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# "Ask Everyone?" Understanding How Social Q&A Feedback Quality

## **Influences Consumers' Purchase Intentions**

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Abstract: Social question & answer (Q&A) feedback is a novel form of electronic word-of-mouth that allows customers to ask questions and share opinions with peer customers. Based on the stimulus-organism-response framework, this paper proposes a model to describe how social Q&A feedback quality affects consumers' willingness to purchase by influencing their perceived risk, perceived usefulness, and use intention. We focused on the social Q&A feature named *Ask Everyone* in Taobao and collected 153 valid responses through an online survey. Canonical correlation analysis was used to identify the association between feedback characteristics and feedback quality. Then, PLS-SEM was conducted to test the proposed research model. Results show that feedback quality negatively associated with perceived risk, but had a positive impact on perceived usefulness, use intention, and purchase intention. Findings of this research has both theoretical and practical implications for facilitating social Q&A design in e-commerce platforms.

Keywords: social Q&A, feedback quality, purchase intentions

#### 1. INTRODUCTION

Word-of-mouth (WOM) communication is an important way to transfer information between consumers, and is an important supplement and evaluation of products. Arndt <sup>[1]</sup> originally defined WOM as a non-profit oral communication initiated by propagators and related to products or services. With the emergence of social commerce, consumers often rely on information shared by peer consumers who have purchased the same product to make their own decisions on purchase. Prior research on online reviews show that problems such as duplication, redundancy and even fake reviews can mislead consumers and the trustworthiness of online review has been raised as a concern by both researchers and practitioners <sup>[2, 3]</sup>. In the past a few years, some leading e-commerce websites (such as Taobao in China) launched a novel social Q&A feature named *Ask Everyone*. Those who are interested in a product can ask questions about peer customers who have purchased the same product before. Such Q&A interaction is displayed below the product information for other consumers to refer to when they are browsing the product online.

As a new form of social Q&A, *Ask Everyone* shows the actual buyers' perceptions and experiences of products. Through such social interaction, consumers are not constrained by what is available on the product introduction page. Social Q&A feature allows consumers to acquire product information from peer consumers so that they may be less concerned with redundant or fake reviews [4]. This is very important for consumers to make shopping decisions. Meanwhile, the social Q&A feature turns one-way WOM into a more interactive form and brings more opportunities to enable consumers to flexibly describe their questions and selectively refer to answers. On the other hand, the emerge of social Q&A feature is important to e-commerce platforms as it demands e-commerce platforms to optimize the design of such social Q&A features and support consumers to make better informed decisions.

This paper studies how to evaluate Q&A feedback quality, and constructs a model of how Q&A feedback quality influences consumers' purchase intentions, based on the S-O-R framework in environmental psychology

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<sup>[5]</sup>. We conducted a survey to collect data to validate our research hypotheses. This study provides a theoretical basis for exploring the impact of Q&A feedback quality on consumers' use intentions and their subsequent purchase intentions. In addition, the results of this study can provide effective guidelines for e-commerce platforms to improve their social Q&A design and further support consumers' shopping decisions.

#### 2. LITERATURE REVIEW

#### 2.1 Stimulus-organism-response framework

The Stimulus-Organism-Response (S-O-R) framework was proposed by Mehrabian&Russell <sup>[5]</sup> to describe how environment stimuli affect human internal reactions and behavioral responses. A complete S-O-R framework must have external stimulus variables, the body's perception as a mediator, and the body's behavior as a response variable. The relationship between stimulation and response is well represented by mediator variables. The S-O-R framework is often applied to explain the consumer's decision-making behavior in the shopping environment. Eroglu, Machleit&Davis <sup>[6]</sup> used the S-O-R framework to explain the impact of external stimuli on consumer behavior through emotion and perception as an intermediary state in online retail. The model believes that the external environment's stimulus will affect the consumer's internal state, which in turn affects consumer behavior. The internal state includes emotion, internal perception, etc. Internal perception is divided into perceived usefulness and perceived risk.

#### 2.2 Q&A feedback

Q&A feedback is introduced by the Q&A knowledge community. The Q&A community is a network platform that users frequently use to create information spontaneously in recent years. On this question and answer platform, the user can act as both a questioner and an answerer to provide answers through their own experiences and accumulated knowledge. However, because any user is free to create information, there is a huge difference in the quality of the information in the Q&A community. Jeon, Croft, Lee&Park <sup>[7]</sup> constructed a retrieval model from the perspective of non-textual features of information to evaluate the quality of information answered in the Q&A community. The classification method was adopted by Agichtein, Castillo, Donato, Gionis&Mishne <sup>[8]</sup> to study the characteristics of the text, supporting that information quality is reflected in textual characteristics of information.

#### 2.3 Purchase intention

Intention refers to the willingness of an individual to perform certain behavior, which is an immediate antecedent of actual behavior. Purchase intention is usually considered as an immediate antecedent of purchase behavior. Based on the technology acceptance model, Gefen, Karahanna&Straub <sup>[9]</sup> proposed that the reliability, ease of use and usefulness of shopping websites are positive factors affecting the purchase intention of online shopping consumers. Perceived risk was found to reduce the likelihood of consumers' purchase behavior <sup>[10]</sup>. Rabjohn, Cheung&Lee <sup>[11]</sup> consider relevant information to be useful and acceptable to consumers from the perspective of information quality and information sources.

### 3. RESEARCH MODEL AND HYPOTHESES

This paper constructs a model of the impact of Q&A feedback quality on e-commerce consumers' purchase intentions based on the S-O-R framework. The Q&A feedback quality in the model is used as the stimulus variable S, perceived usefulness, perceived risk and use intention as the mediator variable O, and the consumer's willingness to purchase as the final response variable R. We propose this model to depict how Q&A feedback quality influences consumers' purchase intentions through three mediators. The model is shown in Fig.1.

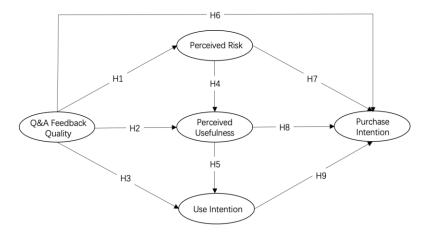


Figure 1. Research Model

Q&A feedback quality includes sufficiency, correlation, accuracy, and objectivity. Sufficient information can help consumers to understand the characteristics of a product more comprehensively and completely, so that consumers can evaluate the product, have a more comprehensive understanding of the product, and reduce the risk of adverse consequences after purchasing the product. Three mediator variables are as follows. Perceived usefulness refers to the usefulness of consumer perception Q&A feedback in the purchase decision process. Perceived risk refers to the estimation of the degree of loss caused by the loss of the performance of the product in advance in the process of online shopping. Use intention refers to the subjective likelihood and probability that the consumer will continue to use the Q&A feedback function. The dependent variable is purchase intention, which refers to the subjective possibility and probability that the consumer is willing to purchase a specific product.

Shen [12] argued that the online shopping consumers are more concerned about the true reliability of the information, identifying hat the real and reliable information is negatively correlated with the perceived risk. Rabjohnet al. [11] showed in the study that sufficiency can explain the details of products more comprehensively; relevance provides convenience for consumers to purposefully search for information. Korfiatis, Garc A-Bariocanal&S &Nchez-Alonso [13] pointed out that user perceptions are influenced by real and objective online reviews that make consumers think they are helpful. Shen [12] found through a survey of online shopping for users that the quality of online reviews affects consumers' understanding and trust in product characteristics, which ultimately affects use intention. Therefore, this paper proposes the following hypotheses:

H1: Q&A feedback quality is negatively related to perceived risk.

H2: Q&A feedback quality is positively related to perceived usefulness.

H3: Q&A feedback quality is positively related to use intention.

Erogluet al. <sup>[6]</sup> used perceived usefulness and perceived ease of use as two influencing factors of user's willingness in the technology acceptance model (TAM). Perceived risk of product can impair consumers' diagonisity of product, lowering their perceptions of usefulness of the shopping site <sup>[14]</sup>. Gefen et al. <sup>[9]</sup> confirmed that the perceived useful is positively correlated with the use intention. Therefore, this study proposes the following hypotheses:

H4: Perceived risk is negatively related to perceived usefulness.

H5: Perceived usefulness is positively related to use intention.

Yang&Qian <sup>[15]</sup> found that the quality of online word-of-mouth is positively correlated with consumers' purchase intention. Petty&Cacioppo <sup>[16]</sup> pointed out that high-quality Q&A feedback is more convincing and affects consumption. The purchase intention plays a positive role. Erogluet al. <sup>[6]</sup> pointed out that perceived risk has an impact on consumer purchasing decisions; consumers are aware of risks if they realize that a purchase

deviates from its actual purpose. After that, it will greatly reduce its purchase intention. Zhao, Zhao&Helsen [17] argued that consumers' perceived usefulness is a special form of perceived diagnosis. When consumers think that the information they browse is very useful and necessary, they are more likely to adopt information, which further affects the purchase intention. At the same time, in the TAM model, it is pointed out that the use intention and the satisfaction will further affect the user's purchase intention. Therefore, this study proposes the following assumptions:

H6: Q&A feedback quality is positively related to purchase intention.

H7: Perceived risk is negatively related to purchase intention.

H8: Perceived usefulness is positively related to purchase intention.

H9: Use intention is positively related to purchase intention.

#### 4. METHODOLOGY

#### 4.1 Survey design

This study collected data from consumers through online questionnaires. The questionnaire has three sections. The first section asked respondents to recall their recent shopping experiences in Taobao and ask them whether they had refer to the Ask everyone feature. This question was used to filter out respondents who had no experiences with Ask Everyone. The second section had the main survey instrument. The third section asked for respondents' demographic characteristics, including basic information such as gender, age, education level, and disposable income.

#### 4.2 Measurements

As we are interested in how social Q&A feedback characteristics are associated with the quality of social Q&A feedback, we measured 11 objective indicators of feedback characteristics and 4 subjective indictors of feedback quality. The 11 objective indicators are adapted from extant literature, including enough words, more "likes" [18], description of product characteristics, real shot pictures [19], description of product characteristics, accurate expression of personal experience [20], accurate description of product information, full expression of personal opinions, description of the product status truly [21], recently published [22], and higher rating [18]. The subjective items of the perceived risk, perceived usefulness, use intention and purchase intention are adapted from extant literature, as shown in Table 1. All subjective items are measured with five-point Likert scale, ranging from "strongly disagree" to "strongly agree".

Variable Measurement item References Adapted from Yan [21] Feedback quality FQ1: The content is specific. FQ2: The answer is related to product characteristics. FQ3: The description is accurate. FQ4: The description is reliable. Adapted from Davis [23] Perceived PU1: Using Ask Everyone improves my shopping performance. usefulness Lim [24] PU2: Using Ask Everyone improves my shopping efficiency. PR1: I think the possibility of buying fake and shoddy products is low. (R) Perceived risk Kim&Malhotra [25] PR2: I think the possibility of buying a poor quality product is low. (R) UI1: I want to continue to use Ask Everyone to get product information. Use intention UI2: I will continue to use Ask Everyone to get peer opinions. UI3: I will continue to refer to Ask Everyone. Wells, Valacich&Hess [26] Purchase intention PI1: After using Ask Everyone, I am more likely to buy this product. PI2: After using Ask Everyone, I am more willing to purchase this product.

Table 1. Measurement items of Constructs

Note: Items of perceived risk are reverse coded.

#### 5. DATA ANSLYSIS AND RESULTS

#### 5.1 Data collection

In the pilot test, 64 responses were collected to validate the instrument. The Cronbach's  $\alpha$  coefficient was calculated to test the reliability of the measurement items. The exploratory factor analysis method was used to test the validity of the instrument. The pre-test results show that the Cronbach's  $\alpha$  values of all constructs are all greater than 0.8, indicating that the questionnaire is reliable. Then, in the main survey, a total of 200 questionnaires were collected. During the data screening state, 47 respondents who had not referred to *Ask Everyone* function were excluded, leading to a total of 153 valid responses. As the sample size is more than 10 times of the maximum number of a construct's items, we consider it is sufficient for the PLS-SEM analysis.

Descriptive statistics shows that the sample had 116 females, accounting for 75.8%, and 37 males, accounting for 24.2%. Most of the respondents are between the ages of 18 and 50, and 80% of respondents are undergraduates. In terms of monthly online shopping expenses, 58.2 % of the respondents spent less than 1,500 yuan, 17.6% spent between 1500 and 3000 yuan, and 11.1% spent more than 3,000 yuan. Overall, we think the sample has a good representation of population who are familiar with e-commerce platforms and social Q&A feedback features.

#### 5.2 Measurement Model

For the reliability test of the overall data, the reliability test of the questionnaire items is performed by the Cronbach  $\alpha$  coefficient method. The reliability analysis of the overall data shows that Cronbach a is all greater than 0.8, which meets the evaluation criteria of reliability test, indicating that the measurement items have a good internal consistency. We conducted an exploratory factor analysis in the pilot test, which supported the existence of five latent factors. Then, for the main survey dataset, we conducted a confirmatory factor analysis to verify the structure of latent factors. The value of the factor-loadings within the same construct is higher than their loadings on other constructs, therefore, the factor-loading analysis supports the validity of measurement model.

Construct	Item	Cronbach's α	FQ	PR	PU	UI	PI
FQ	FQ1	0.940	0.913	-0.577	0.640	0.623	0.633
	FQ2		0.926	-0.614	0.668	0.681	0.595
	FQ3		0.919	-0.633	0.658	0.651	0.594
	FQ4		0.926	-0.576	0.596	0.673	0.603
PR	PR1	0.827	-0.608	0.923	-0.676	-0.516	-0.600
	PR2		-0.595	0.923	-0.657	-0.539	-0.534
PU	PU1	0.851	0.654	-0.698	0.933	0.578	0.620
	PU2		0.644	-0.649	0.933	0.610	0.583
UI	UI1	0.917	0.666	-0.537	0.613	0.960	0.612
	UI2		0.622	-0.483	0.496	0.910	0.548
	UI3		0.695	-0.568	0.66	0.907	0.610
PI	PI1	0.837	0.615	-0.589	0.611	0.631	0.927
	PI2		0.606	-0.550	0.584	0.551	0.927

Table 2. Results of reliability and factor-loading analysis

Table 3 shows the results of convergent and discriminant validity analysis. All latent factors have composite reliability coefficients greater than 0.90 and AVE values greater than 0.80 <sup>[27]</sup>. Therefore, the convergent validity is supported. In addition, the correlation coefficients between different latent factors are smaller than the correlation coefficients between the same latent factors, so discriminant validity is also supported.

	CR	AVE	FQ	PR	PU	UI	PI
FQ	0.957	0.848	0.921***				
PR	0.920	0.853	-0.652***	0.923***			
PU	0.931	0.871	0.695***	-0.722***	0.933***		
UI	0.948	0.858	0.714***	-0.571***	0.637***	0.926***	
PI	0.925	0.860	0.658***	-0.614***	0.644***	0.637***	0.927***

Table 3. Results of discriminant validity analysis

Note: \*p<0.05, \*\*p<0.01, \*\*\*p<0.001, CR=composite reliability, AVE = average variance extracted

#### 5.3 Canonical correlation and structural equation modelling

In this section, we report the results of canonical correlation analysis and structural model analysis. Canonical correlation analysis is a multivariate technique that is commonly used to uncover associations between two sets of variable from the same subject unit. In this research, we are interested in uncovering the associations between objective design characteristics of social Q&A feedback and subjective evaluation of feedback quality, that is, the relationships between the four subjective items and the 11 objective indicators. Then, we will be more confident to use the subjective feedback quality items in our structural model analysis.

The canonical correlation analysis shows that one significant equation is sufficient to represent the relationship between design characteristics and feedback quality measurements (r = 0.835, p < .001). The indicators are significantly correlated with the four measurement items of the Q&A feedback quality, and the selected four measurement items can be used to describe Q&A feedback design characteristics.

Then, we used the latent feedback quality construct in our structural model analysis. As shown in Fig.2, Q&A feedback quality has a significant negative impact on perceived risk ( $\beta$ =-0.67, p<0.01), so H1 is supported. Q&A feedback quality has a significant positive impact on perceived usefulness ( $\beta$ =0.40, p<0.01), use intention ( $\beta$  = 0.54, p<0.01), and purchase intention ( $\beta$ =0.22, p<0.01), supporting H2, H3, and H6. As hypothesized, perceived risk has a significant negative impact on perceived usefulness is ( $\beta$ =-0.45, p<0.01) and purchase intention ( $\beta$ =-0.17, p<0.01), so H4 and H7 are supported. The path coefficients from perceived usefulness to use intention are 0.26 (p<0.01) and 0.24 (p<0.01), supporting H5 and H8. Use intention also has a significant positive impact on purchase intention ( $\beta$ =0.20, p<0.01), so H9 is supported.

To further understand the mediating effects of perceived risk, perceived usefulness, and use intention, we conducted a mediating test to show how Q&A feedback quality directly or indirectly affect consumers' purchase intentions. The results are shown in Table 4, the indirect effects from Q&A feedback quality are mediated by different set of variables. According to analysis results, the effects of feedback quality are significantly mediated by perceived risk, perceived usefulness, use intentions, respectively.

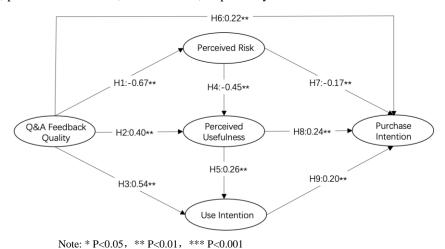


Figure 2. The results of structural equation model analysis

Direct variable	Mediator variable	Mediation effect	Direct effect				
	PR	0.1139**					
	PU	0.096**	0.0044				
FO	PI	0.108**					
FQ	PR&PU	0.0724	0.22**				
	PU&UI	0.0208	1				
	PR&PU&UI	0.0157					

Table 4. Mediation effect test

Note: \* P<0.05, \*\* P<0.01, \*\*\* P<0.001

#### 6. DISCUSSIONS AND CONCLUSIONS

This paper investigates the impact of social Q&A feedback quality on consumers' experiences, use intentions, and purchase intentions in an e-commerce platform. Theoretically, we drew upon the S-O-R framework and proposed a conceptual model to understand the effects of social Q&A feedback quality. Canonical analysis results support the associations between feedback design characteristics and subjective measurement items. Findings supported the proposed hypotheses and confirmed the importance of social Q&A feedback quality in enhancing user perceptions and encouraging purchase decisions. Practically, our findings provide suggestions for e-commerce platforms to improve their design of social Q&A platform. For example, e-commerce designers can provide incentives to promote consumer comments and set up good feedback mechanisms and interactive interfaces to stimulate consumers' willingness to use. Additionally, designers may consider improving the display of information and provide screening options for comments, in this way, consumers will be better guided to find helpful feedback that meet their needs. Overall, improving the usefulness of feedback and properly reflecting commodity risks can help promote consumption and establish a good corporate image.

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