

Why Do People Contribute Opinions Online?

Understanding People's Review and Rating Behaviour Using a Mixed Methods Approach

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ABSTRACT

Online consumer reviews are important for people wishing to make purchases online. However, not everyone contributes online reviews. This paper looks at consumer individual differences, motivations and reviewing and rating behaviour in order to suggest ways designers could encourage participation. An interview study found that people who contribute online reviews and ratings are motivated by a desire to help other consumers, and are less likely to contribute where they do not perceive value to others. A follow up questionnaire study confirmed that altruism (the desire to help others) was a predictor of *whether* people had reviewed products before, but that people's attitudes to reviewing and perceived social norms around reviewing are stronger predictors of how *often* they review, and whether and how often they rate. Implications for the design of online reviewing and rating systems are discussed.

Author Keywords

Online reviews, online feedback systems, online review behaviour, online rating behaviour, individual differences, theory of planned behaviour

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

It is now commonplace to search out consumer reviews and opinions online before making purchasing choices. E-word of mouth (e-WOM) between users through blogs, discussion forums, bulletin boards, social media (e.g. Facebook and Twitter), independent online review sites (e.g. Trip Advisor, Yelp) or e-retailer's own feedback platforms (e.g. Amazon's and Ebay's reviewing and star

rating functionality), has a strong impact on customers, their purchasing decisions and purchasing intentions [5,26]. Research has shown that an extra half star rating for a restaurant on Yelp has the potential to increase sell-outs by 19% [2]. A survey in 2015 of US and Canadian consumers shows that 35% of the respondents regularly read online customer reviews to determine how good a local business is and that a star rating is the major factor that consumers use when judging a business [3]. Reviews are also a valuable source of feedback to companies about the quality and areas of improvement for their products and services [8]. However, despite the benefits to consumers and businesses, some customers are not always willing to contribute written posts or ratings, preferring to stay inactive by only consulting others' reviews, similar to the *lurking* behaviour seen in online content contribution [30].

A significant amount of work has been conducted in the fields of marketing and information systems focusing on the effects of reviews on sales, purchasing decisions and purchasing intentions (see [12,20,32]). However there is still limited understanding about what motivates those who engage in supplying such information, and the individual differences that drive contributions [7]. Furthermore, previous research does not draw a clear distinction between reviewing and rating behaviours nor explore whether individual differences and motivations affect our review and rating behaviours differently. Within HCI, understanding the reasons for people engaging in these different types of feedback will help in designing feedback systems to encourage more of us to contribute.

Therefore, in this paper we investigate more fully why some people do and do not contribute reviews and ratings so as to suggest ways to design to encourage people to review and rate more. We also explore the role of individual differences (e.g. altruism, perceptions of social norms on reviewing, attitudes towards reviewing and perceived abilities to review) in predicting reviewing and rating behaviour. In contrast to previous work, we draw a distinction between rating and reviewing as the latter takes considerably more time which is likely to affect people's willingness to engage. To do this we take a mixed methods approach. Firstly an interview study (*Study 1*) was conducted to understand the motivators and barriers to online rating and reviewing. The findings from this in

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combination with previous literature informed the design of an online questionnaire (*Study 2*) which looked at people's levels of altruism, their attitude towards reviewing, perceptions of reviewing as a social norm and their perceived ability to conduct written reviews, and whether these predicted people's reviewing and rating behaviours. The findings from this work allow us to make informed design suggestions for encouraging online reviewing and rating behaviours.

RELATED RESEARCH

E-WOM and Online Feedback Systems

Much of the online review literature is encapsulated in research on E-Word of Mouth (E-WOM) communication. E-WOM is defined as *"any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet"*. E-WOM uses a range of media to communicate user opinion. Users can use text, ratings, videos and photos to communicate their views about a product or service. It is more asynchronous compared to traditional word of mouth methods [18] with reviews being archived and accessible at any time [25]. Due to its online nature e-WOM content has the ability to reach a wide audience in comparison to more traditional word of mouth. E-WOM research covers a wide variety of tools and digital information sharing platforms like blogs, newsgroups, discussion forums and social media [19]. The work presented here focuses on online review and rating platforms as they are commonly used to share opinions about products and services.

Motivators for Review Contribution

Although there is a dearth of literature on what leads people to engage in online review contribution compared to its role in online sales [7] some studies have explored the reasons people make contributions to opinion based platforms. However, to the best of our knowledge, these studies all focus on *online reviewing*, without differentiating between rating and written reviews. The work mainly focuses on contributor altruism, social interaction benefits, reciprocity and moral obligations to the community [36] as the reasons for contribution. For example, research testing a sample of over 2000 German consumers found that people contributed written content to e-opinion platforms because of social interaction from contribution and a concern for other consumers [16]. Also, the amount that people feel that their review would be helpful is a strong predictor of reviewing intentions. A study focusing on the motivators for positive feedback on Hong Kong's OpenRice.com found that reputation benefits, a sense of belonging to the community and an enjoyment in helping others were significantly related to peoples' intention to share their dining experience on the website [7]. Similar findings have been noted in the observation of reasons for contributing content in e-knowledge repositories and online communities, with enjoyment of helping others [17] feeling a strong sense of

belonging to the community and that the information being contributed is useful have a strong positive relationship with contribution intention [27]. Studies have also emphasized the role of enjoyment of helping other customers and helping the organisation in this activity [35] with people having a stronger intention to review if it would influence the seller of a product [34]. Enjoyment in helping the company is also a stronger motivator when the number of existing reviews is large [35], although others have found that people contributed more when they felt they had a unique contribution to make [21]. Influencing the company has both a positive and negative dimension, with vengeance after a negative consumer experience being a strong behavioural motive for contribution, although others debate the role of negative feelings and helping the company in reviewing frequency [16]. A recent study using the theory of planned behaviour and the big five personality traits to explain people's intentions to review showed that people's attitude towards reviewing are important in predicting people's intentions to review. It found that people with a more positive attitude towards online reviewing, who were higher in Neuroticism and Conscientiousness and who perceived a pressure to review had higher intentions to contribute reviews in the future [29].

Other more individualistic motivations such as economic incentives also affect online opinion contribution [36]. The role of reviewing in increasing the contributor's self worth and ego [16,36] is also important. Reputation enhancement with other consumers or in the community [34,35] play a significant role in encouraging online reviewing and in online content contribution more generally [27], but only when the number of existing reviews contributed to a product were low [35].

More qualitative based data looking at norms and practices of reviewers [31] supports many of the reasons for reviewing identified above. Reviewer's described a desire to share positive and negative experiences with other consumers and to contribute to community knowledge. They are also aware of the role that reviews have in community reputation, using them to bolster or detract from someone's online reputation. Although previous work highlights a mixed role for economic incentives as a motivator, reviewers did state that these types of incentives did motivate them to contribute [31]. The research also shows that positive reviews are more frequently contributed than negative reviews [31].

Reasons Not to Contribute

Little of the current literature focuses on the costs and barriers of reviewing and indeed why people do not contribute reviews and ratings. What has been conducted shows that perceived costs of executing the review (in terms of time and cognitive costs in forming and writing the review) has a significant negative relationship with people's intentions to contribute [34].

Although not directly researching online review contribution, previous work on lurking is highly relevant. The general perception of a lurker is an individual that is active in reading content and may have something to add but chooses not to, sometimes referred to as an *invisible participant* [14]. Studies looking at reasons for lurking in online communities [30] show that lurkers lurk for a variety of reasons, most notably because their existing needs are already satisfied by viewing rather than contributing and that they are still exploring the group before contributing. Interestingly, lurkers also see their lack of contribution as having an altruistic motive [23,30] in that they were being helpful to the community by not contributing as they have nothing further to add or other people have already made a similar contribution [30]. Other reasons such as not seeing the need to contribute, being concerned of security, being afraid of negative feedback from others, as well as poor system interaction are also mentioned as reasons for not contributing [23,30]. We would expect that some of these reasons would also be seen in reasons for not contributing reviews and ratings.

THE PRESENT STUDY

Therefore, whilst there is a good understanding of how online reviewing impacts sales (see [12] for a recent meta-analysis and review) and the role of reviews in supporting decision making between product alternatives [20], there is comparatively limited understanding of what leads people to review in the first place [9,29]. Crucially, little is understood as to why people do not review, with previous work tending to treat reviewers and non reviewers as one sample [29]. Much of the research on eWOM also does not clearly differentiate between ways of contributing opinions through reviews and ratings. We take the view that these behaviours need to be distinguished due to fundamental differences in the efforts and aspects needed to conduct each. For instance, a written review involves a high investment of executional and cognitive effort (remembering the experiences, assessing features, making critical judgments, completing relevant fields in feedback forms and writing and correcting text). A rating on the other hand is relatively low effort in terms of executional and cognitive costs, usually involving selecting a value on a scale, remembering the experience and making an evaluative judgment. A more effortful behaviour such as a review may be more related to altruistic motivations than the supplying of a rating.

The work uses a mixed methods approach to firstly understand, using semi-structured interviews and a qualitative approach, the motivators for reviewing and rating, the barriers and motives for people not reviewing and not rating and the differences between people who review and do not review (Study 1). Based on findings from Study 1 and the literature, Study 2 looks to explore quantitatively whether variables such as people's attitude towards reviewing, perceived behavioural control and perceived social norms together with measures of altruism

predict our engagement in and frequency of reviewing and rating.

STUDY I: QUALITATIVE STUDY

The goal of *Study I* was to develop a preliminary understanding of what motivates or discourages consumers from contributing online written reviews and ratings, and to get a sense of which, if any, individual differences may play a role in that.

Participants

11 participants (7 Male, 4 Female), ranging in age from 23-44 and who were experienced online customers, took part in this research. Participants were recruited via email from a UK university and given a £5 Amazon voucher for taking part.

Procedure

Semi-structured interviews were run to investigate participants' online rating and reviewing behaviours, the motivators and barriers to these behaviours, as well as how they used the reviews and ratings of others when buying products themselves. Each interview session lasted between 15 and 25 minutes.

Data Analysis

Interviews were transcribed and codes generated for key themes that emerged from the data around the topics of interest for this research, including review/rating use in making purchasing decisions, motivations for reviewing and rating, and the barriers to reviewing and rating. Participants were classified according to their online reviewing and rating behaviours (see Table 1) and transcripts interrogated for patterns of behaviours across and within groups.

FINDINGS

We found that reviewing and rating behaviours varied considerably across participants, with 4 reporting that they reviewed and rated most products they bought online, 1 reviewed and rated around half of the products they bought, 3 reporting that when they did leave feedback, they usually only left a star or other rating for products but no written review, and 3 saying they almost never left either ratings or written reviews.

Use of ratings and reviews when making online purchases

All but one participant (K) reported using the online ratings and reviews of others to some extent when making purchasing decisions. The ways in which these helped participants was similar across groups. All participants mentioned they could be useful to find out more details about the product: its pros and cons, reliability etc.; specific features to look for in this type of product, and the specific features a particular product has; to compare and contrast products, and decide between them; and to get a sense of other's opinions/the consensus view and experience of using a particular product over time. Five of the participants from across the groups (A, B, E, J and K) also mentioned that reviews and ratings were useful to find out about the

seller: to choose one (especially to give you confidence in using a lesser-known seller), or to be aware of any customer service issues others have encountered.

Group	Reviewing behaviour	Participants	Read Reviews?
Rv+Ra	Rate and Review, for most purchases	Participant A (M, 27) Participant B (M, 28) Participant C (F, 28) Participant D (F, 44)	All Rv+Ra said yes – find them very useful
	Rate and Review, 50% of time	Participant E (M, 29)	
RaOnly	Usually Rate only, sometimes	Participant F (M, 28) Participant G (M, 26)	Sometimes Yes
	Only Rate, sometimes	Participant H (F, 31)	Yes
NoRvorRa	Don't Review or Rate	Participant I (M, 23) Participant J (M, 29) Participant K (F, 38)	Yes Sometimes Occasionally

Table 1. Categorization of interview participants

However participants did differ in how valuable they reported finding other's reviews. Participants in the Rv+Ra group, who regularly leave written reviews, tended to express that they highly valued the ratings and reviews of others, e.g. Participant B:

"I think it's very useful, because it gives you an idea of what to expect of a product, especially if you're not sure if you really need that"

Whereas participants in the groups that rarely leave written reviews varied as to how useful they found them. For example, Participant F when asked if online reviews are useful replied:

"I think it will not be harmful, so yes maybe useful or zero effect, but it will not be harmful".

Some participants suggested that reviews were not helpful for buying certain products (e.g TV box sets, films or books) as you would already have made your mind up about buying those things before coming to a site to

purchase them, or that there are other more useful places to find out information about these things. Participant C discussed how different people could have a completely different perspective on how good a book was (e.g. a literature student's appreciation of Joyce's 'Ulysses' vs. someone wanting a good holiday read) that could not be captured by a rating scale. The three participants that never rate or review all talked about wanting to make their own minds up, trusting their own opinions more, or already knowing what they want when they come to buy, e.g. Participant J said:

"It depends what it is, with films and things like that I kind of know if I want it or not. I will read them, but it doesn't influence my opinion on whether I buy them or not"

Two of them (J and K) talked in terms of distrusting review/rating systems, either because they compounded too many things to be valuable, because other people's views might not be the same as their own, e.g. Participant K:

"It doesn't reflect the quality of the product. If I read a book and you read a book and we both give it 4 stars it doesn't necessarily mean we both have the same feeling about it at all."

Some mentioned that they distrusted the reviews and ratings because they weren't confident that the contributions were actually genuine and not generated by the sellers/e-commerce site themselves.

Motivations for rating and reviewing

Participants were asked to think about what motivated them to leave a rating or review. The biggest reason participants reported for leaving reviews was to help other consumers, and to share their experiences with them. A few participants implied they did it to help sellers too, though this was not as explicitly mentioned. Participant A expressed this most clearly when asked why he reviewed products:

"Because it's definitely going to help somebody... everybody working together to help any other person who is going to buy or to sell to make a better informed decision"

Those who reported only rating/reviewing sometimes suggested they were more likely to rate (and review) when they had either had a very good experience or a very bad one. Three participants (C, D and E), all from the Rv+Ra group, explicitly talked about wanting to review or rate as they had benefited from other people's in the past, e.g. Participant C:

"I feel that, for rating, I feel that I have to give a rating because it's such an easy thing to do, and I personally benefited from the rating and from the review"

Only one participant (Participant K from the NoRvorRa group) talked about being motivated directly by self-gain to leave a review: i.e. in the hope of getting a response from the seller/money back when they'd had a negative experience.

We did not ask people specifically if they would be motivated to review if offered a reward, but this was raised by a number of participants. Participants E (Rv+Ra 50% of the time), F, G(RaOnly) and K(noRvorRa) all indicated that they would be more inclined to review (or had in the past) when offered some kind of small monetary reward (either cash, money off voucher or reward points). None of the participants who suggested they always rated and reviewed raised the idea of a reward as motivation, and participant J who never rated or reviewed indicated that money incentives would not change his mind. Emails asking them to rate/review products recently bought online were generally seen by participants as useful reminders rather than motivators to review, with none feeling they changed their minds about whether or not they were going to do it.

Barriers to rating and reviewing

Participants who indicated that they almost always rated and reviewed suggested the only times they wouldn't would be when they did not use the product themselves (i.e. it was bought for someone else), or had not yet used it long enough when prompted to review. They mentioned sometimes forgetting. However, they did indicate that the level of detail they put into the written review changed depending on other factors similar to the barriers mentioned by other participants. Time was mentioned by all other participants as being a barrier to leaving ratings and reviews, and as a reason for leaving only quick reviews by some of those who usually do review. For example, participants mentioned being too busy at the point where they are asked to rate/review so ignoring or postponing and forgetting to do so. Participant F talked about how off-putting it was not knowing how much longer a review was going to take him, and participant C discussed how she was put off leaving reviews for books because she had in the past ended spending up to 4 hours writing a review.

However the time participants are willing to spend rating or reviewing seems to be related to the perceived value of this rating or reviewing to others. Participants who only sometimes rate or review, and even those that usually do, describe how they are less likely to leave detailed feedback when there are already sufficient reviews on the site, they don't have any specific new points to add, or their experience was neither very good nor very bad, e.g. Participant G said:

"If I've got a specific point or I want to fight a review left by another person I would leave a review, otherwise I would just leave a rating and leave the review blank because otherwise I won't be contributing a lot."

Of those that reviewed at all, only participant B suggested that these things would not affect the level of detail of their review as he believed it was about numbers: the more reviews, the more credibility. Participant H only ever rated and never reviewed because she was worried about personal data security:

"It's quicker just to do the star system, and I always worry about repercussion, about whether they can track you and personal data being exposed or anything like that. So I'm just a bit extra careful".

Three participants never rated or reviewed. One of them (participant I) said this was simply because they had never thought to do it. The other two (J and K) expressed more extremely than people who sometimes rated/reviewed that they did not see the point, that they did not feel that their reviews would sway people at all or that other people would care about their opinion. For example, when asked why she doesn't review, Participant K replied:

"I suppose it takes a long time [...] and I think 'why would anyone care what my opinion is?'".

DISCUSSION

Similar to the findings of previous research [7,27], our participants suggested that the main motivation they had for leaving reviews and/or ratings was to help others, usually other consumers, and to share their experiences with them. Additionally we found that one of the main reasons people gave for *not* leaving a review or rating was that they did not expect their contribution to be helpful to others. Taken together these findings suggest that people who particularly like helping others (i.e. those with high altruistic tendencies) might be more likely to leave ratings and reviews than others.

A Cost-Benefit Analysis?

In addition, our findings seem to suggest that when making the decision about reviewing or rating, people essentially assess the trade-offs between the costs and the benefits. We found that people chose whether and when to leave ratings and/or reviews depending on how much time and effort they thought it would take, and how useful they perceived they would be to others. This strengthens the claims of previous research that found that time and cognitive cost of reviewing had a negative relationship with people's intentions to review [35]. Because of this, we would argue that it is important that reviews and ratings should be considered as distinct behaviours, as reviewing represents much more cost to the reviewer in terms both of time and effort than leaving a rating. This distinction was expressed by our participants. However it should be noted that these two behaviours are not independent: we were able to organize our participants on a continuum between the two extremes of always reviewing and rating and never reviewing nor rating.

Furthermore the main difference we observed between groups of participants, organized in terms of how often they review or rate, was their perception of how useful online reviews and ratings were to them when making their own purchasing decisions. People who found them more useful (and therefore of more benefit) seemed to be more likely to review and rate more often. This provides a strong indication that attitudes to online reviewing and people's

perceptions of the usefulness of online reviews to themselves and others may well play a role in predicting actual reviewing and rating behaviour.

Our findings could also help explain the mixed reports of economic incentives to reviewing, as it was those of our participants who chose whether or not to review or rate on a case-by-case basis, depending on the cost/usefulness to other ratio, that seemed to suggest that such incentives had and would motivate them to review. Therefore, perhaps it is only when participants feel that the effort to review is not quite worth it that a personal benefit might be enough to motivate. Whereas those that never review seem to consider the effort too much and a small economic incentive is not enough to change their mind – especially if there is nervousness about personal data security or the authenticity of the review/rating data presented to consumers.

STUDY II: QUANTITATIVE STUDY

To compliment Study 1, our second study took a quantitative look at some of the variables that were suggested to be strong motivators for online review and rating postings. Through the results of Study 1, and previous literature, we see that altruism is a strong driver of reviewing and rating. This study looks to identify, in more detail and through quantitative means, the role that people's level of altruistic tendency plays in predicting whether people have reviewed previously or not as well as people's frequency of reviewing. Importantly we also analyse whether people's level of altruism impacts their rating behaviour and frequency of rating separately.

Inspired by the findings of Study 1 and based on previous work [29], we also look at the role that people's attitude towards reviewing, the social norms they perceive around reviewing as well as their perceived abilities to review, have in predicting their opinion contribution behaviours, along with altruism. These have not been looked at together previously. Rather than looking to understand reviewing behaviour through focusing on people's future intentions to review (as in previous work) we look to see whether these factors actually predict people's reviewing behaviours. To study the factors mentioned we use measures from the Theory of Planned Behaviour [1], a popular psychological theory used to understand behaviours. It has been used as a theoretical framework to investigate a number of technology based behaviours such as information technology use in general [15,22] as well as being extensively used in the psychological literature to investigate health and energy behaviours (e.g. [10,11]. As defined by Ajzen [1], the main components of the theory when explaining people's intentions to conduct a behaviour are their attitude towards that behaviour, someone's perceived social pressure/norm to perform a behaviour (subjective norm) and the perception of their ability to perform the behaviour (perceived behavioural control).

Hypotheses

We hypothesise that altruism will be a significant predictor of whether people have reviewed products and/or services before. We also expect that people's level of altruism will significantly predict their frequency of online reviewing. Based on Study 1 and previous research, we hypothesise that attitude towards providing online written reviews will be a significant predictor of whether people have reviewed previously or not as well as their frequency of reviewing. However, based on previous work [29], we do not expect subjective norm and perceived behavioural control to have a statistically significant role in predicting whether people have reviewed or not. We also do not expect these to predict people's reviewing frequency.

Based on the findings of Study 1 as well as extrapolating from the literature on online reviews we would expect that altruism will have a significant relationship with whether people rate products and services as well as the frequency with which they rate products and services. Because of the link between online reviewing and rating, we also look to explore whether people's attitude towards reviewing, the perceived subjective norms and their perceived behavioural control predict whether people rate or not and how frequently they rate products and services.

METHOD

In order to investigate quantitatively the predictors of online reviewing and rating behaviour, we conducted an online questionnaire. A link to the questionnaire was distributed via email and by posting on an online portal at a UK university.

Participants

103 participants (48 male and 55 female) from a UK university community ranging from 18 to 61 years old ($M_{age}=29.7$, $SD_{age}=10.14$) completed the questionnaire. The sample included participants from a wide range of academic subject areas and came from a wide range of professions with majority of the respondents being students ($N=64$; 62.1%). All participants had previously purchased a product or service online. 41.8% ($N=43$) of those were very experienced in purchasing products online having been purchasing products and services online for more than 6 years. Participants were not given an honorarium for participation.

Questionnaire

Demographics

The questionnaire gathered information about the respondent such as age, gender, profession, whether they purchased products and services online, how often they purchased products and services online (7 point Likert scale; Very Infrequently to Very Frequently), for how long they have been purchasing products and services online (less than a year; 1-3 years; 4-6 years; more than 6 years).

Frequency of Reviewing and Rating

Participants were asked if they had previously given an online rating for products and/or services that they had experienced (Yes/No- used to identify people who rate and people who do not rate products). Those that answered Yes were then asked to rate how often they rated the products and services that they had experienced (7 point likert scale; Very Infrequently to Very Frequently). All participants were also asked whether they had previously contributed an online written review for products and/or services that they had experienced (Yes/No- used to identify reviewers and non reviewers). As with ratings, those that answered Yes were asked how often they contributed online reviews (Very Infrequently to Very Frequently- 7 point likert scale).

Altruism

The 20-item Self-Report Altruism Scale [28] was used to measure people's propensity to act altruistically. The internal consistency of the altruism scale has been found to be high in previous research ($\alpha=.89$) [28]. Participants used a 5-point Likert scale to answer how often they performed each of the 20 altruistic actions described in the questionnaire (1 = never, more than once, 5 = very often).

Attitude, Subjective Norms & Perceived Behavioural Control

The items used in these scales were based on those used in Picazo-Vela et al. [29]. The measures of perceived behavioural control ($\alpha=.87$) and attitude ($\alpha=.90$) used within that study have high internal reliability, with the scale of subjectivity norm showing lower levels of reliability ($\alpha=.45$). Although this was the case, it was felt best to use the same scales so as to more fully compare the results across the studies. The *attitude* scale included four items asking participants to rate their attitude towards providing online written reviews. The *subjective norm* scale included two items that focused on measuring the level to which people feel that providing online written reviews is a norm within people that they deem important to them. The *perceived behavioural control* measure included 6 items that measures people's perceived difficulty or ease of providing an online written review. All used 7 point scales. Example wording and scales used for the items can be found in [29].

RESULTS

Questionnaire Reliability

For our sample, the Self Reported Altruism Scale ($\alpha=.89$), Attitude ($\alpha=.86$) and Perceived Behavioural Control ($\alpha=.68$) scales were found to have a good internal reliability. The Subjective Norm scale was shown to have weak internal reliability ($\alpha=.56$) although the measure reached higher reliability than in previous research [29].

Rating and Reviewing

80 participants reported that they had previously rated products/services online with 23 stating that they had not rated products/services. 58 participants had identified that they had previously reviewed products/services online with 45 stating that they had not. Of the sample, 57 participants

(55.3%) reported that they rated and reviewed products/services online, 23 (22.3%) stated that they rated and had not reviewed, 22 participants (21.4%) reported that they had not rated or reviewed products/services online, and 1 participant had reported that they had not rated but had reviewed products/services online.

Logistic regression was used to determine the effect of altruism, attitude, subjective norms and perceived behavioural control on predicting the likelihood of people having reviewed previously. VIF and tolerance statistics for all regression models were run and suggested that there are no issues of multicollinearity. Assumption of linearity of the logit in all logistic regression models was met ($p>.05$). The results of the analysis are shown in Table 2.

Predictor	β (SE)	z value	Odds ratio	p
Intercept	-5.49 (1.88)	-2.91	.004	.00
Altruism	0.04 (0.02)	2.23	1.04	.03
Attitude	0.27 (0.22)	1.21	1.31	.23
Subjective Norms	0.03 (0.15)	0.21	1.03	.83
Perceived Behavioural Control	0.33 (0.20)	1.62	1.39	.10

$R^2 = .08$ (Hosmer-Lemeshow); .11 (Cox-Snell); .14 (Nagelkerke);
Model $\chi^2(4) = 11.50$, $p = .02$

Table 2. Logistic Regression predicting the likelihood of having previously written a review

From the analysis presented in Table 2 it is clear that altruism is the only statistically significant predictor of the probability of people having reviewed previously ($z = 2.23$, $p = .03$).

Multiple regression was performed to identify the role of altruism, attitude towards reviewing, subjective norms and perceived behavioural control on the frequency that reviewers in the sample post written reviews ($N = 58$; 56.3%).

Predictor	Standardized β	p
Intercept		.03
Altruism	.22	.07
Attitude	.24	.05
Subjective Norms	.29	.02
Perceived Behavioural Control	.11	.35

$R^2 = 0.28$; Adj. $R^2 = 0.23$; Model $F(4, 53) = 5.23$, $p = .001$

Table 3. Multiple regression for online review frequency

The results in Table 3 show that subjective norms to reviewing ($\beta=.29$, $t=2.32$, $p=.02$) and attitude ($\beta=.24$, $t=2.01$, $p=.05$) were statistically significant predictors to the frequency of reviewers contributing reviews. Surprisingly, altruism was not a significant predictor of review contribution frequency ($\beta=.22$, $t=1.82$, $p=.07$).

Rating Data

Logistic regression was again conducted to identify whether altruism, attitudes towards written reviews, subjective norms and perceived behaviour control were statistically significant predictors of the likelihood of people being raters or not. The results of the analysis are shown in Table 4.

Predictor	β (SE)	z value	Odds ratio	p
Intercept	-6.18 (2.27)	-2.72	0.002	.006
Altruism	0.02 (0.02)	1.11	1.02	.27
Attitude	0.70 (0.28)	2.52	2.01	.01
Subjective Norms	-0.12 (0.19)	-0.62	0.89	.53
Perceived Behavioural Control	0.46 (0.24)	1.97	1.59	.049

$R^2 = .13$ (Hosmer-Lemeshow); $.13$ (Cox-Snell); $.16$ (Nagelkerke); Model $\chi^2(4) = 14.31$, $p = .006$

Table 4. Logistic Regression for likelihood of having previously rated products or services

Altruism was not a significant predictor of whether people were raters ($z=1.11$, $p>.05$). However, people's attitude towards written reviews ($z=2.52$, $p=.01$) and perceived behavioural control of conducting written reviews ($z=1.59$, $p=.049$) did significantly predict the likelihood of people being raters.

Multiple regression was also conducted to identify whether altruism, attitude towards writing reviews, subjective norms and perceived behavioural control predicted frequency of rating in those that stated that they rated products and/or services ($N=80$; 77% of the sample).

Predictor	Standardized β	p
Intercept		.16
Altruism	.15	.16
Attitude	.13	.29
Subjective Norms	.23	.04
Perceived Behavioural Control	.17	.14

$R^2 = .17$; Adj. $R^2 = .12$; Model $F(4,75) = 3.72$, $p = .008$

Table 5. Multiple regression for online rating frequency

The results of the multiple regression model in Table 5 show that altruism does not significantly predict people's frequency of online rating ($\beta=.15$, $t=1.43$, $p=.16$). Yet, subjective norm towards online written reviewing did significantly predict rating frequency ($\beta=.23$, $t=2.06$, $p=.04$).

GENERAL DISCUSSION

The work presented aimed to take a mixed methods approach to investigating the motivators and barriers to online reviewing and online rating and how individual differences relate to these two activities.

Study 1 found that the main reasons people give for leaving online ratings and reviews is to help others. It also found that people do perceive a difference in terms of cost in time and effort between leaving online reviews vs. online ratings. This is important as our results suggest participants in part make the decision about whether to leave feedback depending on whether they perceive the benefit of doing so is worth this cost.

Study 2 found that, as predicted from Study 1, people's level of altruism had a significant role in predicting whether they were reviewers or not. Interestingly altruism had no significant effect on predicting the frequency of reviews people had made. What played a more significant role was people's attitudes towards reviewing and what they perceived people important to them thought about giving written online reviews. There was also no significant role for altruism in predicting whether people rated products and services they had experienced or the frequency of that rating, however people's attitudes towards online written reviewing and the perceived ease or difficulty of being able to write an online review significantly predicted whether people had rated previously or not. What is more, what people thought others close to them thought about reviewing (i.e. subjective norms) significantly predicted the frequency of ratings.

The findings that altruism plays a role in whether people have reviewed or not highlights a more nuanced view to the role of altruism in review contribution than seen in previous research. Previous studies have reported that altruism and concern for others acts as a crucial motivator in affecting customer's intention for online reviewing [7,16].

However we have found that people's level of altruism is only related to whether they had written reviews previously or not, not their frequency of reviewing. What is more we found that, contrary to a previous study that only found a role for attitude out of the variables measured on reviewing intentions [29], attitudes and subjective norms have a positive relationship with people's level of reviewing. The discrepancy in findings could be linked to the varying behavioural measures used across these studies. Much of the literature on online reviewing measures people's intentions to write a review, rather than asking people to report their previous level of reviewing or rating. Intentions are seen to vary strongly in their ability to predict behaviour

[13]. In fact, measurement of previous behaviour is a much better predictor of future behaviour than intention measurement [24,33]. This may explain the variance in findings across ours and other research. Also, unlike [29] whose sample includes both people who have reviewed and have not reviewed before, we only analyse those that have reported that they have reviewed in the past. We feel that by concentrating on this subsample, we get a clearer insight into how the variables of interest influence review frequency by removing any potential impact that including non-reviewers may have on the findings. Our focus on past behaviour also gives this research more validity when compared to studies based on intention alone.

The significance of variables related to written reviews such as peoples' attitudes towards written review contribution and subjective norms in predicting aspects about online rating shows how, although these can be seen as different behaviours, they are in effect related. People's views towards written reviewing do relate to whether we rate and how many times we rate products and services. It supports the idea that, although distinct, these behaviours lie on a continuum of opinion contribution. Indeed many who conduct reviews will also contribute ratings when writing the review for a product.

Design Recommendations

Based on our findings, we suggest a number of approaches designers could use to both increase the motivation and remove the barriers of contribution of online reviews and ratings.

Reduce the Cost of Review Writing

The results of Study1 suggest that people may leave more ratings and reviews if this could be made quicker and easier to do. Direct links from reminder emails to review postings already help achieve that, as does offering a selection of pre-written statements that allow the user to select the ones that are relevant to their view. However this could be extended to allow users to endorse or disagree with statements of other reviewers (in contrast to voting whether a review was 'useful' or not) and doing so could encourage them to make a small contribution even when they feel there is nothing new to add. Our findings, as well as research on how social psychological theory can be used to increase online message contribution and ratings on an online movie site [21], suggested that people contributed more when they felt they had a unique contribution to make. Therefore this approach could simultaneously increase the value of reviews to other consumers as well as encouraging people to get into the habit of leaving reviews as they can feel they are always making a helpful contribution.

Highlight the benefit to the community

The role of attitudes in reviewing also suggests that requests that play to someone's positive attitude about contributing written reviews may lead them to contribute reviews more frequently. Therefore in addition to

techniques above, the site and the reminders sent could highlight the *value to the community* or the benefit of supplying written reviews, perhaps targeting reminders particularly when their contribution would be most worthwhile (e.g. for products or services that lack reviews). This may be especially important to encourage the reviewing behaviour of people who do not feel that others' reviews are always helpful.

Improve the usefulness of online reviews to consumers

Interestingly, our finding that people who do not consider reviews and ratings to be particularly helpful to themselves when purchasing are less likely to leave reviews, suggests that any work done to improve the usefulness (and trustworthiness) of online reviews to consumers could in turn lead to those consumers being more inclined to contribute.

Highlight reviewing norms in people's social networks

Our findings suggest that fostering a strong social dimension in review sites and systems may increase the frequency of reviewing and rating in those already contributing. An example of this is used by TripAdvisor, where, if logged in through Facebook, a user can see which of their Facebook friends have contributed to the site. Based on our findings, the strategy of highlighting what others in people's social group are contributing would increase the frequency of reviews from those already reviewing as that would act as a signal of someone's social group being positive about contributing online reviews. Who is contributing from their social network, with a focus on those that are important to them in their network (e.g. family, close friends) could also be incorporated into existing requests made by companies (e.g. Amazon and Airbnb email requests) to review recent experiences and purchases. This may amplify the social norm of reviewing for the user and encourage them to contribute more reviews and ratings. Utilizing people's existing social networks could also be an approach to 'highlight the benefit to the community' of leaving reviews by providing information on when their reviews have benefited members of their own social network.

Target new reviewers with high altruism levels and encourage them to review

We also recommend the measurement of altruistic tendency when people sign up to online sites where people can leave reviews. Taking measurement of someone's altruism when registering for a site and whether they had reviewed before on another sites (to target those high in altruism that haven't reviewed before) would allow sites to target review requests to new reviewers most likely to contribute. Again these reviewers could be targeted to supply reviews for products and services that they have bought which have low numbers of reviews. This may also avoid creating an even more negative attitude to reviewing of those unlikely to contribute by targeting review requests to those that are most likely to respond.

Suggestions for Future Work

This work presents an insight into the barriers and motivators of online reviewing. However, the sample size is relatively small, and future work should look to replicate this work with a larger sample of participants to endorse our findings and increase their generalizability. Future work could also focus on a more extreme sample of *super-reviewers* (i.e. those that review very frequently) to see what can be learned from their experiences.

Previous work has identified that self-reported behaviour is less desirable than measurement of actual behaviour in research using TPB variables [4] because of aspects like social desirability. However, TPB variables have been shown to account for large amounts of variance in both observed and self-reported measures [4]. In this study we used self-reported behaviour as we were looking at online reviewing and rating in general, rather than on a specific site and it was impractical to gather all objective data about people's level of contribution across multiple platforms. Future work should try to look at people's actual review behaviour to validate the findings presented.

We also feel that future work should look at what influences people to write positive and negative reviews, as well as what affects the length of reviews given by reviewers. Previous research on how a community views review contributions found that longer reviews are more likely to be popular with the community [6] and that critical reviews are seen as useful. Yet people may be more reluctant to contribute negative reviews because of being seen as being publically critical of a product or service, especially if the reviewer's name is linked to the contribution. In addition, those who are more altruistic may contribute more in terms of large and detailed reviews compared to those who are less altruistic. Future work should explore the type and form of the reviews to get a more detailed view of how individual differences affect the type, length and detail of written reviews.

CONCLUSION

This work uses a mixed methods approach to understand what encourages and stops users from contributing online reviews and ratings and how individual differences relate to opinion contribution behaviour. Unlike previous work we make a clear distinction between rating and reviewing, an approach which was supported by our findings. People perceived a difference in terms of cost in time and effort between leaving online reviews and online ratings. Based on this they then assess whether the perceived benefit of doing a written review is worth this cost. In Studies 1 and 2 we found that helping others (i.e. altruism) plays a strong role in motivating people to review, but that it doesn't predict the frequency at which we review or the rate at which we contribute ratings of the products and services we've experienced.

What was more important to predicting levels of reviewing in Study 2 was people's attitudes towards reviewing and

what those close to them thought about giving written online reviews. People's attitudes towards online written reviewing and the perceived ease or difficulty of being able to write an online review also significantly predicted whether people had rated products previously or not. What other's thought about reviewing also related to the frequency at which people rate, giving us as sense that, although distinct in their execution, the views we have of reviewing are still related to our rating behaviours.

Based on these results we propose that systems with reviewing functionality should look to reduce the cost of review writing, highlight the benefit reviewing has to other customers, highlight the norms of reviewing and rating in people's social networks and target people with high altruism levels who have not contributed reviews previously. These are likely to increase user engagement with ways of contributing opinions on purchases and experiences.

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