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User – Acceptance Aspects and Standards of E-Commerce Websites

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E-Commerce

- The ability to trade products or facilitate trading of products using computers networks .

Introduction

- E-Commerce is becoming one of the exponentially growing computer science phenomenon.
- Customers can shop from the comfort of their homes .
- Retailers can access a wider market , distant geographical areas and customers from different cultures.

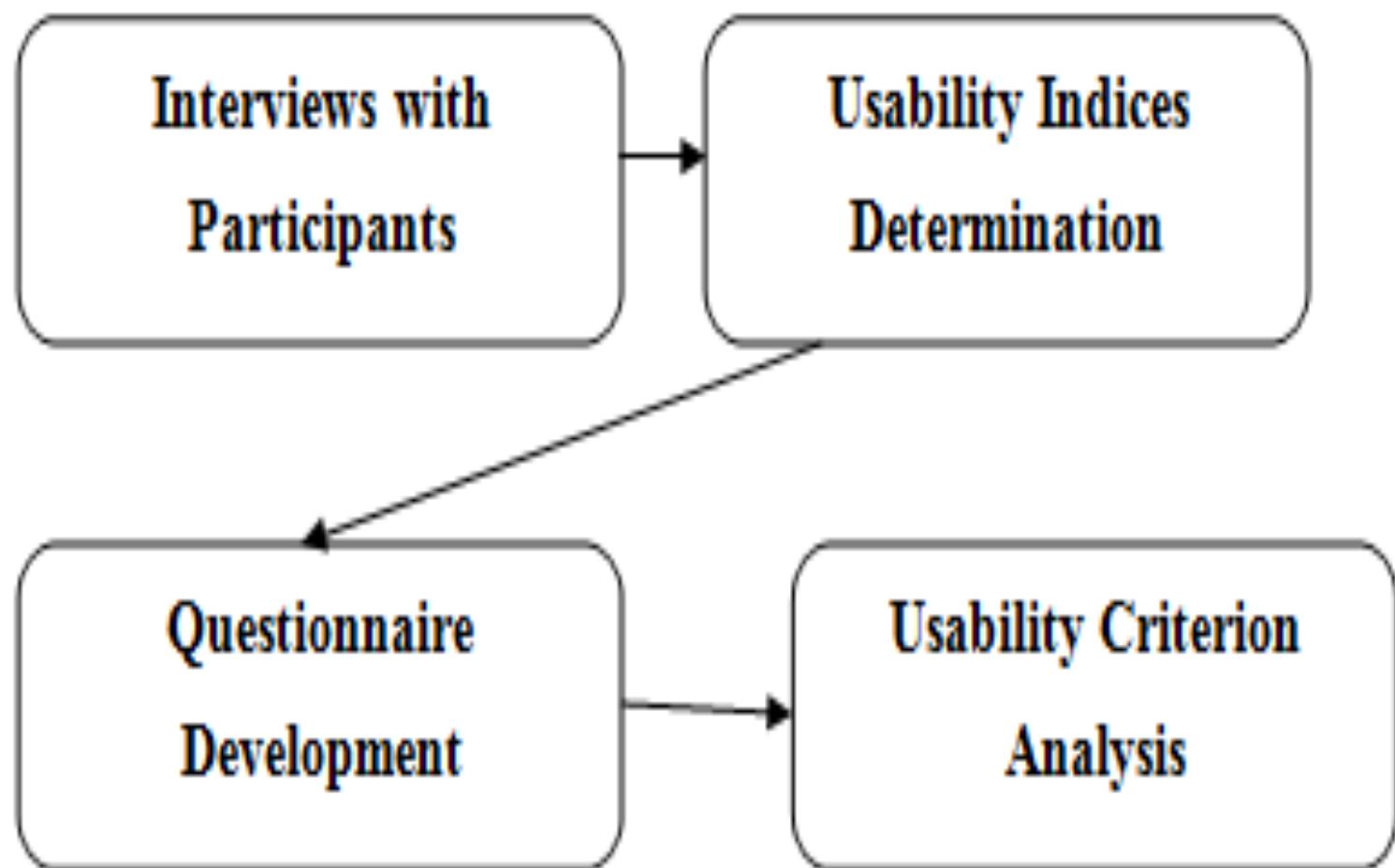
Research Problem

- A vital aspect of success of e-commerce relies on usability of e-commerce software .
- Two most common modes are websites and mobile applications .
- Research has concluded if e-commerce websites are difficult to use , customers will not use them and eventually whole businesses fail.
- Extensive research is carried out all over the world to improve usability of e-commerce websites.

- Our research problem is usability study of one of the most common e-commerce websites of Pakistan.

Research Methodology

- Twenty four participants were interviewed to determine factors affecting the usability of one of the most popular e-commerce site in Pakistan.
- Based on these interviews, a questionnaire was developed Participants were asked to fill the questionnaire and rate usability criterion with 1 as not useful and 5 as strongly useful. Results and analysis were determined on the result of the responses on the questionnaire.



- Participants' Profiles

Id	Gender	Age	Education	Occupation	Web Time / Week	Purchased A Product Online?
1	M	41	BA	Store keeper	4	No
2	M	36	BSc	UMT Café Owner	2	No
3	M	22	BS Electrical Engineering	Student at UMT	28	Yes
4	M	21	BS Textile Design	Student at UMT	23	Yes
5	M	39	FA	Photocopy Shop Owner	2	No
6	F	24	MCS	School Teacher	24	Yes
7	F	25	MCS	School Teacher	25	No
8	F	23	MCS	School Teacher	26	Yes
9	M	26	ICS	Computer Operator	10	Yes

10	M	32	Matriculation	Office Boy	3	No
11	M	37	PhD CS	Faculty Member at UMT	25	Yes
12	M	43	PhD Chemistry	Faculty Member at UMT	16	Yes
13	M	19	BS Literature	Student at UMT	12	Yes
14	M	34	Matriculation	Shopkeeper	3	No
15	M	39	Matriculation	Shopkeeper	3	No
16	M	21	BS Linguistics	Student at UMT	2	No
17	F	22	BS Chemistry	Student at UMT	15	Yes
18	F	22	BS Environmental Science	Student at UMT	21	Yes

19	F	43	BA	Housewife	4	No
20	M	21	BBA	Student at UMT	23	Yes
21	M	35	MBA	Faculty Member at UMT	12	Yes
22	M	56	PhD Management	Faculty Member at UMT	10	Yes
23	M	56	BA	Housewife	10	Yes
24	M	38	Matriculation	Office Boy at UMT	4	No
25	F	43	PhD Education	Faculty Member at UMT	6	No
26	F	37	BA	Domestic Boutique Owner	3	No
27	F	46	FA	Housewife	2	No

Initial Interview

- The participants were asked to elaborate the site on User Interface Design principles (Johnson, 2013) given below. Participants' reviews were noted.
- User actions should be predictable and reversible.
- Usability should not be compromised for function.
- User should get the feeling of progress and achievement.
- User should be in control. Assistance should be provided in proactive circumstances.
- All user interface objects should be accessible at all times.
- User Interface objects should be visible and intuitive.
- Users should be allowed to customize.

Usability Determination Questionnaire

- Based on the interviews a questionnaire was developed. Thirteen indices were determined to judge usability of e-commerce websites. Participants were asked to evaluate them on a scale of 1 to 5.

Factor	Index	Comprehensive Question
Usability	Website Interface Layout	My will to shop on a website is affected by attractiveness of its interface.
Usability	Website Search Effectiveness	I like shopping websites where I can easily search for my desired product.
Usability	Ease of Website Navigation	I prefer to shop at websites which I can browse comfortably.
Usability	Website Error Frequency	If a website gives error, it dissuades me to come back to that shop again.
Psychological Aspects	Merchant Credibility	I won't shop at a website, if its merchant doesn't have good repute.
Psychological Aspects	Website Popularity	The popularity of a website affects my willingness to shop there.

Psychological Aspects	Website Security	I prefer to shop at websites that keep my personal details secure
Psychological Aspects	Prices	I prefer to shop at sites that have low prices.
Psychological Aspects	Deals and Promotion	I get influenced by deals and sales when I shop on the Internet.
Website Content	Comprehensiveness of Catalog	I prefer to shop at a site that has a wider variety of products.
Website Content	Information Quality	I prefer to shop at sites that give extensive and detailed information about the products they sell.
Website Content	Information Updating	I prefer to shop at sites that have the latest items in stock.
Website Content	Customer Feedback	My willingness to shop at a site is determined by the feedback given by its customers.

Qualitative Results

- Following are the results of responses given from participants asked to judge one of the renowned e-commerce website of the country. Participants were asked to judge the websites on the basis of User Interface Design principles.
- **Simplicity:** The simplicity of user interface plays an imperative role in website popularity. Participant 1, 5, 19, 24, and 27 specifically appreciated the ease of use of the interface of the website.

- **Effective categorization:** There was a mixed response about categorization of items and merchandize on the website.
- Participant 26 had been running a clothes business for a long time. She was impressed by the categorization of women's and men's clothes. She could easily reach different categories of clothing.

- **Help for learning about products:** As customers do not get to touch and feel items in e-shopping, it is imperative that websites give comprehensive information about the product to satisfy the customers.
- Participant 4 remarked that there should be more detailed information about clothes. He demanded that garment fabrics and sizes should be mentioned for readymade garments

- **Personalizing product lists:** It is imperative that e-commerce sites allow customers to choose merchandise on the basis of price range, brand name, sizing, and other categories. Customers are facilitated if they are only shown products according to their requirements.
- Participant 21 said he liked how he could view sportswear available within his price range.

- **Support via product pictures:** Customers found it helpful if site provided pictures of the merchandise.
- Participants 6,7,8,9, 16, 17, 18 and 19 were unsatisfied by the pictures of female clothes. They remarked they needed to get a comprehensive look to feel confident about buying some outfit or clothes online. The pictures on the site were not convincing enough hence they did not buy.

- **Clarity of buttons and links:** Clarity of buttons and links has an imperative role in customers' comfort with the site.
- Participants 3, 5, 14 and 15 had difficulty in learning the difference between Order button and Buy button. They had difficulty in learning that “ Buy “ button added the item to their cart and “Order” took them to give their details so all items in their cart could be considered as one order.

- **Clarity of ordering process:** The simplicity of ordering process increases the popularity of e-commerce. At this site, on completing an order, the site sent a link to email address which had to be clicked for confirming order.
- Participants 1, 2, 5, 10, 14,15,19,24, and 27 did not have an email address. They had to make an email address just for order confirmation. They preferred they would shop more readily if they site would call them to confirm their order, instead of requiring to click an email link.

- **Saving items in the shopping cart:** On this site there is a button that had the picture of a shopping cart. If clicked the item is added to shopping cart.
- Participants 12, 13, 16 and 18 thought that that button meant final checking out. They were unclear about how to add that item to the cart and continuing shopping. They demanded that there should be mechanisms in the interface to clearly differentiate adding to cart and final order placing.

- **Display of running total:** Participants had to keep clicking on the cart to check their total bill while browsing the site.
- Participants 2,4,6,7 and 8 demanded that they would prefer if their total bill was displayed somewhere on the side while they shop. That would help them instantly decide if they can afford to buy an item or not. They found that clicking on the cart icon and navigating to the cart page was a tedious task and distracted them.

- **Clarity to continue shopping:** There is a cart button on the site. Participants were explained that to order an item they had to click it and it would be placed in their shopping cart. They could buy more items however they could only finish the order after they clicked order button. A lot of participants were confused about the concepts of adding to cart and ordering now.

- **Reversibility of actions:** If an item was accidentally added to a cart, the remove button was clearly visible and participants easily learnt how to remove an item from their cart.
- Participant 5 had rarely used Internet before. He repeatedly added items to his cart while he was learning to use the site. However he readily learnt how to remove them due to clarity of remove button.

Quantitative Results

Index	Mean	Median
Website Interface Layout	4.20	4
Website Search Effectiveness	4.10	4
Ease of Website Navigation	3.90	3
Website Error Frequency	3.5	3
Merchant Credibility	4.30	4
Website Popularity	4.25	4
Website Security	3.65	3
Prices	4.20	4
Deals and Promotion	4.10	4
Comprehensiveness of Catalog	4.10	4
Information Quality	3.25	3
Information Updating	3.45	3
Customer Feedback	4.15	4

Conclusion

- This research study was carried out to determine what factors contribute to user – acceptance of e-commerce websites in Pakistan. It was deduced that people prefer to shop online on websites that have credibility. They don't like to take risks for the fear of losing money or fraud. Merchant credibility and ease of use of website interface are imperative aspects of user – acceptance of e-commerce websites. Deals and promotions, low prices and ease of searching the required product have found to encourage user-acceptance in e-commerce. The comprehensiveness of products' catalogues, and realistic nature of information given on websites, positively influences people to shop at e-commerce sites. It is deduced that user – friendliness of website interface is the most important aspect of user – acceptance in e-commerce hence extensive attention should be paid to usability design of websites for e –commerce.

References

- Dhir, A., Chen, S., & Nieminen, M. (2015). Predicting adolescent Internet addiction: The roles of demographics, technology accessibility, unwillingness to communicate and sought Internet gratifications. *Computers in Human Behavior*, 51, 24-33.
- Ingham, J., Cadieux, J., & Berrada, A. M. (2015). e-Shopping acceptance: A qualitative and meta-analytic review. *Information & Management*, 52(1), 44-60.
- Johnson, J. (2013). *Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Guidelines*. Elsevier.
- Konradt, U., Wandke, H., Balazs, B., & Christophersen, T. (2003). Usability in online shops: scale construction, validation and the influence on the buyers' intention and decision. *Behaviour & Information Technology*, 22(3), 165-174
- Lee, S., & Koubek, R. J. (2010). The effects of usability and web design attributes on user preference for e-commerce web sites. *Computers in Industry*, 61(4), 329-341.
- Liao, Z., & Cheung, M. T. (2001). Internet-based e-shopping and consumer attitudes: an empirical study. *Information & Management*, 38(5), 299-306.
- Olivero, N., & Lunt, P. (2004). Privacy versus willingness to disclose in e-commerce exchanges: The effect of risk awareness on the relative role of trust and control. *Journal of Economic Psychology*, 25(2), 243-262.
- Schafer, J. B., Konstan, J. A., & Riedl, J. (2001). E-commerce recommendation applications. In *Applications of Data Mining to Electronic Commerce* (pp. 115-153). Springer US.
- Seyal, A. H., Awais, M. M., Shamail, S., & Abbas, A. (2004). Determinants of electronic commerce in Pakistan: Preliminary evidence from small and medium enterprises. *Electronic Markets*, 14(4), 372-387.
- Srinivasan, S. S., Anderson, R., & Ponnavaolu, K. (2002). Customer loyalty in e-commerce: an exploration of its antecedents and consequences. *Journal of Retailing*, 78(1), 41-50.
- Tanjung, F. A., & Dhewanto, W. (2014). Formulation of E-Commerce Website Development Plan Using Multidimensional Approach for Web Evaluation. *Procedia-Social and Behavioral Sciences*, 115, 361-372.
- Tilson, R., Dong, J., Martin, S., & Kieke, E. (1998, June). Factors and principles affecting the usability of four e-commerce sites. In *Proceedings of human factors and the web*.
- White, L., Almezen, H., & Alzeidi, N. (2001, November). User-based testing of GUI sequences and their interactions. In *Software Reliability Engineering, 2001. ISSRE 2001. Proceedings. 12th International Symposium on* (pp. 54-63). IEEE.
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