

Development of Usability Satisfaction Measurement for Online Survey Instruments

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QDET2

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Motivation

1. Need an instrument to appropriately measure respondent's satisfaction with Web survey.
2. **What is the construct of Web survey satisfaction?**
3. How to develop the construct of Web survey satisfaction?

Systematic Review - Methods

Review scope:

Studies on measuring satisfaction of ***software users***, ***patients*** in healthcare settings, and other product ***consumers***.

Search period: 2000-2015

Databases searched:

- Business Source Complete
- Computers & Applied Sciences Complete
- MEDLINE
- PsycINFO
- SocINDEX

Systematic Review – Methods (con't)

Search terms:

- “satisfaction questionnaire” AND “consumer satisfaction”
- “satisfaction questionnaire” AND “patient satisfaction”
- “satisfaction questionnaire” AND “usability satisfaction”

Search protocol:

1. Peer-reviewed journal articles
2. Search by “Subject Terms” first, (if no articles found) search by “All Text”
3. Sorted by relevance
4. Reviewing abstracts of the first 50 articles for each set of search term, independently by two reviewers
5. For articles selected by only one reviewer, a decision was made through discussion between the two reviewers

Systematic Review – Search Results

Selected for full text review:

“satisfaction questionnaire” AND “consumer satisfaction”

- 6 articles (*by Subject Terms*)

“satisfaction questionnaire” AND “patient satisfaction”

- 11 articles (*by Subject Terms*)

“satisfaction questionnaire” AND “usability satisfaction”

- 17 articles (*by All Text*)

34 articles out of 150 articles from database search

10 articles selected from the references in the 34 articles

13 articles referred by experts

Systematic Review – Full Text Review Methods

Information abstraction:

1. Target population
2. Study sample
3. Questionnaire topic
4. **Questionnaire development process**
5. Mode
6. Response scale
7. Statistical methods
8. Domains

General Approach to Developing Satisfaction Questionnaire

1. Generating questionnaire items
2. Assessing face validity and readability
3. Assessing content validity
4. Constructing domains
5. Checking internal consistency
6. Revising the instrument if needed, then repeat Steps 2-5 until no more revisions
7. Assessing construct validity (e.g. convergent-discriminant validation)

Generation of Questionnaire Items

13 articles described *how questionnaire items were generated*:

- Computer system – 3
- Patient – 9
- Consumer - 1

| Items were | Number of studies |
|---|-------------------|
| adopted from existing items | 10 |
| created through subject-matter expertise | 2 |
| generated through in-person interviews / focus groups | 2 |

Adoption of Existing Items

Kolb SJ et al, J Behavioral Health Services & Research, 2000

- Review sources:
 - Published questionnaire
 - Patient satisfaction literature
 - Recommendations from psychiatric staff

- 112 potential questionnaire items
 - 74 areas of behavioral health care or service

- Reviewed by 109 psychiatric staff, patients and caregivers

- Each Item was rated in terms of clarity, actionability, Applicability

- 43 items were retained

Expert's Creation of Items

Bargas-Avila JA et al, Computers in Human Behavior, 2009

- ✓ Basis:
 - Theoretical approaches
 - Empirical data
- ✓ 4 authors and 1 intranet manager drafted the 1st version.
- ✓ The draft was revised by 3 intranet managers, with the criteria:
 - Whether the items were suitable for measuring the construct 'user satisfaction with the Intranet'
 - Whether the items were easy to understand
 - Whether important aspects had been missed
- ✓ 18 items finalized

Items Generated Based on Input from Target Population

Oades LG et al, J Evaluation in Clinical Practice, 2011

1. Focus group

- Perception of mental health services
- Important aspects of mental health services for consumers
- Criteria used in evaluating mental health services

2. Developing **interview questions** and guidelines

3. **Individual interviews** with consumers to develop themes that consumers perceive as important in evaluating mental health service

11 Themes Emerging from Interviews

Lindsay Oades et al, J Evaluation in Clinical Practice, 2011

1. Stigma
2. Information and education
3. Power and powerless
4. Consumer involvement
5. Medication
6. System issues
7. Responsive to consumers
8. Relationship with staff
9. Relationship with community and family
10. All of me
11. Diagnosis

Research Planning

1. Developing interview questions and guidelines
2. In-person interviews with respondents to develop themes that respondents perceive as important in evaluating Web survey experience
3. Generating items based on the themes developed from in-person interviews
4. Assess face and content validities
5. Construct meaningful factors (domains)
6. Ensure item reliability
7. Evaluate construct validity with cumulative data collection

Two-tier Model of Satisfaction Construct

1. General feeling of being satisfied
2. Situation-specific satisfaction



Interview Questions

1. Normally, when you say, “I am satisfied with something,” what do you actually mean?
2. If “you are NOT satisfied with something,” what do you actually mean?
3. After you complete a survey, what would make you to say “I am satisfied with completing this survey?”
4. Based on today’s experience, list THREE things that make you feel satisfied with completing this survey?
5. After you complete a survey, what would make you to say “I am dissatisfied with completing this survey?”
6. Based on today’s experience, list THREE things that make you feel dissatisfied with completing this survey?

Responses Summary (N=44)

Q1: Normally, when you say, “I am satisfied with something,” what do you actually mean?

| Word intensity | Count | % | Examples |
|----------------|-------|-----|---------------------------|
| Strong | 5 | 6% | happy, perfect, wonderful |
| Moderate | 59 | 72% | adequate, good, useful |
| Weak | 18 | 22% | Okay, not dissatisfied, |

Responses Summary (N=44)

Q2: If “you are NOT satisfied with something,” what do you actually mean?

| Word intensity | Count | % | Examples |
|-----------------------|--------------|----------|---|
| Strong | 37 | 43% | unhappy, frustrated, annoyed |
| Moderate | 36 | 42% | not meeting expectation, not adequate, feel anxiety |
| Weak | 13 | 15% | unpleasant, ambiguous, unclear |

Responses Summary (N=44)

Q3: After you complete a survey, what would make you to say “I am satisfied with completing this survey?”

| Word intensity | Count | % | Examples |
|-----------------------------|-------|-----|---|
| Meaningfulness | 22 | 36% | Understand the survey's useful purpose. |
| Question quality | 12 | 20% | Questions are not confusing. |
| User interface | 5 | 8% | Easy to navigate. |
| Technical quality | 3 | 5% | No technical issues. |
| Effort in completing survey | 13 | 21% | The survey is easy to complete. |
| Privacy and confidentiality | 3 | 5% | no detailed biography |
| Overall experience | 3 | 5% | not a frustrating experience |

Responses Summary (N=44)

Q4: Based on today's experience, list THREE things that make you feel satisfied with completing this survey?

| Word intensity | Count | % | Examples |
|-----------------------------|-------|-----|-------------------------------------|
| Meaningfulness | 16 | 18% | Contributing |
| Question quality | 16 | 18% | Clear/easy/understandable questions |
| User interface | 18 | 21% | Easy to go back and correct choices |
| Technical quality | 9 | 10% | No technical glitches |
| Effort in completing survey | 24 | 28% | Short survey |
| Privacy and confidentiality | 1 | 1% | Confidential |
| Overall experience | 3 | 3% | Not forced to answer sensitive Q's |

Responses Summary (N=44)

Q5: After you complete a survey, what would make you to say “I am dissatisfied with completing this survey?”

| Word intensity | Count | % | Examples |
|-----------------------------|-------|-----|---------------------------------|
| Meaningfulness | 12 | 14% | Not clear about survey purpose |
| Question quality | 30 | 36% | confusing questions |
| User interface | 6 | 7% | Poor response options selection |
| Technical quality | 11 | 13% | not working |
| Effort in completing survey | 22 | 27% | Too long |
| Privacy and confidentiality | NA | NA | |
| Overall experience | 2 | 2% | no reward |

Responses Summary (N=44)

Q6: Based on today's experience, list THREE things that make you feel dissatisfied with completing this survey?

| Word intensity | Count | % | Examples |
|-----------------------------|-------|-----|----------------------------|
| Meaningfulness | NA | NA | |
| Question quality | 41 | 64% | Repetative questions |
| User interface | 10 | 16% | Inconsistent screen design |
| Technical quality | 1 | 2% | Technical difficulties |
| Effort in completing survey | 10 | 16% | Long survey |
| Privacy and confidentiality | NA | NA | |
| Overall experience | 2 | 3% | Typing web URL |

Thank you

Contact

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