



SERVICE QUALITY OF WEB INFORMATION SYSTEMS

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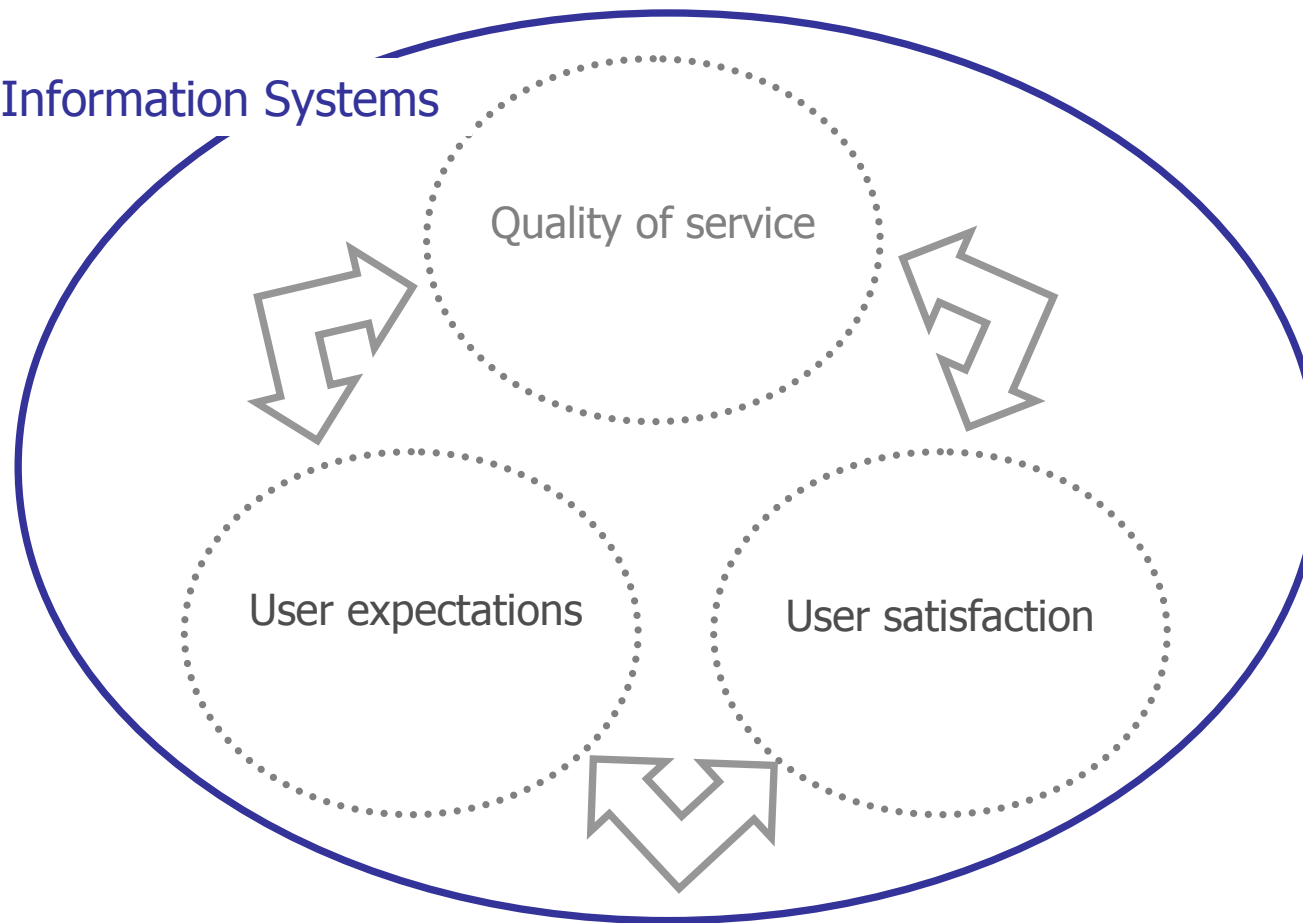
Plan

- o Web service quality
- o E-Qual Index
- o Factor analysis and dimensions
- o Comparison of two different web sites
- o Conclusion



Web Service Quality

Successful Information Systems





Research Setting and Method

- o Online bookstore "Idefix"
National information center "ULAKBIM"
- o Data => 1,900 users
- o Tool => E-Qual Index
- o Factor analysis



E-Qual Index

Usability

1. I find the site easy to learn to operate
2. My interaction with the site is clear and understandable
3. I find the site easy to navigate
4. I find the site easy to use
5. The site has an attractive appearance
6. The design is appropriate to the type of site
7. The site conveys a sense of competency
8. The site creates a positive experience for me

Information Quality

9. Provides accurate information
10. Provides believable information
11. Provides timely information
12. Provides relevant information
13. Provides easy to understand information
14. Provides information at the right level of detail
15. Presents the information in an appropriate format

Interaction Quality

16. Has a good reputation
17. It feels safe to complete transactions
18. My personal information feels secure
19. Creates a sense of personalization
20. Conveys a sense of community
21. Makes it easy to communicate with the organization
22. I feel confident that goods/services will be delivered as promised



Research Questions

- o How do users perceive the service quality of web sites in terms of information quality, usability and service interaction?
- o Which service dimensions do users value most?



Findings



Suitability & Reliability Tests

- o Suitable for factor analysis:

Idefix KMO=0.946, $p < 0.05$; ULAKBIM KMO=0.930,
 $p < 0.05$

- o Reliable:

Idefix $\alpha = 0.934$; ULAKBIM $\alpha = 0.968$



Idefix-Factor Analysis

- o Eigen value= 1
- o Five factors after rotation
- o Explain %75 of total variance
- o Dimensions:
 - o Quality of Information (questions 9-15)
 - o Trust (questions 16-18, 22)
 - o Usability (questions 1-4)
 - o Design (questions 5-8)
 - o Empathy (questions 19-21)



Idefix-Factor Analysis

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10,51	47,77	47,77	4,24	19,29	19,29
2	1,73	7,84	55,61	3,24	14,75	34,04
3	1,34	6,08	61,70	3,16	14,35	48,38
4	1,07	4,87	66,56	2,84	12,93	61,31
5	1,01	4,61	71,17	2,17	9,86	71,17
6	0,70	3,17	74,34			
7	0,58	2,65	76,99			
8	0,54	2,47	79,46			
9	0,49	2,22	81,68			
10	0,46	2,09	83,77			
11	0,44	1,98	85,75			
12	0,41	1,86	87,61			
13	0,39	1,76	89,37			
14	0,35	1,60	90,97			
15	0,32	1,45	92,43			
16	0,30	1,37	93,79			
17	0,28	1,29	95,08			
18	0,26	1,19	96,27			
19	0,25	1,15	97,42			
20	0,23	1,07	98,49			
21	0,19	0,86	99,35			
22	0,14	0,65	100,00			

Idefix-Factor Analysis



		Rotated Component Matrix					
		Groups					
Question#	Questions	1	2	3	4	5	
<i>Quality of Information</i>	14	Provides information at the right level of detail	0,762				
	12	Provides relevant information	0,711				
	15	Presents the information in an appropriate format	0,707				
	13	Provides easy to understand information	0,702				
	11	Provides timely information	0,672				
	10	Provides believable information	0,651				
	9	Provides accurate information	0,647				
<i>Trust</i>	17	It feels safe to complete transactions		0,778			
	18	My personal information feels secure		0,775			
	16	Has a good reputation		0,679			
	22	I feel confident that goods/services will be delivered as promised		0,627			
<i>Usability</i>	1	I find the site easy to learn to operate			0,813		
	4	I find the site easy to use			0,792		
	3	I find the site easy to navigate			0,756		
	2	My interaction with the site is clear and understandable			0,714		
<i>Design</i>	6	The design is appropriate to the type of site				0,805	
	5	The site has an attractive appearance				0,777	
	7	The site conveys a sense of competency				0,761	
	8	The site creates a positive experience for me				0,536	
<i>Empathy</i>	20	Conveys a sense of community					0,816
	19	Creates a sense of personalization					0,681
	21	Makes it easy to communicate with the organization					0,658



Idefix-Service Quality Dimensions

1. I find the site easy to learn to operate
2. My interaction with the site is clear and understandable
3. I find the site easy to navigate
4. I find the site easy to use
5. The site has an attractive appearance
6. The design is appropriate to the type of site
7. The site conveys a sense of competency
8. The site creates a positive experience for me
- 9. Provides accurate information**
- 10. Provides believable information**
- 11. Provides timely information**
- 12. Provides relevant information**
- 13. Provides easy to understand information**
- 14. Provides information at the right level of detail**
- 15. Presents the information in an appropriate format**
16. Has a good reputation
17. It feels safe to complete transactions
18. My personal information feels secure
19. Creates a sense of personalization
20. Conveys a sense of community
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22. I feel confident that goods/services will be delivered as promised

**Quality of
information
($\alpha = 0.881$)**



Idefix-Service Quality Dimensions

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 8. The site creates a positive experience for me
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 10. Provides believable information
 11. Provides timely information
 12. Provides relevant information
 13. Provides easy to understand information
 14. Provides information at the right level of detail
 15. Presents the information in an appropriate format
 - 16. Has a good reputation**
 - 17. It feels safe to complete transactions**
 - 18. My personal information feels secure**
 19. Creates a sense of personalization
 20. Conveys a sense of community
 21. Makes it easy to communicate with the organization
 - 22. I feel confident that goods/services will be delivered as promised**
-
- Trust**
($\alpha= 0.703$)



Idefix-Service Quality Dimensions

1. **I find the site easy to learn to operate**
2. **My interaction with the site is clear and understandable**
3. **I find the site easy to navigate**
4. **I find the site easy to use**
5. The site has an attractive appearance
6. The design is appropriate to the type of site
7. The site conveys a sense of competency
8. The site creates a positive experience for me
9. Provides accurate information
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15. Presents the information in an appropriate format
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19. Creates a sense of personalization
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} **Usability**
($\alpha = 0.819$)



Idefix-Service Quality Dimensions

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 - 6. The design is appropriate to the type of site**
 - 7. The site conveys a sense of competency**
 - 8. The site creates a positive experience for me**
 9. Provides accurate information
 10. Provides believable information
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 12. Provides relevant information
 13. Provides easy to understand information
 14. Provides information at the right level of detail
 15. Presents the information in an appropriate format
 16. Has a good reputation
 17. It feels safe to complete transactions
 18. My personal information feels secure
 19. Creates a sense of personalization
 20. Conveys a sense of community
 21. Makes it easy to communicate with the organization
 22. I feel confident that goods/services will be delivered as promised
- Design**
($\alpha = 0.758$)



Idefix-Service Quality Dimensions

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 15. Presents the information in an appropriate format
 16. Has a good reputation
 17. It feels safe to complete transactions
 18. My personal information feels secure
 - 19. Creates a sense of personalization**
 - 20. Conveys a sense of community**
 - 21. Makes it easy to communicate with the organization**
 22. I feel confident that goods/services will be delivered as promised
- } **Empathy**
($\alpha = 0.668$)



Idefix-Mean Scores

Mean scores of factors (Idefix)

Dimensions	Perception \bar{X}	Importance \bar{X}
<u>Quality of Information</u>	<u>4.0</u>	<u>4.6</u>
<u>Trust</u>	<u>4.3</u>	<u>4.8</u>
Usability	4.2	4.5
Design	3.6	3.9
Empathy	3.3	3.7
	$\bar{X}: 3.6$	$\bar{X}: 4.3$



ULAKBIM-Factor Analysis

- o Four factors after rotation
- o Explain %77 of total variance
- o Dimensions:
 - o Quality of Information & Trust (questions 9-18, 22)
 - o Usability (questions 1-4)
 - o Design (questions 5-8)
 - o Empathy (questions 19-21)



ULAKBIM-Factor Analysis

Total Variance Explained

Components	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13,22	60,07	60,07	7,22	32,83	32,83
2	1,86	8,45	68,52	4,03	18,34	51,16
3	1,05	4,77	73,29	2,98	13,56	64,73
4	0,83	3,76	77,05	2,71	12,32	77,05
5	0,81	3,70	80,74			
6	0,60	2,74	83,48			
7	0,45	2,06	85,54			
8	0,41	1,87	87,41			
9	0,39	1,78	89,20			
10	0,35	1,58	90,78			
11	0,28	1,25	92,03			
12	0,26	1,17	93,19			
13	0,25	1,13	94,33			
14	0,23	1,06	95,39			
15	0,21	0,95	96,34			
16	0,18	0,81	97,15			
17	0,15	0,66	97,81			
18	0,12	0,54	98,36			
19	0,11	0,52	98,87			
20	0,10	0,46	99,33			
21	0,08	0,35	99,68			
22	0,07	0,32	100,00			

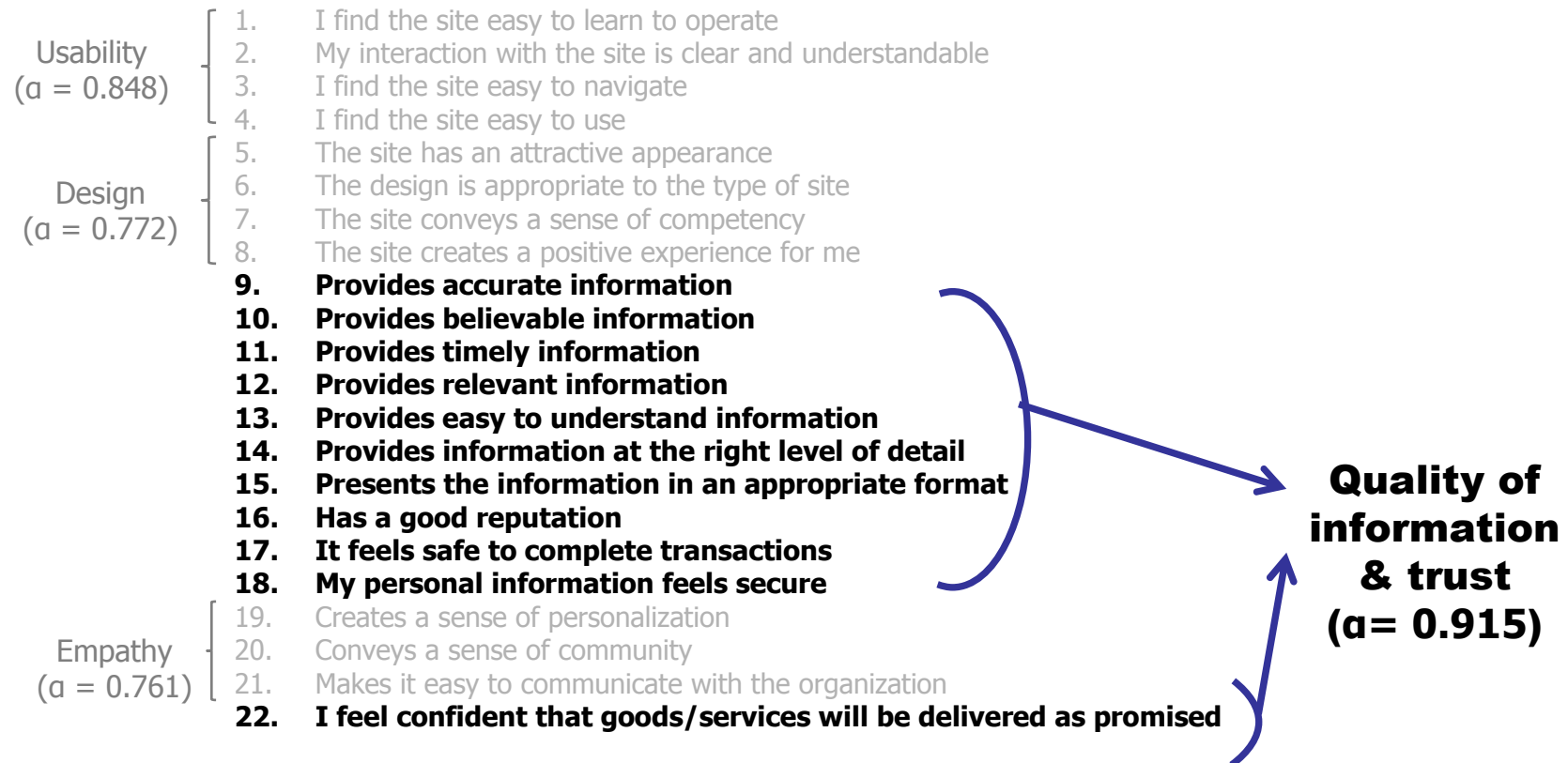


ULAKBIM-Factor Analysis

Rotated Component Matrix

	Question#	Questions	Groups			
			1	2	3	4
<i>Quality of Information & Trust</i>	11	Provides timely information	0,827			
	9	Provides accurate information	0,779			
	10	Provides believable information	0,776			
	12	Provides relevant information	0,771			
	16	Has a good reputation	0,756			
	14	Provides information at the right level of detail	0,746			
	17	It feels safe to complete transactions	0,740			
	15	Presents the information in an appropriate format	0,737			
	13	Provides easy to understand information	0,700			
	22	I feel confident that goods/services will be delivered as promised	0,685			
	18	My personal information feels secure	0,581			
<i>Usability</i>	3	I find the site easy to navigate		0,840		
	1	I find the site easy to learn to operate		0,791		
	4	I find the site easy to use		0,774		
	2	My interaction with the site is clear and understandable		0,725		
<i>Design</i>	5	The site has an attractive appearance			0,783	
	7	The site conveys a sense of competency			0,737	
	8	The site creates a positive experience for me			0,648	
	6	The design is appropriate to the type of site			0,593	
<i>Empathy</i>	19	Creates a sense of personalization				0,797
	20	Conveys a sense of community				0,653
	21	Makes it easy to communicate with the organization				0,555

ULAKBIM-Service Quality Dimensions





ULAKBIM-Mean Scores

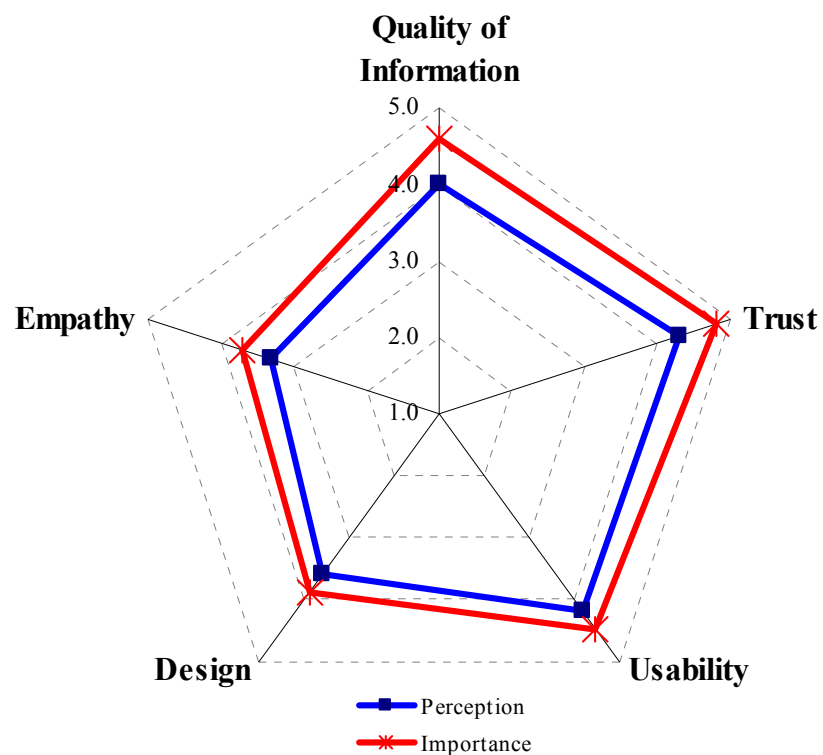
Mean scores of factors (ULAKBIM)

Dimensions	Perception \bar{X}	Importance \bar{X}
<u>Quality of Information & Trust</u>	4.0	4.7
<u>Usability</u>	3.6	4.5
Design	3.3	3.9
Empathy	3.5	4.0
	$\bar{X}: 3.6$	$\bar{X}: 4.3$

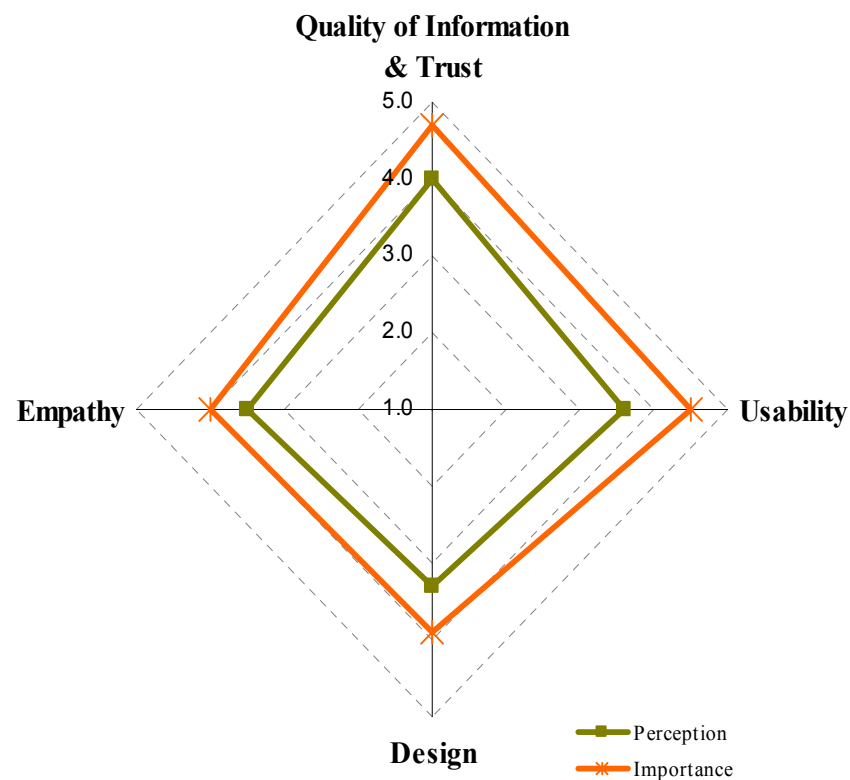


Comparison of factors

Idefix



ULAKBIM





Conclusions-1

- o Similar dimensions for two different web sites:

Idefix

Quality of Information
Trust
Usability
Design
Empathy

ULAKBIM

Quality of Information & Trust
Usability
Design
Empathy



Conclusions-2

- o Most important issues for the users of both sites:
 - o Quality of Information
 - o Trust



Conclusions-3

- o The perceived usability and design principles were not taken into consideration in designing the non-profit web site.
- o Users of both sites are less satisfied with the dimensions:
 - o Quality of Information
 - o Trust
 - o Usability



Conclusions-4

- o Web users require “good quality information”.
- o Web users tend to think the web sites are information resources.
- o Differences among the web sites may disappear in the near future.



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