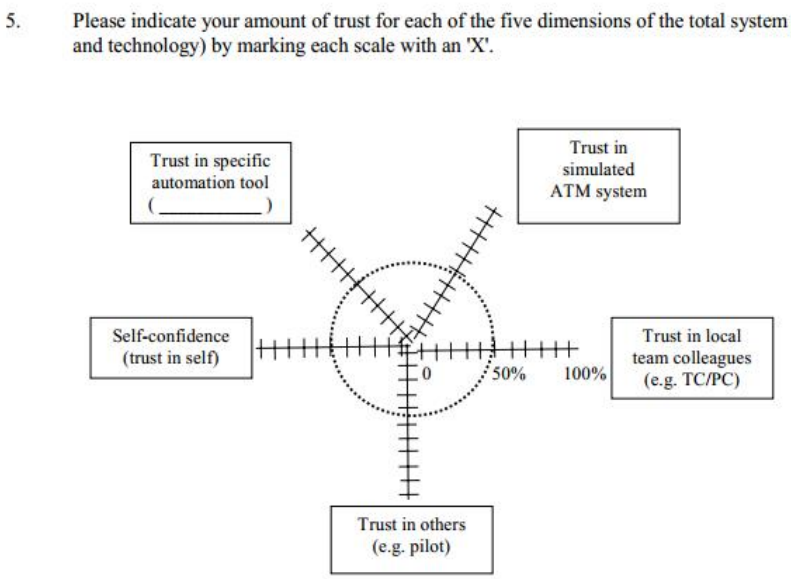


Figure 2. Example question from SATI

This approach has been widely used and has been hailed as a success. However, it still relies on self-reporting, and is therefore very subjective. Richer and potentially more objective data could be obtained by using observation techniques in conjunction with questionnaires.

Williams and Derro (2008) at Nasa used a combination of methods with observation as a key component. They interviewed and shadowed highly valued system engineers in an attempt to determine what the behaviour of a well-regarded system engineer was. The shadowing process included at least one full day of observation while the system engineers were carrying out their day-to-day tasks. Observed behaviours were grouped my theme and documented. A Myers-Briggs Type Indicator and temperament tests were also administered and then this data was combined an analysed. Williams and Derro found a shared set of specific behaviours which "enable individuals to excel as system engineers. These behaviours are observable and measureable". Applying an approach like this to the domain of automation in air traffic control, and the topic of trust could provide some revealing insights. Alterations to the method would be required to observe both the automation, and the operators interaction with it, instead of just focusing on the behaviour of the operator. Combining this approach with questionnaires about levels of trust in the automation at certain points during the day e.g. when the automation makes a suggestion about a flight path, could allow even more data to be collected.

Amato et al. (2011), used a combination of SATI questionnaires and observation in their study of trust observations in validation exercises. They investigated the relationship between trust and key performance indicators and although they did not find a significant relationship, they found that a lack of trust may cause disconnect with different indicators. This study took place with air traffic controllers and worked very well, suggesting that it could be successfully used again with another academic focus.

The present study will take inspiration from the methods used in studies such as these, and try to improve on them. Also, the previously unexplored idea of viewing trust on a timeline will be considered.

Approach – Methods and Tools for Analysis and Evaluation

One overarching investigation will take place, with separate parts used to answer the three research questions. There will be crossover between these parts and the methods involved in them. 15-20 participants will be recruited via NATS, and will mainly be an opportunistic sample of air traffic controllers available at the same time as the researcher. Participants will only be identified in the research by a number. The first observation session will be considered a pilot, and any alterations required e.g. question wording will be made before proceeding with the rest of the study.

Part 1 (RQ1) – Trust timelines

Method: Air traffic controllers will be observed by the researcher for a normal shift. Sound and video will also be recorded. Prior to this observation period, the researcher will introduce herself to the controller, obtain informed consent (for sample consent form, see Appendix 1) and sit next to them for 10 minutes to allow the controller to become accustomed to her presence. Appropriate events involving the automation will have been identified during the preliminary research and pilot study e.g. when assigning new flight path, or when instructing a pilot to climb/descend. During quieter times around these events, controllers will indicate

in the most safe and convenient way (e.g. pointing or saying it) on a scale how much they trust the automation. These questions will be based on the SATI questionnaire style (European Organisation for the Safety of Air Navigation, 2003b). The researcher will aim to get a trust rating as close to the event as possible without distracting the controller. The researcher will take particular note of what the controller says and does around these events.

Equipment: Video camera (inc. sound), printed scale, notepad, pens, consent forms.

Data collected: Researcher observations, video and sound recordings from camera, transcriptions of recordings, trust ratings.

Analysis: Videos will be imported into Morae and notes will be added at relevant points. Excel will be used for behaviour coding as well as for creating graphs and tables. SPSS will be used for statistical analysis and statistical significant testing e.g. t-test. A "trust timeline" will be produced for each controller providing coded details of their behaviour and verbal communication, as well as their ratings of trust in the automation. An overall "trust timeline" will be produced combining all data from all controllers. The researcher will be looking for patterns in behaviour when trust is rated higher or lower and if any are found, they will be grouped as indicators.

Part 2 (RQ2) – Decision to trust

Crossover: During the observations for part 1, the researcher will be looking out for specific items which indicate to a controller whether they should trust a suggestion provided by the automation. For example, a controller may always checks a specific tool before making a decision about using suggestions provided by the automation. In addition to (or in the absence of) these observations, the researcher will ask the controller questions.

Method: Air traffic controllers will be asked questions and prompted to provide information about how they make their decisions on whether to trust the suggestions from the automation or not.

Equipment: Video camera (inc. sound), prepared questions, prepared prompts, notepad, pens, consent forms.

Data collected: Sound recordings of controller answers, video recordings of behaviour, transcriptions of recordings, researcher observations.

Analysis: Data will be analysed using Morae, Excel and SPSS in a similar way to the data collected for part 1. The researcher will be looking out for patterns and items that are often used when a controller is making a decision on whether to trust the automation or not. If a consistent set of items are found, they will be grouped.

Part 3 (RQ3) – Dispositional trust questionnaire

Crossover: 50% of controllers will be given the questionnaire before the observation sessions for part 1, and 50% afterwards.

Method: Air traffic controllers will be given a questionnaire where they have to state their level of trust (Likert scale) in everyday situations involving automation e.g. trust that a cash machine is showing the correct

balance. Questions will also include trust in individuals, entities (such as companies, or the government) and themselves. These questions will be based on the SATI questionnaire style (European Organisation for the Safety of Air Navigation, 2003b).

Equipment: Questionnaires, notepad, pens, consent forms.

Data collected: Trust ratings.

Analysis: Excel will be used to create graphs of trust ratings. SPSS will be used for statistical analysis and significance testing. The researcher will be looking for indications of dispositional levels of trust, and will compare those with the observed trust behaviour from parts 1 and 2 to see whether any statistically significant effect can be found.

Risks

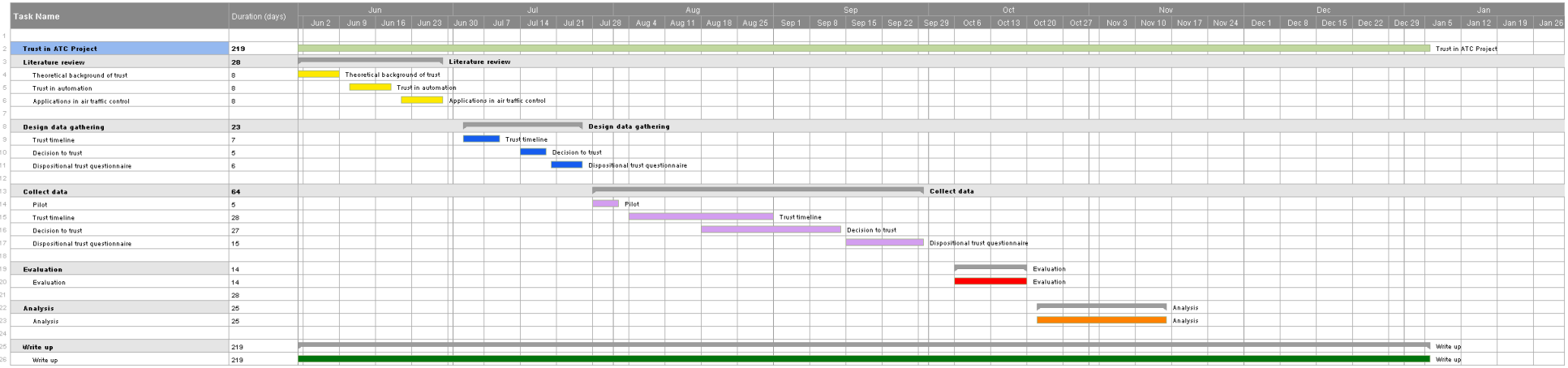
No.	Risk Description	Priority	Mitigation Actions
1	NATS may withdraw their offer of support with this project.	High	Researcher must keep NATS informed of progress being made with an emphasis on the benefits for the company.
2	NATS are based in Southampton whereas the researcher is based in London, so logistics may cause problems. Finding times for research to take place which are agreeable for both parties may be difficult.	High	Visits must be arranged at least a month in advance to ensure availability of relevant people and resources.
3	NATS may not be able to provide enough participants.	Medium	Researcher must work on a recruitment plan with NATS and aim to recruit more participants than required to allow for attrition.
4	Participants may find being part of the study distracts them from their work.	High	Take note of health and safety regulations provided by NATS and attend full safety briefing prior to any observation sessions.
5	Pilot study may be so unsuccessful that the approach may need to be changed entirely. This would have a significant impact on the schedule of work.	High	Researcher should make use of NATS' expertise and get them to sign off on all methods and questions before use. Extensive preliminary research will also help mitigate this risk.
6	Uncertainty in the researcher's workplace. Researcher may be subject to a significant increase in workload from September onwards. The likelihood of this occurring will be known by the beginning of June.	Medium	Researcher has saved the majority of her holiday allowance for 2014 for this project. If researcher is not allowed to take her holiday at convenient times, she will speak to NATS about attending observing controllers during weekend shifts.

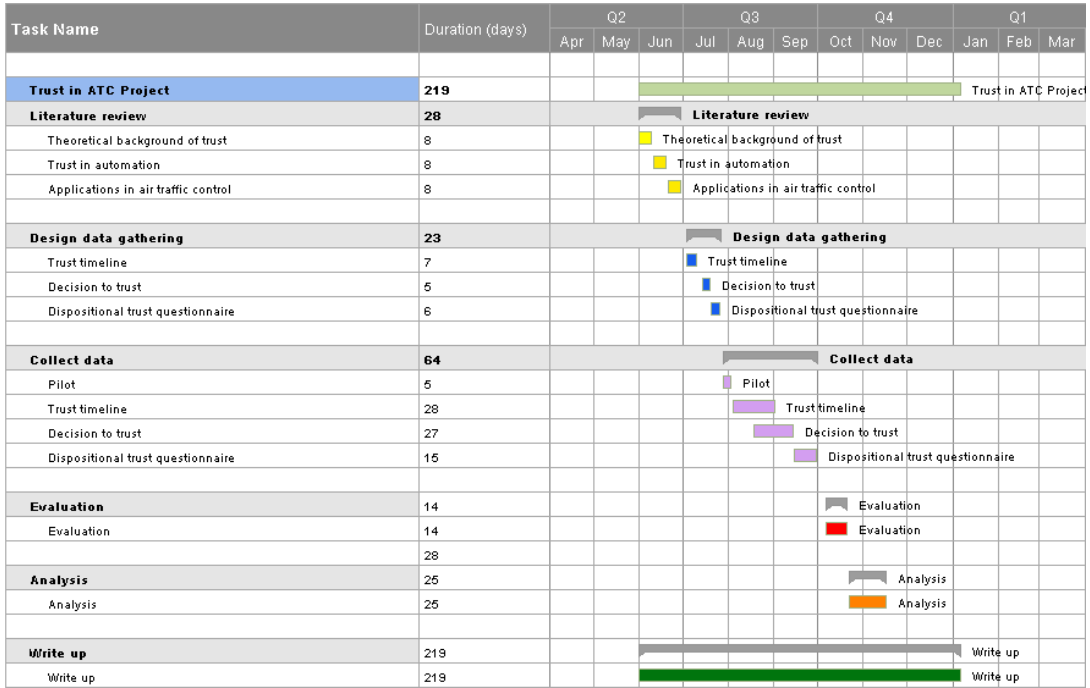
7	Computer may malfunction, or data may be lost e.g. misplaced USB stick, Cloud storage failure	High	Backup everything using Dropbox, and physical storage.
8	Communication may break down between NATS and the researcher.	High	Weekly or fortnightly catch-up sessions by phone, email or face-to-face.

Plan of work

The Gantt charts below show steps required to complete the proposed work. Figure 1 shows this breakdown by month and week, and Figure 2 by quarter and month.

Figure 1.





Figure

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Rotter, J. (1967). A New Scale for the Measurement of Interpersonal Trust. Journal of Personality, 35, pp.651-665.

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Williams, C. and Derro, M. (2008). NASA Systems Engineering Behaviour Study.

Ethics

The researcher will obtain signed informed consent forms (similar to the form attached in Appendix 1) from all participants. All participants will be debriefed and made aware that they may withdraw themselves or their data from the study at any point. Participants will be given contact details for the researcher in case they have any questions. The present study does involve any deception, and

Research Ethics Checklist

School of Informatics BSc, MSc, MA Projects

If the answer to any of the following questions (1 – 3) is NO, your project needs to be modified.		*Delete as appropriate*
1.	Does your project pose only minimal and predictable risk to you (the student)?	**Yes**
2.	Does your project pose only minimal and predictable risk to other people affected by or participating in the project?	**Yes**
3.	Is your project supervised by a member of academic staff of the School of Informatics or another individual approved by the module leaders?	**Yes**
If the answer to either of the following questions (4 – 5) is YES, you MUST apply to the University Research Ethics Committee for approval. (You should seek advice about this from your project supervisor at an early stage.)		*Delete as appropriate*
4.	Does your project involve animals?	**No**
5.	Does your project involve pregnant women or women in labour?	**No**
If the answer to the following question (6) is YES, you MUST complete the remainder of this form (7 – 19). If the answer is NO, you are finished.		*Delete as appropriate*
6.	Does your project involve human participants? For example, as interviewees, respondents to a questionnaire or participants in evaluation or testing?	**Yes**
If the answer to any of the following questions (7 – 13) is YES, you MUST apply to the Informatics Research Ethics Panel for approval and your application may be referred to the University Research Ethics Committee. (You should seek advice about this from your project supervisor at an early stage.)		*Delete as appropriate*
7.	Could your project uncover illegal activities?	**No**
8.	Could your project cause stress or anxiety in the participants?	**No**
9.	Will you be asking questions of a sensitive nature?	**No**
10.	Does your project rely on covert observation of the participants?	**No**
11.	Does your project involve participants who are under the age of 18?	**No**
12.	Does your project involve adults who are vulnerable because of their social, psychological or medical circumstances (vulnerable adults)?	**No**
13.	Does your project involve participants who have learning difficulties?	**No**

The following questions (14 – 16) must be answered YES, i.e. you MUST COMMIT to satisfy these conditions and have an appropriate plan to ensure they are satisfied.	*Delete as appropriate*
14. Will you ensure that participants taking part in your project are fully informed about the purpose of the research?	**Yes**
15. Will you ensure that participants taking part in your project are fully informed about the procedures affecting them or affecting any information collected about them, including information about how the data will be used, to whom it will be disclosed, and how long it will be kept?	**Yes**
16. When people agree to participate in your project, will it be made clear to them that they may withdraw (i.e. not participate) at any time without any penalty?	**Yes**
The following questions (17 – 19) must be answered and the requested information provided.	*Delete as appropriate*
17. Will consent be obtained from the participants in your project? Consent from participants will be necessary if you plan to gather personal, medical or other sensitive data about them. "Personal data" means data relating to an identifiable living person; e.g. data you collect using questionnaires, observations, interviews, computer logs. The person might be identifiable if you record their name, username, student id, DNA, fingerprint, etc. *If **YES**, provide the consent request form that you will use and indicate who will obtain the consent, how are you intending to arrange for a copy of the signed consent form for the participants, when will they receive it and how long the participants will have between receiving information about the study and giving consent, and when the filled consent request forms will be available for inspection (**NOTE**: subsequent failure to provide the filled consent request forms will automatically result in withdrawal of any earlier ethical approval of your project):*	**Yes**
18. Have you made arrangements to ensure that material and/or private information obtained from or about the participating individuals will remain confidential? *Provide details:* All participants will be referred to by a number and their personal details will only be known to the researcher. Signed consent forms will be stored in a locked cabinet (with no reference to participant numbers).	**Yes**
19. Will the research be conducted in the participant's home or other non-University location? *If **YES**, provide details of how your safety will be preserved:* Research will be conducted at NATS base near Southampton, UK. Photo ID is required to enter the base. Security cameras will be running at all times.	**Yes**

Templates

The templates available from the links below **must** be adapted according to the needs of your project before they are submitted for consideration. The sample form provided for projects involving children is to be used by the parents/guardians of the children participating in the research project.

Adult information sheet:

http://www.city.ac.uk/__data/assets/word_doc/0018/153441/TEMPLATE-FOR-PARTICIAPNT-INFORMATION-SHEET.doc

Adult consent form:

http://www.city.ac.uk/__data/assets/word_doc/0004/153418/TEMPLATE-FOR-CONSENT-FORM.doc

Child information sheet:

http://www.city.ac.uk/__data/assets/word_doc/0003/153462/Sample-Child-Information-Sheet.doc

Child consent form:

http://www.city.ac.uk/__data/assets/word_doc/0020/153461/Sample-child-consent-1.doc

Appendix 1

PARTICIPANT CONSENT FORM

(Headed paper)

Trust in Air Traffic Control

Please initial box

1.	I agree to take part in the above City University London research project. I have had the project explained to me, and I have read the participant information sheet, which I may keep for my records. I understand this will involve [*researcher to add/delete as appropriate prior to use*]: be interviewed by the researcher allow the interview to be videotaped/audiotaped complete questionnaires asking me about trust in automation and trust in general make myself available for a further interview should that be required	
2.	This information will be held and processed for the following purpose(s): to help the researcher explore trust in air traffic control I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party. No identifiable personal data will be published. The identifiable data will not be shared with any other organisation.	
3.	I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way.	
4.	I agree to City University London recording and processing this information about me. I understand that this information will be used only for the purpose(s) set out in this statement and my consent is conditional on the University complying with its duties and obligations under the Data Protection Act 1998.	
5.	I agree to take part in the above study.	

_____	_____	_____
Name of Participant	Signature	Date
_____	_____	_____
Name of Participant	Signature	Date

(When completed, 1 copy for participant; 1 copy for researcher file

8.3 APPENDIX B: STUDY PLAN

Trust in the Sharing Economy– Project Plan

Overview of study

This study aims to shed light on trust in the sharing economy, as this has not been studied in depth before. Shared economy networks have similarities with e-commerce and social media networks so research in these areas will be drawn on. The BorrowMyDoggy website will be used as an example of a sharing network.

Participants will be moderately tech-savvy dog owners, comfortable with the idea of potentially meeting someone online and letting this person borrow their dog. This is a within-groups design and participants will be asked to pick the borrower they think is most trustworthy, and then rank all borrowers in all three conditions. The conditions are as follows:

Borrower name and avatar presented

Borrower name and avatar presented alongside star-ratings (1x4*, 1x3*, 1x2*, 1x1*)

Borrower name and avatar presented as in condition b) but where the borrower with 3* also has a paw print on their profile. This pawprint indicates (via a tooltip) that the borrower has verified their identity using a social media account e.g. Facebook.

The most interesting part of the study is that the researcher is not sure whether the star-rating or the social media verification will be most important to the participant.

As part of a semi-structured interview after the tasks, participants will be asked questions about why they made their decisions and the sort of information they would be looking for to make a decision about whether to allow a borrower to meet their dog or not.

The effect of dispositional trust is also considered.

Research questions

Can star-ratings be used to affect the perception of peer trustworthiness in an online collaborative consumption environment?

Does the perception of trustworthiness change when star-ratings and peer verification via a social media account are both present in a collaborative consumption environment? If so, how?

How do levels of dispositional trust affect overall trust levels?

What information do owners look for when making their decision about whether to lend an item?

Participants

Sample style?

Non-probabalistic (time, money etc). Convenience sampling, with potentially some snowball sampling.

Who?

20-30 people.

Must own a dog, be comfortable with the sharing concept behind BorrowMyDoggy and classify themselves as a moderately experienced internet user.

Methods used

Questionnaires

Tasks

Semi-structured interviews

Materials

Consent forms

Information sheets

Laptop with webcam & microphone

Testing script

Wireframes with potential borrowers presented in Latin square

Pre-task questionnaire

Dispositional trust questionnaire

Interview questions

Procedure

When participants had shown an interest in being part of the study (and had informally passed the screener) they were be contacted (mainly via email) and given the following:

Screener

Information sheet

Consent form

Pre-Task Questionnaire

Once these had been filled in, an appropriate time for the participant to meet the researcher was be arranged.

The participant was then asked to fill in a dispositional trust questionnaire.

After the questionnaire, participants were asked to complete the following tasks in all three conditions (no cues, star-ratings, or star-ratings and social paw print):

The participants were asked which borrower they would be most likely to trust with their dog.

They were then asked to score each borrower from 0-10 based on how much they would trust them with their dog. In this situation, 0 implies no trust and 10 implies a lot of trust.

After making their choices, participants were asked to rate the different "websites" from 0-10 based on how much they trusted each of them.

After the tasks, participants were asked questions as part of a semi-structured interview. The questions broadly covered the following aspects:

What makes you trust this (the chosen) website?

What makes you trust this (the chosen) borrower?

Why did you rank the borrowers in this (the chosen) order?

What information would be looking for before deciding to contact a borrower?

Why would you be looking for this particular information?

How would you expect this information to be presented?

Have you ever had a negative experience with a person that was looking after your dog?

If you had a negative experience with a borrower, would you still trust the website and find a new borrower?

After the interview, participants were thanked and provided with cake as compensation for their time.

Data collection and analysis

Due to a mixture of methods being used, the data was analysed in different ways. See below for a breakdown based in the research question the data attempts to answer.

Research question 1

Can star-ratings be used to affect the perception of peer trustworthiness in an online collaborative consumption environment?

Hypotheses

Websites with star-ratings will be rated more trustworthy than sites without star-ratings.

Borrowers with higher star-ratings will be rated more trustworthy than borrowers with lower star-ratings.

Data

Ratings of websites and borrowers.

Analysis

The median and mode will be calculated and used as a measures of central tendency. Wilcoxon rank sum test/Mann Witney U tests will be applied.

Research question 2

Does the perception of trustworthiness change when star-ratings and peer verification via a social media account are both present in a collaborative consumption environment? If so, how?

Hypotheses

Null – A website with star-ratings and peer verification via a social media account will be rated as trustworthy as a website with only star-ratings.

Alternate – There will be a difference between ratings of trustworthiness between a website with star-ratings and peer verification via a social media account and the ratings for a website with only star-ratings.

Null – A borrower with star-ratings and peer verification via a social media account will be rated as trustworthy as a borrower with only star-ratings.

Alternate – There will be a difference between ratings of trustworthiness between a borrower with star-ratings and peer verification via a social media account and the ratings for a borrower with only star-ratings.

Data

Ratings of websites and borrowers.

Analysis

The median and mode will be calculated and used as a measures of central tendency. Wilcoxon rank sum test/Mann Witney U tests will be applied.

Research question 3

How do levels of dispositional trust affect overall trust levels?

Hypotheses

Participants with higher levels of dispositional trust will be more likely to give all websites higher scores.

Participants with lower levels of dispositional trust will be more likely to give all websites lower scores.

Participants with higher levels of dispositional trust will be more likely to give all borrowers higher scores.

Participants with lower levels of dispositional trust will be more likely to give all borrowers lower scores.

Data

Responses on the dispositional trust questionnaire will be allocated scores (e.g. strongly disagree = -2, disagree = -1, agree = 1, strongly agree = 2) and at the end, each participant will have an individual dispositional trust score.

Analysis

While this data began as ordinal, the resultant score is a measurement in itself and is continuous so it is classified as meeting the requirements for a parametric test. Pearson's correlation and t-tests are suitable statistical tests for this data. The raw likert data will also be presented in frequency tables, charts and potentially a mosaic plot.

Research question 4

What information do owners look for when making their decision about whether to lend an item?

Data

Data will come from the semi-structured interviews with participants.

Analysis

When participants mention the same information/method of presenting the information etc, this will be counted and be used to create graphs. The majority of the data in this section will be presented in the report as quotes.

8.4 APPENDIX C: SCREENER

Screener

Dear Potential Participant,

You are receiving this because you have indicated that you might be willing to take part in my research project. Thank you!

This study is about trust in the sharing economy, using BorrowMyDoggy.com as an example.

First I need to check that you are a suitable participant. Please answer the following questions and email the sheet back to me at caroline.owen.1@city.ac.uk .

Thanks in advance.

Caroline

Screener questions

Do you currently own a dog?

Yes ☐ No ☐

Are you comfortable with the sharing concept behind BorrowMyDoggy?

Yes ☐ No ☐

Do you regularly use the Internet, websites and/or apps?

Yes ☐ No ☐

4) Please give details of the devices you use on a regular basis e.g. iPad, smartphone, laptop

8.5 APPENDIX D: INFORMATION SHEET

Participant Information Sheet

Dear Potential Participant,

You are invited to take part in a research study.

Before you decide whether you would like to take part, it is important that you understand why the research is being done and what it would involve for you.

Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear, or if you would like more information.

You can contact me at caroline.owen.1@city.ac.uk or on 07747 775179.

Thank you for considering taking part in my study,

Caroline

Title of the research study

The provisional title of this project is: "What's Mine is (Y)ours" - Trust in the Sharing Economy.

The title may change, but the study will remain the same.

What is the project about?

"Trust" is a term we use frequently and without much consideration. However, finding a suitable definition has proven elusive. Trust has been researched in a variety of disciplines including philosophy, economics, psychology, and human-computer interaction. Much of the research relevant to this project has focussed on e-commerce. However, this project will explore trust in an emerging industry – the sharing economy.

There are a variety of definitions available for the concept of the sharing economy. For the sake of clarity and consistency within this project. The terms will be broken down as below.

Sharing economy - the over-arching idea of sharing human and physical resources through a socio-economic system. Information technology is often used to connect and empower users.

Collaborative consumption - the economic arrangements in which users share, trade, swap or rent access to products/services. For example, Jane may own a car in London. Through an online network like BlaBlaCar, Jane rents out her car to other people. The people renting the car access it rather than own it.

Some examples of sharing economy networks which you may have heard of are listed below.

eBay

Craigslist

Kickstarter

Couchsurfing

Airbnb

Freecycle

BlaBlaCar

TaskRabbit

BorrowMyDoggy

Trust is essential to the success of the sharing economy, and the way that trust is established may be different to the way it works in in face-to-face and e-commerce environments. This project aims to explore trust in the shared economy by using BorrowMyDoggy.com as an example.

If you would like me to explain further, please don't hesitate to contact me using the details at the top of this page.

What is the purpose of the study?

This study is being conducted as part of my university research project for the MSc in Human Centred Systems at City University, London.

The purpose of the study is to explore the effect of trust cues on perceptions of trustworthiness in peers and websites using BorrowMyDoggy.com as an example. I will also be looking at what information a person would be looking for to help them make a decision about who they would be most likely to trust with looking after their dog. An individual's baseline level of trust will also be explored to see if this has an impact.

What is involved in this research?

Participants will be asked to fill in a questionnaire to establish their baseline level of trust. Then they will be asked to look at three prototype websites and make choices about who they would be most likely to trust with looking after their dog. Finally, they will be asked to participate in a short interview where they will be asked about why they made their choices and what information they would be looking for to help them make a decision about who to trust.

The responses from all participants will then be analysed to investigate if there is a statistically significant effect of trust cues on perceptions of trustworthiness in peers and websites. Interview data will also be analysed to establish whether there is any common ground in the information people look for when making the decision to trust, and how this fits with established research on the topic.

Do I have to take part?

No. It is up to you to decide whether or not to take part. Participation in the project is voluntary. You can decide not to participate without giving a reason and without incurring any penalty.

If you do decide to take part you will be asked to sign a consent form. This states that you understand what the project is about, what it involves, and that you agree to take part.

If you do decide to participate:

you can withdraw at any time during the research without giving a reason

you can choose to not to answer any question or take part in any activity without giving a reason

What will I be asked to do if I take part?

First we will arrange a time to meet so you can participate. This meeting will last approximately 1 to 1 ½ hours.

When we meet I will first introduce the study again and answer any questions that you may have.

Then you will be asked to fill in a SurveyMonkey questionnaire. Paper copies will be provided you would prefer to fill it in this way.

You will be asked to look at three prototype websites and make a decision about which person you would trust in each.

Then you will be asked questions about why you made your choices and what information you would be looking for to help you make your decision about who to trust.

Where will the study take place?

Preferably the study will take place in a quiet setting so that I will be able to record the interview clearly.

I will offer to come to your home to minimize inconvenience to you. However, if you are not comfortable with this then we can arrange another quiet place to meet.

Do I need to bring anything?

You do not need to bring anything or prepare anything before you participate.

How will you record our interview?

I will audio record our interview so I am able to remember the things that you said after I have left. I will type up the audio files so I can analyse the content of our interview.

Will taking part in the study be kept confidential?

Any information that can indentify you will only be seen by the researcher, and in exceptional circumstances by university staff. You will be assigned a participant code and referred to in the study by this code.

Your name will not be stored with any of the data collected about you. I will also ensure that you are not identifiable from any audio recordings.

The information collected during the study will be kept in password protected files and the data will be anonymised. This means that it will not be possible to identify you from the information.

Are there any disadvantages or risks in taking part?

Participating in the research should not put you at disadvantage or risk.

If at any time you feel uncomfortable, do not want to answer a question, participate in an activity, or if you wish to withdraw from the study, then please let me know.

What will happen if I don't want to carry on with the study?

You can withdraw at any time during the research without giving a reason and without incurring any penalty.

10. Further information and contact details

If you require further information please contact the researcher:

Caroline Owen

caroline.owen.1@city.ac.uk

07747 775179

If you wish to speak to the tutor responsible for supervising this project please speak to:

Dr Simone Stumpf

simone.stumpf.1@city.ac.uk

What if there is a problem?

If you have any problems, concerns or questions about this study, please speak to the researcher: Caroline Owen (details above).

If you would rather speak to someone else, you can speak to the tutor responsible for supervising this project: Dr Simone Stumpf (details above).

If you remain unhappy and wish to complain formally, you can do this through the University complaints procedure:

Anna Ramberg

Secretary to Senate Research Ethics Committee

Research Office, E214

City University London

Northampton Square London

EC1V 0HB

Email: Anna.Ramberg.1@city.ac.uk

Tel: 020 7040 3040

Thank you for taking the time to read this information sheet.

8.6 APPENDIX E: CONSENT FORM

Consent Form

CITY UNIVERSITY LONDON

Title of Study: "What's Mine is (Y)ours" - Trust in the Sharing Economy.

Please initial box

	I agree to take part in the above research project. I have had the project explained to me, and I have read the participant information sheet, which I may keep for my records. I understand this will involve: answering a questionnaire making choices on who to trust by looking at three prototype websites being interviewed by the researcher allowing the interview to be audio recorded	
	This information will be held and processed for the following purpose(s): to conduct a masters level research project to explore the effect of trust cues on perceptions of trustworthiness in peers and websites using BorrowMyDoggy.com as an example to explore what sort of information a person would be looking for to help make a decision about who they would be most likely to trust with looking after their dog to identify whether an individual's baseline level of trust has an impact on trusting choices I understand that any information I provide is confidential. I understand that information that could lead to the identification of any individual will not be disclosed in any reports on the project, or to any other party. No identifiable personal data will be published and identifiable data will not be shared with any other organisation. I consent to the audio recordings being listened to by other researchers and interested professionals.	

	I understand that my participation is voluntary. I understand that I can choose not to participate in part or all of the project. I understand that I can withdraw at any stage of the project without giving a reason and without being penalised or disadvantaged in any way.	
	I understand that this information will be used only for the purposes set out in this statement and my consent is conditional on the City University complying with its duties and obligations under the Data Protection Act 1998.	
	I agree to take part in the above study.	

_____	_____	_____
Name of Participant	Signature	Date

_____	_____	_____
Name of Researcher	Signature	Date

When completed, 1 copy for participant; 1 copy for researcher file.

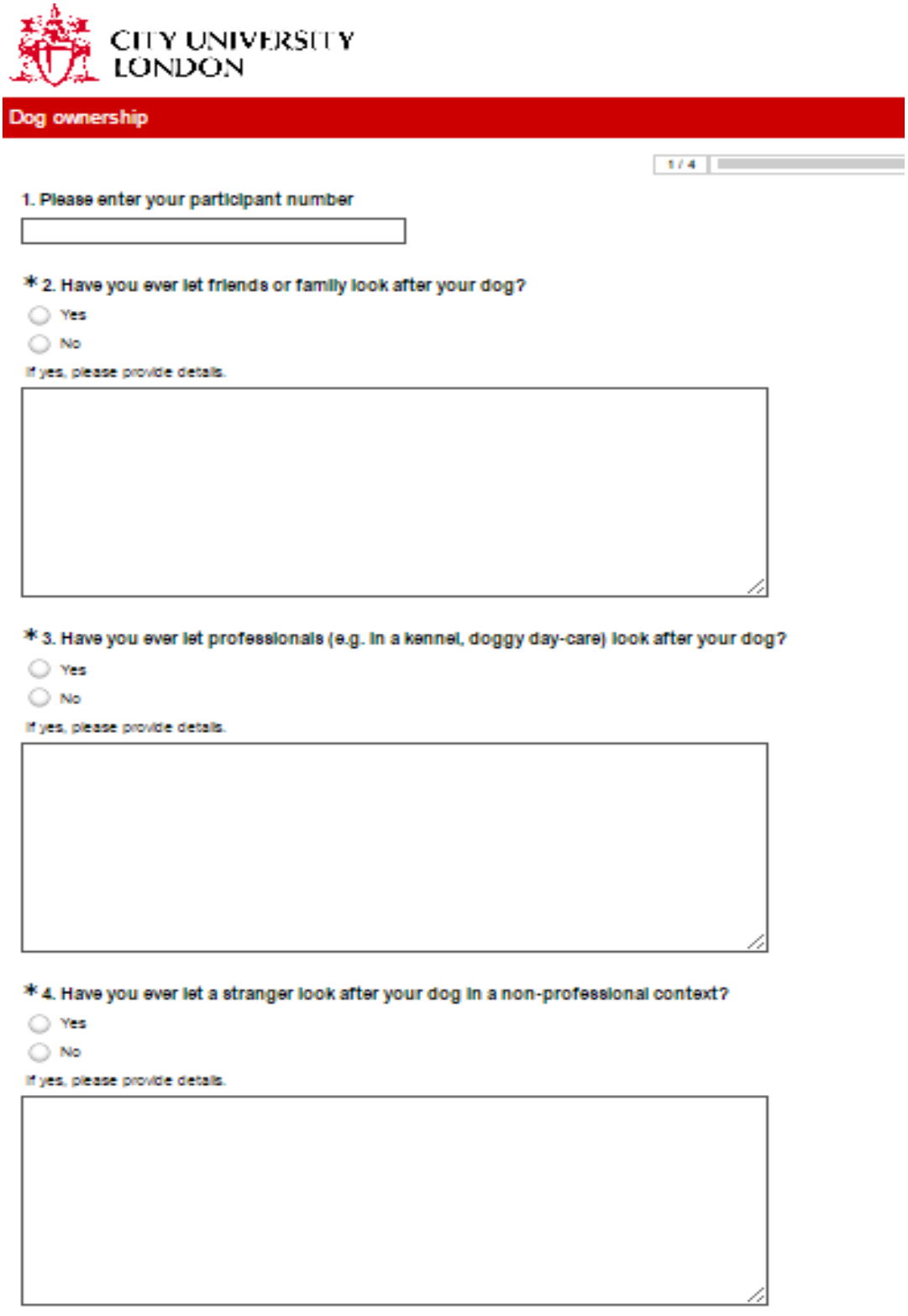
8.7 Appendix F: Participant Profile Data

Participant ID	Age range	Gender	How often they use sharing economy websites	People that have looked after their dog	Session method	Lend personal possessions to friends	Lend personal possessions to acquaintances	Lend money to friends	Lend money to acquaintances	Leave door unlocked
P1	Data removed from the study									
P2	18-24	Male	Never	Neighbour	Face-to-face	Often	Sometimes	Sometimes	Infrequently	Never
P3	55-64	Female	Often	Neighbour	Face-to-face	Very Often	Often	Very Often	Infrequently	Infrequently
P4	18-24	Male	Infrequently	Neighbour	Face-to-face	Sometimes	Infrequently	Never	Never	Infrequently
P5	25-34	Female	Never	Friends	Face-to-face	Infrequently	Infrequently	Infrequently	Infrequently	Infrequently
P6	25-34	Female	Sometimes	Friends and family	Face-to-face	Often	Sometimes	Very Often	Sometimes	Often
P7	25-34	Female	Never	Friends and family	Face-to-face	Sometimes	Infrequently	Sometimes	Infrequently	Often
P8	25-34	Male	Never	Family	Face-to-face	Sometimes	Infrequently	Sometimes	Never	Never
P9	35-44	Female	Never	Family	Face-to-face	Sometimes	Never	Infrequently	Never	Never
P10	45-54	Female	Infrequently	Friends	Face-to-	Sometimes	Infrequently	Infrequently	Never	Never

				and dog sitter	face					
P11	35-44	Male	Never	Family and dog sitter	Face-to-face	Infrequently	Never	Never	Never	Never
P12	35-44	Female	Often	Family	Face-to-face	Often	Sometimes	Sometimes	Never	Infrequently
P13	45-54	Female	Never	Family	Face-to-face	Never	Sometimes	Never	Never	Never
P14	25-34	Female	Infrequently	Family and kennel	Face-to-face	Often	Infrequently	Infrequently	Never	Never
P15	25-34	Female	Sometimes	Family, neighbours and doggy day care	Face-to-face	Often	Sometimes	Infrequently	Never	Never
P16	25-34	Male	Sometimes	Family, dog walker, doggy day care	Face-to-face	Infrequently	Infrequently	Never	Never	Never
P17	25-34	Female	Often	Family and dog walker	Face-to-face	Often	Sometimes	Infrequently	Never	Never
P18	25-34	Female	Never	Family, friends and doggy day care	Face-to-face	Often	Sometimes	Infrequently	Never	Sometimes
P19	45-54	Male	Never	Friends and kennel	Skype	Sometimes	Sometimes	Sometimes	Never	Never
P20	18-24	Female	Never	Friends and kennel	Skype	Sometimes	Infrequently	Infrequently	Never	Never
P21	45-54	Female	Never	Friends	Skype	Sometimes	Never	Never	Never	Never

				and kennel						
P22	25-34	Female	Never	Friends and kennel	Skype	Often	Never	Sometimes	Never	Never
P23	25-34	Male	Never	N/A	Skype	Often	Sometimes	Sometimes	Sometimes	Never
P24	35-44	Female	Infrequently	Family and friends	Face-to-face	Often	Often	Sometimes	Infrequently	Never
P25	25-34	Female	Infrequently	Family	Face-to-face	Very Often	Often	Very Often	Sometimes	Never
P26	25-34	Male	Infrequently	Family	Skype	Sometimes	Infrequently	Infrequently	Infrequently	Never
P27	25-34	Female	Infrequently	Family and kennel	Skype	Sometimes	Never	Sometimes	Never	Sometimes
P28 (technical issue)	18-24	Female	Never	Family	Skype	Sometimes	Never	Sometimes	Never	Never
P29	25-34	Male	Very Often	Family and kennel	Face-to-face	Often	Sometimes	Often	Sometimes	Often
P30	25-34	Male	Never	N/A	Face-to-face	Infrequently	Infrequently	Sometimes	Infrequently	Never

8.8 APPENDIX G: QUESTIONNAIRE



CITY UNIVERSITY LONDON

Dog ownership

1 / 4

1. Please enter your participant number

* 2. Have you ever let friends or family look after your dog?

- Yes
- No

If yes, please provide details.

* 3. Have you ever let professionals (e.g. in a kennel, doggy day-care) look after your dog?

- Yes
- No

If yes, please provide details.

* 4. Have you ever let a stranger look after your dog in a non-professional context?

- Yes
- No

If yes, please provide details.

Trust

2 / 4 50%

***5. Please state the degree to which you agree or disagree with each of the following statements.**

	Strongly Disagree	Somewhat Disagree	Neither Disagree Nor Agree	Somewhat Agree	Strongly Agree
In general, people really do care about the well-being of others.	○	○	○	○	○
The typical person is sincerely concerned about the problems of others.	○	○	○	○	○
Most of the time, people care enough to try and be helpful, rather than just looking out for themselves.	○	○	○	○	○
In general, most people keep their promises.	○	○	○	○	○
I think people generally try to back up their words with their actions.	○	○	○	○	○
Most people are honest in their dealings with others.	○	○	○	○	○
I believe that most professional people do a very good job at their work.	○	○	○	○	○
Most professionals are very knowledgeable in their chosen field.	○	○	○	○	○
A large majority of professional people are competent in their area of expertise.	○	○	○	○	○
I usually trust people until they give me a reason not to trust them	○	○	○	○	○
I generally give people the benefit of the doubt when I first meet them.	○	○	○	○	○
My typical approach is to trust new acquaintances until they prove I should not trust them.	○	○	○	○	○

***6. Please indicate how often you perform the following actions.**

	Never	Infrequently	Sometimes	Often	Very often
Lend personal possessions to friends.	○	○	○	○	○
Lend personal possessions to acquaintances.	○	○	○	○	○
Lend money to friends.	○	○	○	○	○
Lend money to acquaintances.	○	○	○	○	○
Leave your door unlocked	○	○	○	○	○

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Sharing economy

3 / 4 75%

***7. Have you ever used a sharing economy website before?**

- Yes
- No

If yes, please provide details.

8. If you have used a sharing economy website before, please answer the following.

	Never	Infrequently	Sometimes	Often	Very often
How often do you use sharing economy websites?					

9. If you have used a sharing economy website before, please answer the following.

	No trust at all	Little trust	Quite a bit of trust	A lot of trust
How much trust do you have in sharing economy websites?				

10. Please use the space below to add any extra comments you want to add about your views on the sharing economy.

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Online habits

4 / 4 100%

***11. On average, how much time per week do you spend on each of the following online activities?**

	None	0-30 minutes	30-60 minutess	1-2 hours	2-4 hours	4-8 hours	8+ hours
Reading newspapers online.	○	○	○	○	○	○	○
Reading and/or posting messages to news groups.	○	○	○	○	○	○	○
Accessing information online about products and services you may buy.	○	○	○	○	○	○	○
Shopping (i.e., actually purchasing something) online.	○	○	○	○	○	○	○
Accessing online social groups or social media to find people or you may interact with.	○	○	○	○	○	○	○
Posting (i.e., actually interacting with people) in online social groups or social media.	○	○	○	○	○	○	○

8.9 APPENDIX H: SESSION GUIDE

Session guide

Introduction (5 minutes)

Thank you for coming today, I appreciate you taking the time to help me with my project. I'm Caroline, a student at City University. I am conducting a research project as part of my masters course in human-computer interaction. As you know, my topic is trust in the shared economy.

Here is an information sheet I would like you to read and a consent form for you to initial and sign. Let me know if you have any questions.

[give participants information sheet and consent form to read and sign]

Thank you! Right, onto the next bit. Today I will ask you to complete a questionnaire and then we'll be looking at some prototypes of a website and I will ask you to make some choices.

Your feedback is really useful to me because I am trying to understand how people trust in websites. I'm going to show you some prototype pages for a website called BorrowMyDoggy and ask you what you think about them. The website is real, but I have created the prototypes we will be using today. Please don't worry about offending me as I don't work for BorrowMyDoggy and had nothing to do with the designs for the website.

This session will take no longer than one hour, but please let me know if you need a break or have any questions.

Just so you know, our conversation will be recorded. This is just to help me remember what we spoke about today.

After we finish, I will summarise what you tell me but I won't use your name in any of my notes so you will remain entirely anonymous.

Do you have any questions before we start?

Introductory questions (5 minutes)

First of all, I'd like to ask a few questions to find out a bit more about you.

Which of the following age groups do you fit into?

18-24 25-34 35-44 45-54 55+

Which gender do you identify with?

What is your occupation?

Great! Now I'd like you to fill in a questionnaire for me. Are you happy to start?

Questionnaire (10 minutes)

Would you prefer to complete the questionnaire on the laptop or on paper?

[give participant appropriate method of completing questionnaire]

Let me know if you have any questions or get stuck at all.

Great! Now I'm going to show you some prototypes and get you to complete some activities. Are you ready to start?

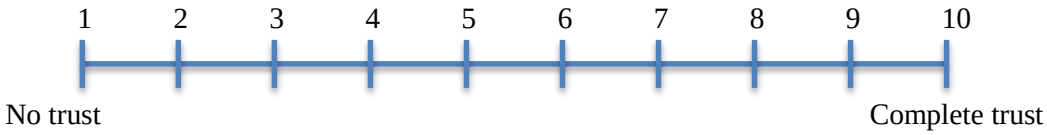
Experiment (20 minutes)

Imagine you have heard about BorrowMyDoggy from a friend, and you have signed up to the website. You want to see the people in your area that would like to borrow a dog.

You have entered your postcode into the search bar, and now you see the search results. You will

In this situation, which person do you trust the most?

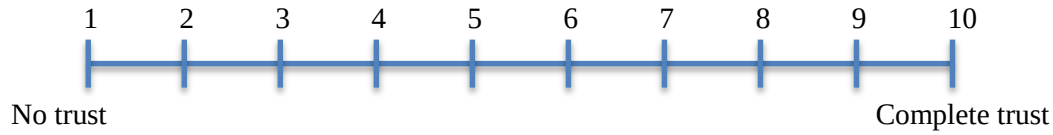
Can you explain why you have chosen this person?



Could you give me a rating of your trust in this person from 1-10?

Can you explain why have you chosen this rating?

Could you give me a rating of your trust in the website as a whole from 1-10?



Can you explain why have you chosen this rating?

Great, now I'll show you the next version of the prototype.

[repeat until all prototypes have been seen]

Probe: "What do you think the star rating/verification paw print means?"

Thank you for doing that for me. I just have another couple of questions for you. Are you happy to carry on?

Interview (10 minutes)

So, this is the search results screen. If you clicked on a person it would take you to a full profile.

What would you expect to see on a profile to help you decide whether to trust this person with your dog?

Probe: “Why is this important to you?”

Probe: “How would you expect this information to be presented?”

Great, thank you for that. Just the last two questions now.

Have you ever had a negative experience with anyone that has looked after your dog?

If you were to have a negative experience, say with someone from this website, would you lost trust in:

The website The person Both Neither

Wonderful. That’s it for the questions then. Well that’s all my questions. Thanks so much for all your feedback, it’s been really useful!

Do you have anything you want to ask me or tell me before we finish?

[participant thanked for their time and given cake-based incentive]

8.10 Appendix I: Raw Session Data

	No cues			Star ratings			Star ratings & verification		
	Most trusted	Borrower rating	Site rating	Most trusted	Borrower rating	Site rating	Most trusted	Borrower rating	Site rating
2	Emily	2	3	Jack	7.5	8	Jack	6	8
3	Oliver	5	6	Jack	8	7	Sophia	8	7
4	Emily	3	2	Jack	5	4	Jack	6	4
5	Sophia	4	4	Jack	6	6	Sophia	7	8
6	Emily	5.5	5.5	Jack	7.5	7.5	Sophia	8.5	8.5
7	Oliver	1	1	Jack	2.5	2	Sophia	2.5	3
8	Oliver	1.5	1.5	Jack	5	4	Sophia	6.5	6
9	Emily	5.5	4	Jack	8	8	Sophia	8	9.5
10	Oliver	2	2	Jack	5	3	Sophia	5	3
11	Emily	2.5	2	Sophia	3	3	Sophia	3	3
12	Sophia	5	7	Jack	6	7	Sophia	6	7
13	Oliver	4	5	Jack	5	7	Sophia	7	7
14	Emily	3.5	4.5	Jack	6.5	7	Sophia	9	7
15	Sophia	6	5.5	Jack	6	5.5	Sophia	6	5.5
16	Emily	5	1.5	Jack	5	2	Sophia	7	3.5
17	Sophia	1	1	Jack	6	5	Sophia	5.5	5
18	Oliver	2	2	Jack	5	3	Sophia	5	3
19	Emily	5	0	Jack	5	0	Sophia	5	0
20	Sophia	6	4.5	Jack	6	6	Sophia	7	6.5
21	Oliver	5	5	Sophia	5	5	Sophia	5	5
22	Emily	3	2	Jack	5	3	Sophia	6	4.5
23	Sophia	4	6	Sophia	6	6	Sophia	7	6
24	Emily	5	4.5	Jack	7.5	8	Sophia	8.5	8.5
25	Oliver	2	3	Jack	4	4	Sophia	6.5	6
26	Emily	1	1.5	Jack	4	3.5	Sophia	5	5
27	Sophia	3	6	Jack	4	6	Sophia	5	7
28	Sophia	3	5	Jack	5	6	Sophia	6	7
29	Sophia	2	6	Jack	5	6	Jack	5	6
30	Sophia	4	1	Jack	6	5	Sophia	7	6

8.11 APPENDIX J: DISPOSITIONAL TRUST CALCULATIONS

Participant	Overall trust score	Benevolance	Integrity	Competence	Trusting stance	Trust level
2	44	8	12	11	13	L
3	49	12	11	11	15	H
4	47	12	12	8	15	H
5	51	12	12	12	15	H
6	39	12	6	8	13	L
7	50	12	12	12	14	H
8	43	11	11	9	12	L
9	51	12	12	12	15	H
10	47	10	12	12	13	H
11	46	13	11	10	12	L
12	48	12	11	10	15	H
13	46	12	11	11	12	L
14	40	7	12	9	12	L
15	40	10	10	10	10	L

16	47	7	10	15	15	H
17	38	8	9	12	9	L
18	46	11	11	12	12	L
19	47	13	12	11	11	H
20	46	12	12	9	13	L
21	48	12	12	12	12	H
22	49	13	12	12	12	H
23	46	11	11	9	15	L
24	50	11	12	12	15	H
25	53	12	13	15	13	H
26	41	7	11	12	11	L
27	40	10	8	11	11	L
28	42	13	7	12	10	L
29	48	12	12	10	14	H
30	47	13	12	10	12	H
Totals:	1329	320	319	319	371	16 H, 14 L
Mean	44.3	11	11	11	12	
Median	47	12	12	11	13	
Mode	47	12	12	12	15	
Standard Deviation	3.96	1.90	1.63	1.71	1.76	

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8.12 Appendix K: Example transcript for P18

What is it that you'd be looking for on a profile to help you decide whether you could trust that person?

A picture of them.

And why would that be important?

Well, two things. One, my dog does dislike certain people, and I can tell, you know, if they've got a weird walk or something.

And you can tell that from a picture?

I mean, I think. That's the second thing. I do really like to judge someone based on their picture. Just so I know what I'm getting into. If they're wearing something really weird like a big hat. My dog doesn't like hats.

Ok, why doesn't he like hats?

I think it hides the face. I'm being serious, my dog really doesn't like people with hats, or hoods. Or crutches, or wheelchairs, or... we're working on it.

Ok, so you'd be basing it on the requirements of Biscuit?

Yep.

And then the other part would be you judging?

Yep. So I'd be looking at the pictures to see who is nicer. Rather than someone that just took two hours to take that selfie.

Ok, so is there something that you'd be looking for in a photo?

Yeah, I would want a... the ideal photo would be very, you know, someone took it while they were outside and maybe there was a dog in it. So, not like a posed photo, unless they were posing with a dog.

Would it make a difference if they had a dog in the photo?

That would be a whole new thing to judge! What kind of dog do they have, is the dog wearing clothing? You know, there's a whole new face to look at. A whole new face to judge.

So what kind of things would come into that judgement?

Well, if they had a picture of them trying to train a German Shepherd, I'd say that the person wasn't for me because they're going to go all Caesar Milan on your dog, but if they had a picture of them holding a puppy, or going a hike with Jack Russell then yeah. I don't want someone to tell me that my dog is badly behaved. If you want to borrow my dog, then hang out with it. I would judge them and I would judge the dog. So, in the profile, going back to that there would be their name, a way to contact them and their picture. Um, it would be nice to see what other people said about them from the site.

Like in a review?

Yeah. And maybe something about what they usually do with the dog. Because that would actually be quite nice. Maybe they just want to take the dog to the cafe and just hang out with it. That's cool, not everyone has to go on a dog walk. Maybe they just want to cuddle with it while they watch TV. Maybe Sophia just broke up with her boyfriend and just wants to borrow a fucking dog, sit on the couch, and eat ice cream and watch, like, Marley and me.

Ok, so if you saw that on a profile is that something you'd be interested in? Would you be more interested in her because of it?

I would be interested in it. Yeah.

Would you trust her more because of it?

Well, I would trust people more if they gave an indication of what they wanted to do and why they wanted to borrow my dog. I mean why don't you get your own dog? Maybe their dog just died, you should say that - I'd totally trust them more. Not... they didn't kill them, but just because they had a dog and you lost your dog and yeah, hang out with mine.

Ok, so why would that make you trust them more?

Because I feel like I could fit into their mental state. Dog recently dies, you miss your dog, you're really sad, but you don't really want to get another one, yet or ever. So maybe you just want that comfort sometimes. Yeah, I, people who's mindsets I can understand, I would trust them more.

Ok, so is there anything else you'd be looking for in a profile? You can think of it as what kind of questions would you like answered or what questions would you be thinking about?

I do want to know what they're going to do, and, maybe what their favourite dogs are. Again, I have a Jack Russell. Not the greatest breed for everyone, but people that have Jack Russell's, they get it. So if someone likes Schitzu's then you're not the one for me, bit if they like crazy Terriers then yeah, let's do that. It would be great to have their favourite dogs. I'd also like to see pictures of them with someone else's dog. Although I don't know how they would do that.

Would it matter how old the picture was? Say, if they had a dog when they were growing up?

Hmmmm... I think there'd need to be an explanation. It doesn't really matter but there'd need to be something saying "this was my dog when I was young" then, yeah. Or if someone is trying to convince their girlfriend to get a dog and she doesn't think they're responsible enough and came to me and said "I want to borrow your dog so I can prove to my girlfriend that I'm responsible" - yes! And a picture of your dog growing up - yes!

And why would that make you trust them more?

It makes me see them more as a person. The more that I can see about someone before I speak to them, the more I can avoid the awkward situation of "never mind", when you meet them. So I would rather be 100% convinced before I meet them that they're the right person for me. So the more information I have, the better.

So is there anything else you'd like to see in a profile?

I just want someone that says they're going to post pictures. I want more pictures. I want them to have pictures of where they take the dogs. And not just pictures, maybe a map. That would be nice.

How do you think they could incorporate pictures of Biscuit?

Well on their little page, if they liked Instagram, they could take a picture while they were out and it would get folded into their profile and I could be happy that there is a picture of Biscuit online and on Instagram and I could just download it. But it's also out there for everyone else to look at to see how handsome he is. Because that dog is not just for me, he's for the whole world.

[This person had previously said that they loved the doggy day care service she sent he dog to a few times because of the hundreds of photos they uploaded every day. She could see that he was having a nice time and having fun]