Information Quality for Mobile Internet Services: A Theoretical Model with Empirical Validation

MINHEE CHAE, JINWOO KIM, HOYOUNG KIM AND HOSUNG RYU

INTRODUCTION

Mobile Internet is defined as the usage of Internet via handheld devices (Francis 1997). With the availability of mobile devices, it becomes easy to gain access to the tremendous amounts of information on the Internet anywhere and anytime. For example, we can read critical e-mail messages instantaneously by using Internet-enabled cellular phones, or compare product information from shops around us while shopping with PDAs (Albers and Kim 2000). Therefore, the benefits of the Internet may be significantly enhanced if the Internet can be made available anytime and anywhere via mobile devices (Buyukkokten and Barcia-Molia 2000). As a result, in recent years, the mobile Internet has quickly become popular. The number of people using mobile devices to connect to the Internet has already exceeded that of stationary Internet in Japan, and a similar trend is expected worldwide by 2002 (NUA Survey 1999).

However, the potential benefits of mobile Internet access may be reduced by the difficulties that arise from limitations of mobile devices – small and low resolution displays, limited storage and battery life, slow CPU speeds and data transfer difficulties (Kamba et al. 1996). These limitations make users demand higher quality information from mobile Internet because they have to deal with awfully cumbersome devices. Therefore, people are not willing to pay for mobile Internet services, unless they can find high quality information that outweighs the cost of access (Chae et al. 2000b). Accordingly, providing high quality information is an important factor for mobile Internet businesses: they must not only acquire customers by satisfying them during their first time use, but they must also maintain customer loyalty by making customers use them again and again in the future.

Even though information quality is expected to impact customer loyalty through user satisfaction, service providers are still uncertain regarding the design of mobile services. Should they focus on improving the quality of access by reducing system failure, or should they focus on improving the quality of interaction by facilitating navigation in information environments? Without an understanding of the various dimensions of information quality in mobile Internet services, it is difficult to provide effective guidelines to mobile service providers. However, neither theoretical frameworks nor empirical validations of information quality have been studied with regard to the characteristics of mobile Internet services, which are drastically different from those of stationary ones. Hence, we propose a theoretical model of information quality for mobile Internet services and validate the model with a large-scale survey.

A b s t r a c t

Providing customers with high-quality information is a key determinant for the success of mobile Internet. This study identifies the important dimensions of information quality in increasing user satisfaction and customer loyalty for mobile Internet services. In order to achieve this goal, we propose a general model of information quality with four dimensions, which we constructed by expanding prior research in information quality in order to reflect the characteristics of mobile Internet. We hypothesize that the four dimensions are positively related to user satisfaction and customer loyalty, and that their relative importance varies according to user goals. To validate the hypothesized model, we conducted a large-scale online survey with mobile Internet users. The results indicate that some dimensions are more important than others in increasing user satisfaction and loyalty, and the relative importance of the dimensions varies according to the intended goals of mobile Internet services.

A u t h o r s

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INFORMATION QUALITY FOR MOBILE INTERNET SERVICES

Many studies have recently been investigating the quality of information from diverse sources such as databases and web pages (Huang et al. 1999; Katerattanakul and Siau 1999; Strong et al. 1997; Wang, 1998). Wang and Strong suggested four major dimensions of information quality, which consisted of accessibility quality, intrinsic quality (content quality), contextual quality, and representational quality (Huang et al. 1999; Wang 1998). We modified their four dimensions in order to reflect the characteristics of information environments of mobile Internet, which are significantly different from those of the stationary Internet (Chae et al. 2000b). These differences make it impossible for their framework of information quality, which had been built mostly in the stationary environment, to be applied directly to the mobile Internet.

Information environment of mobile Internet

The information environment of mobile Internet is different from that of stationary Internet from three important perspectives (Chae et al. 2000a). First, in terms of resource availability, most mobile Internet devices have a much lower level of available resources compared to the stationary Internet (Kamba et al. 1996). Mobile Internet devices usually have much smaller screens, less convenient input/output facilities, and lower multimedia processing capabilities compared to desktop computers. For example, multimedia rich contents may not be suitable for the mobile Internet with limited resources. Second, in terms of accessibility, mobile Internet systems usually provide instant access to the Internet, which enables people to use the Internet anywhere and any time (Buyukkokten and Barcia-Molia 2000). Third, mobile Internet users are usually involved in various use contexts as they move around freely with mobile devices (Dey 2001; Schmidt et al. 1999). Compared to the stationary Internet, which is mostly used in limited contexts such as at the office or at home, mobile Internet can be used in much more diverse contexts such as in a car or outdoors. A mobile Internet service can be accessed in different contexts and hence various characteristics of contexts should be taken into consideration in developing mobile services.

Information quality of mobile Internet services

Considering those characteristics mentioned above, we propose a framework of information quality that is specific to mobile Internet services (Huang et al. 1999). In our framework, several extensions have been made to the prior framework of information quality. For example, the qualities of mobile devices are added to our framework because the quality of mobile content is heavily influenced by the quality of hardware devices, which is not quite the same for the stationary Internet. Another extension is made on the contextual quality of mobile content because providing content at the right time in the right place for the right people is significantly more important in mobile Internet (Dey 2001). These extensions result in a framework of information quality in mobile Internet services with four major dimensions – connection quality, content quality, interaction quality and contextual quality, which are explained in detail below.

Connection quality. Connection quality is achieved when customers can access stable mobile service without interruption of connection so that they can focus on their original tasks in a consistent manner. In other words, mobile Internet services should minimize connection errors that may prohibit customers from accessing information within the site and should provide speedy response to users’ inputs. Stable and speedy responses from a service are especially important to mobile Internet because of instant accessibility characteristic of mobile Internet environment mentioned above. Therefore, the connection quality includes the perceived stability and responsiveness of mobile Internet services. To measure the subjective stability and responsiveness of the connection quality, we shall use the ‘Purdue Usability Testing Questionnaire’ (PUTQ) (Lin et al. 1997) and access quality measures of prior ‘Information Quality’ (IQ) (Huang et al. 1999).

Content quality. Content quality refers to the inherent value and usefulness of the information provided by mobile services (Huizingh 2000). We expand the intrinsic quality of Wang and Strong (Strong et al. 1997) into mobile content quality by combining the value of its own (i.e. objectivity and believability) and the relevancy to the task of information customers (i.e. amount of information) because the objective and credible information that is highly relevant to the users’ task should be provided on a relatively small screen. In other words, the content should be backed up with objective and credible arguments to the user, and at the same time should provide enough information to be useful to the user’s task. Therefore, we shall adopt items from ‘Intrinsic quality’ and ‘Contextual quality’ of Information Quality (IQ) (Huang et al. 1999) to measure the content quality of mobile Internet services in this study.

Interaction quality. Interaction quality is achieved when mobile Internet services provide easy and efficient ways of interaction. We expand the representational quality of Wang and Strong into interaction quality by including usability issues because the awkward input device on the small display demands a high level of effort from the user while interacting with mobile Internet services (Kamba et al. 1996). It has been estimated that every additional click a user needs to make to access Mobile Internet sites
reduces the probability of a transaction by 50% (Durlacher Research 2000). Accordingly, interaction quality can be measured by usability quality in terms of structure, navigation, and presentation on the Mobile Internet. The structure of information should be self-descriptive, indicating where the specific information is located so that visitors may easily find it, while navigation should guide the customers through information space without making them lose track of where they are relative to other locations. In terms of presentation, the information should be presented on the screen so as to be clearly understandable to the users. To measure the structure, navigation and presentation of interaction quality, we have adopted ‘Perceived Usefulness and Ease of Use’ (PUEU) (Davis 1989), and ‘Questionnaire for User Interface Satisfaction’ (QUIS) (Chin et al. 1988) measures.

Contextual quality. Contextual quality is achieved when mobile Internet services are considered within the context of the user’s task at hand: customers must be able to use the information anywhere and anytime with little effort in getting access to it. We extend the contextual quality of Wang and Strong by emphasizing the importance of environmental contexts because providing information at the right time in the right place is more important for mobile Internet users, who need prompt support for their immediate needs (Dey 2001). Therefore, contextual quality highlights the important characteristic of mobile Internet, namely, timeliness by which customers can gain unrestricted access to information regardless of time and place, and promptness so that the process of accessing the information can be instant. To measure the contextual quality of mobile Internet services, we introduce new measures reflecting the property of timeliness and promptness, which will be shown in the Appendix.

User goal and information quality

The limited resources of mobile Internet devices and the various contexts of mobile Information environments increase the importance of users’ goal (Schmidt et al. 1999). This is because different goals of users require radically different information especially when the users have to use limited resources within widely varying environments. Therefore, the same information quality may have different impacts depending on the different goals of users in mobile Internet services.

In general, users’ goals can be classified into two categories – utilitarian or hedonic (Dhar and Wertenbroch 2000). Users with utilitarian goals pursue specific information, whereas those with hedonic goals surf while enjoying themselves without a specific purpose.

As well known by a number of previous studies in marketing fields, the quality of service or product, perceived by the customer, influences the level of satisfaction and customer loyalty (Fornell 1992). Therefore, in this study, we hypothesize that the same information quality may have different impacts on user satisfaction and also on customer loyalty for users with different goals. For example, information with the same content quality may be more effective to increase the level of user satisfaction for customers with utilitarian goals of information searching than for those with hedonic goals. Therefore, the two types of users’ goals are expected to play as a moderating variable between the four dimensions of information quality and user satisfaction, which will be explained more explicitly in the following section.

THEORETICAL MODEL OF INFORMATION QUALITY FOR MOBILE INTERNET

The proposed model for information quality of mobile Internet services consists of six constructs: four dimensions of information quality, one for user satisfaction, and one for customer loyalty. The constructs and their relationships are presented in Figure 1. The coefficients for the paths represent the proposed relations among the latent constructs. The theoretical hypotheses to be tested, grounded on each of the relations, are as follows:

- \( H_1 \): Each information quality dimension (\( H_{1a} \) – connection, \( H_{1b} \) – content, \( H_{1c} \) – interaction, \( H_{1d} \) – contextual) is positively related to satisfaction.
- \( H_2 \): Perceived user satisfaction will have a positive impact on customer loyalty.
- \( H_3 \): The customer’s intended goal of use will moderate the hypothesized relations between information quality dimensions and user satisfaction (\( H_{3a}, H_{3b}, H_{3c}, H_{3d} \)).

METHODOLOGY

Online survey

A research consortium was organized in order to gather reliable usage data of mobile Internet services. Sixteen companies participated in the consortium, including all major mobile telecommunication carriers and Internet portals in Korea. In the year 2000, an online survey was administered via a Website (Chae et al. 2000b). In two weeks, a total of 10,329 responses were collected.

All the responses were checked with the cooperation of mobile telecommunication carriers as to whether the respondents actually owned Internet-enabled phones and had used mobile Internet services at least once prior to responding to the survey. Consequently, 1,568 responses were dropped from further analysis because they did not meet the criteria. Among the final 8,761 respondents, 67% were male and 33% were female. In terms of age demographics, most were between the ages of 18 and 23 (44.7%), followed by those between 24 and 29 (32.7%), then over 30 (15.0%), and younger than 17 (7.6%).
Figure 1. Theoretical Model of Information Quality for Mobile Internet Services

Measures

In order to test the proposed model of information quality of mobile Internet services, we constructed a questionnaire for current mobile Internet users based on the relevant literatures (Chin et al. 1988; Davis 1989; Huang et al. 1999; Lin et al. 1997). To ensure measurement reliability and validity, we conducted a pilot study with 50 mobile Internet users. Based on the results of the pilot study, the items that did not contribute to the consistency and validity of theoretical constructs were excluded from the final questionnaire. Twenty-five questions were selected for the main survey. The final questionnaire is presented in the Appendix.

The final questionnaire comprised three parts: measures for users’ prior experience of mobile Internet service, subjective measures of information quality, and finally measures for user satisfaction and customer loyalty. The service experience part consists of two questions: (1) the specific mobile Internet service the respondent had used most recently and (2) the intended goal for accessing the service (i.e., utilitarian goal of information seeking or hedonic goal of surfing). After completing the customer experience part, respondents were asked to have in mind the specific service they chose while answering the rest of the survey. The subjective information quality part consists of 17 items: four items for connection quality (two for stability and two for responsiveness), three for content quality (one for objectivity, one for believability, and one for amount), six for interaction quality (two for structure, two for navigation, and two for presentation), and four for contextual quality (two for timeliness and two for promptness). Finally, the questionnaire included three items for user satisfaction and two for customer loyalty.

Data analysis

To test our model of information quality for mobile Internet services, we conducted the following analyses. First, we confirmed the existence of four separate dimensions of mobile information quality through exploratory component factor analysis. We also computed Cronbach’s alpha coefficients to the construction of measures using the average of the scales. Second, in order to perform a cross validation test, we used two subsets of data as samples from the full dataset. Third, we evaluated the general structural equation model (i.e., including both utilitarian and hedonic goals) to test the causal relations among the four dimensions of information quality, user satisfaction and customer loyalty. Finally, we conducted multigroup analysis with two structural models by splitting the sample into two subgroups according to user goal, utilitarian or hedonic.

RESULTS AND DISCUSSION

Reliability and validity of measures for information quality

Table 1 shows the results of the exploratory factor analysis in which the construct validity of the four dimensions of information quality is measured. As can be seen in Table 1, the 17 items in the questionnaire are classified into four factors, indicating four constructs of information quality: factor 1 for connection quality, factor 2 for content quality, factor 3 for interaction quality, and factor 4 for contextual quality. The total cumulative percentage of variance explained by the four factors is 66.2%, and the Eigenvalues of the four factors are all above 1.00.
Therefore, the extracted four factors seemed to correspond to the four constructs of information quality as suggested in the proposed model. As all the Cronbach’s alpha values for the connection, content, interaction and contextual quality are above 70%, we proceeded by using the average value of the responses as the value of observed variable for the structural model in the next section.

Cross validation results for the general structural equation model

We randomly selected two sub-samples of 1,000 responses from the original data set, stratified by age and gender according to the general demographics of mobile Internet users in Korea (Chae et al. 2000b). One of the two samples was used as a calibration sample and the other used as the validation sample for the cross validation of the model. We did this for two purposes. First, the random stratified sampling from the initial data set alleviates the problem of self-selection, one of the most serious drawbacks of web-based surveys. Second, two sets of sub-samples allow us to conduct the cross validation tests that reduce the potential for sampling bias problems. The two samples of 1,000 respondents were used to construct the general goal model of information quality. The goodness of fit indices for the two structural models and the cross validation index (CVI) between the two models are presented in Table 2.

As can be seen in Table 2, the goodness of fit indices for the calibration and validation models is not significantly different, and the CVI between the two models is 0.21, which is close to zero. The result indicates that the two samples are homogeneous and therefore, the results from the calibration sample can be used as a representative of the entire dataset (Browne and Cudeck 1983).

A general model of information quality

Using structural equation modelling (SEM) analysis, we tested the hypothesized sequence of relationships of the general model as a set. We assessed the fit of the model (calibration model) using several goodness-of-fit indices. Those fit indices are within acceptable limits; goodness of fit (GFI = 0.96), adjusted goodness of fit (AGFI = 0.94), normed fit index (NFI = 0.96), root-mean-square residual (RMR = 0.065) and root-mean-square error (RMSEA = 0.055). Therefore, these results suggest an appropriate model fit, indicating that the proposed model explains the relationships between latent constructs well.

Figure 2 presents the LISREL results for the theoretical model of the general goal of information quality by the use of maximum likelihood estimation. Results include factor loadings of each observed variable and path coefficients representing the proposed relations between the latent constructs. All four constructs for information quality were found to have significant relations with user satisfaction, which, in turn, was shown to be related to customer loyalty. If one looks at the path coefficients (\( \hat{b} \)), interaction quality (0.38) and connection quality (0.29) have larger impacts on user satisfaction than the other two constructs, content quality (0.21) and contextual quality (0.09).

We may interpret that all four constructs of information quality of mobile Internet services should be supported to increase user satisfaction so that they will come back again in the future. Particularly, stable and responsive system

| Table 1. Variance Explained by the Factors of Information Quality |
|---------------------------------|----------------|----------------|----------------|----------------|
| **Extracted Factors** | **Factor 1** | **Factor 2** | **Factor 3** | **Factor 4** |
| **Connection Quality** | 5.7 | 3.0 | 1.6 | 1.1 |
| **Content Quality** | 33.4 % | 17.3 % | 9.3 % | 6.2 % |
| **Interaction Quality** | 33.4 % | 50.7 % | 60.0 % | 66.2 % |
| **Context Quality** | 0.86 | 0.74 | 0.73 | 0.90 |

* Principal component with Varimax rotation

| Table 2. The Goodness-of-fit Indices for the General Goal Model |
|----------------|----------------|----------------|----------------|----------------|----------------|
| **Model** | **2** | **df** | **P-value** | **GFI** | **AGFI** | **NFI** | **RMR** | **RMSEA** |
| Recommended* | Non-significant | Close to 1 | >0.80 | >0.90 | <0.08 |
| C-model** | 318.76 | 80 | 0.00 | 0.96 | 0.94 | 0.96 | 0.065 | 0.055 |
| V-model** | 341.71 | 80 | 0.00 | 0.96 | 0.94 | 0.96 | 0.061 | 0.057 |

* Hair et al. (1998)

** C-model is calibration model and V-model is a validation model for Cross validation
connection and the quality of the user interaction are more critical factors than the other two, for the user should be able to rely on stable connections in order to acquire easily the content and contextual value of the information. In other words, no matter how much content or contextual quality is offered, a mobile service may be less useful if the information is not accessible either because of connection failures or interaction difficulties.

### Two sub-structural models for the different intended goals

The 1,000 responses used for the general structural model in the above section were split into two sub-groups based on the answer to the item on the respondents’ initial purpose. Consequently, 48.2% of respondents accessed the mobile Internet information with the utilitarian goal of information search, while 51.8% had the hedonic goal of entertainment.

In order to test whether the two groups were different, we conducted the multigroup analysis using nested chi-square tests (Table 3). The results indicate that two groups were different in terms of the importance of content quality ($\Delta \chi^2 = 3.96, 1, p < .05$) and interaction quality ($\Delta \chi^2 = 4.05, 1, p < .05$). As shown in Table 3 and Figure 3, the content quality was found to have a more significant impact on user satisfaction for utilitarian users ($b = .26, t = 4.46, p < .05$) than for hedonic users ($b = .13, t = 0.53, p < .05$). On the other hand, the interaction quality was found to have a more significant impact on user satisfaction for hedonic users ($b = .49, t = 5.15, p < .05$) compared to utilitarian users ($b = .29, t = 4.22, p < .05$). This might be because users with utilitarian goals might judge value more on the objectivity and credibility of information than on ease of use. For example, people using mobile trading services would like to get the exact stock price; hence, for them, how these stock prices are presented might not be as important as the accuracy of the information. However, users with hedonic goals might value more the usability and aesthetic value of services than accuracy or credibility of information. For instance, people playing games from mobile services would not care much about the exact information of game characters but focus more on the ease of manipulation and appearance of the characters.

### CONCLUSIONS AND GENERAL DISCUSSION

We developed a causal model of information quality for mobile Internet services in this study and conducted a large-scale survey to empirically test the causal model. The results of the survey clearly indicate that our model explains to a fair degree the impacts of information quality on user satisfaction and, in turn, on customer loyalty. The structural model with general goals suggests that all four dimensions of information quality have significant impacts on user satisfaction, with connection and interaction quality having more substantial effects than content and contextual quality. The structural models with different user goals (i.e., utilitarian or hedonic) indicate that users with utilitarian goals value more the content quality of the services while those with hedonic goals value more the interaction quality.

There are several limitations to this study. First, this paper gathered data from an online survey, which usually entails self-selection bias. Even though we tried to minimize this bias by employing the stratified sampling method and comparing calibration and validation samples, we need further research that minimizes the selection bias with other research methods such as an experimental study. The experimental study in the future may also provide more
direct causal explanations between the system characteristics and business implications, which could be only inferred indirectly in this study. Second, the survey was conducted with mobile Internet users in the Korean market. Even though the Korean mobile Internet market is one of the most active markets in the world, the results cannot be applied directly to other countries and cultures. For example, we conducted our survey of mobile Internet-enabled phone users, excluding users using other types of handheld devices, such as PDA. Another survey research is being conducted that will compare the results of this study with those of other nations. Finally, this study focused on cellular phones among other kinds of mobile Internet devices because cellular phones are radically different from traditional desktop computers used for stationary Internet. However, future research should examine whether the study results can be applied to other mobile devices such as PDAs.

Despite the limitations, we hope our results will provide theoretical and practical contributions. From the theoretical perspective, we propose a framework of information quality for mobile Internet services, grounding ours on prior studies of information quality. We also provide full sets of measures for four dimensions of mobile information quality, and empirically validate the measure and model with an online survey. From the practical perspective, the study results suggest development guidelines for mobile service providers. For example, those companies developing mobile Internet services primarily for users with hedonic goals should focus on interaction quality of the information, providing convenient navigation aids or delightful screen design. Those developing utilitarian goal oriented mobile services should pay more attention to content quality of information, securing credible sources of information or contracting with many information providers in order to obtain as much information as possible.

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Note
We do not consider the chi-square value as a GOF indicator in assessing our model, because $\chi^2$ GOF criterion is very sensitive to sample size, and as sample size increases (generally above 200), the $\chi^2$ test has a tendency to indicate a significant probability level (Marsh, Balla and McDonald 1996).

References


Appendix. Survey Questionnaire

1. Please choose a mobile Internet service you have used most recently among followings.
   1) Online game                               10) Location-based information
   2) News                                      11) Humour/cartoon
   3) Sports/Entertainment                      12) Literature
   4) Stock/Investment                          13) Movie/Concert
   5) Shopping                                  14) Traffic information
   6) Auction/Horse race                        15) Fortune telling
   7) Leisure/Travel                            16) Quiz/Electronic lottery
   8) Weather                                   17) Fashion/Beauty
   9) Health                                    18) Wedding/love

2. When did you last use the mobile Internet service that you chose above?
   1) A day ago                                  2) 1–3 days ago
   3) 3 days – a week ago                       4) 1–2 weeks ago
   5) 2 weeks – a month ago                     6) More than a month ago

3. What was the main goal to use the mobile Internet content you chose above?
   1) With utilitarian goal of seeking specific information
   2) With Hedonic goal of seeking overall pleasure

Questions: Please answer the following questions based on your experience for the mobile Internet service you chose above.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Strongly Disagree</th>
<th>Neutral</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. This mobile Internet content system is stable to use</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. This mobile Internet content system has few errors</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Downloading time is speedy enough</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>7. This mobile Internet content system quickly responds to my input or clicks</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>8. The information this content provides is objective</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. The information this content provides is understandable</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>10. The amount of information is enough</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>11. The menus of this content site are clearly categorized</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>12. I can easily recognize where the information I need is located</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>13. I can easily move back to the page I previously visited.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>14. While I was on the site, I was able to be aware of where I was</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>15. The information this content provides is consistently represented</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>16. The screen design of the content is harmonious</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>17. I can access to this content whenever I need</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>18. I can access to this content wherever I need</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>19. This content automatically recognizes me</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>20. The input process is quite simple to use this content</td>
<td>1</td>
<td>2</td>
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<tr>
<td>21. I can effectively achieve what I want through this content</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22. Using this content is overall interesting to me</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>23. This content is overall satisfactory</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>24. I would visit this content site again</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25. I am willing to pay for using this content</td>
<td>1</td>
<td>2</td>
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