

# EXTENT OF INFLUENCE OF REGIONAL PREFERENCES ON THE DESIGN OF GUI ELEMENTS IN NEWS PAPERS WEBSITES: AN EXPERIMENTAL STUDY ON USER'S PERCEPTIONS ON VISUAL LAYOUT

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In multicultural societies such as India, users can be classified into more than one type of category simultaneously such as English news paper readers, regional language news readers, national language speakers, fourth language knower's' etc. The users seem to move from one category to another effortlessly. Along with the content the users are also subjected to differences in visual objects, their grid layouts, colors etc. Designers on the other hand, tend to use — for laying out the content — the rigid grid style characteristic of designs originating in the west.

However, if local and regional print media in India is analyzed one does find grids and graphic elements used by them embedded that do not conform fully to the rigid western grids.

In order to find out the extent of such regional variations and their influence on the preferences of users a study involving more than 40 users has been conducted and its results reported in this paper. The subjects were asked to select an object from among a group of visual elements placed on the webpage that exhibited the regional look and feel. Their preferences were recorded. In the next part of the experiment the same subjects were asked to choose from a layout that was a strictly western based grid. The results indicate that amongst the subjects who had some connection and exposure to design preferred western type of rigid grids where as those without any connection to design had no strong preferences and also exhibited higher acceptance of regional elements.

The results of the present research indicate that the perceived usability in terms of preferences increases when the website/print media visually exhibits the native/regional language nuances of the user. In the case of users that have more exposure to western based content layouts it possibly creates a cultural distance. The reported results can be useful to Usability designers to become aware of the need more sensitivity to regional influences amongst their users.

*Keywords:* Design guidelines, culture, graphic user interface, visual layout, newspaper website.

## 1. INTRODUCTION

In multicultural societies such as India, users can be classified into more than one type of categories simultaneously. For instance Indian users reading a website of a news paper in English can be categorized as English literate category while they may also belong to a localized regional grouping with its own language and lifestyles. The users seem to be not bothered about belonging to such multiple categories and seem to move from one category role to another effortlessly. On the other hand Graphic designers and Usability engineers involved in visual layout of content often overlook this fact and base their layout concepts inspired from the western graphic design styles. For instance the strict

geometric grid and minimalistic design elements used both in print and websites that originated in the west is presumed by designers as a defacto standard with the assumption that it works well across regional tastes and preferences. However, if local and regional print media in India is analyzed one does find the use of grids and graphic elements that do not conform to the rigid western grids.

One of the problem with the current practices of laying out websites is that they are merely restricted to translating text from one language to another rather than changing the website's structure, keeping in mind the regional preferences which are more widely accepted by that audience [1, 2]. According to Ji, Zhang, and Nisbett [3], differences found between participants from different countries, speaking different languages, are generally attributed to cultural backgrounds and culture, through language, influences people's thinking. It can also be said that the problem in the multilingual usability context is rooted in culturally specific taste differences of the users [4, 5]. Researchers have stated that using such objects figuratively that can be identified with easily by the regional users, gives a far reaching effect of the experience than using standardized solution layout for all [6]. In broad terms it is posited in this paper that regional users have different expectations which are culturally based rather than being solely language based This paper focuses on the posit stated above and discuss the extent of the effect produced by such considerations.

## 2. DESCRIPTION OF NEWSPAPER WEBSITES

In this paper a newspaper website is one which exhibits the following characteristics,

- They are written in one language (Indian Regional or English).
- The upfront data that comes is NOT the e-paper version of the paper, which on the other hand may or may not be present in the website.
- They are also circulated in print based format except that the layout is different.
- The main aim of the websites is to deploy news.

## 3. DEFINITION OF THE PROBLEM OF TRANSLATION AND REGIONAL CUSTOMIZATION

The leading cause of trouble, if we can all it that way, is the difference in culture [7]. There are objects or customs in a culture which may have no parallel in a different culture and translation of language does not solve all the problems [8]. Using cultural metaphors give us a better understanding of the language as perceived by the target user segment [9, 10]. The phrases which are used have no literal meaning, but have a figurative meaning, and the pattern of the use of phrases in each language and culture is different [4, 11]. There is also a need to mention the use of different dialects of the same language which makes different sense. Many different customs maybe okay with one culture and vile in the other, for example in the case of Indonesia [12]. There is a context specific reference to language which is defined by culture [13]. Simple usage like mentioning dates has no standard so it can be implied that it can mean differently only if not specified.

As in the case of language visuals too have a semantic bias that is likely to matter in the overall experience of a multicultural user. It is known that the use of color, for example, has effects on user satisfaction, loyalty and trust [14]. When such a color is emphasized in a site it is likely to affect more those users to whom that particular color has additional cultural connotation.

In this context, it is evident that there is a definite interpolation among various cultures and it also reflects the Westernization of each culture individually, so using language or visual objects which reflect this aspect can very well need to be taken into account [15]. In this study we are not diversifying or differentiating cultures and languages from each other but we are asking how to make it easier for a user to perceive the data which is directed to him /her. In order to find out the extent of such regional variations and their influence on the preferences of users a study involving more than 40 users was conducted.

### 4. THE EXPERIMENT

The experiment consisted of two phases namely — Phase 1: Evaluation of the Newspaper Websites and Phase 2: Evaluation of magazine covers.

#### 4.1. Subject profile

40 subjects, all students from Indian Institute of Technology Guwahati, 8 each from 5 different cultural backgrounds were chosen for qualitative analysis and were given corresponding newspaper websites in their native languages. They were familiar with media in three languages namely English, native — mother tongue and regional local language of the place they were currently staying.

The subjects had an average 8–10 hours of internet usage per week. The majority of test subjects were between 19–26 years of age and with 42.5 % females and 57.5% males.

#### 4.2. Selection of Newspaper Websites

- The selection of news paper websites was done in accordance with the trends of website traffic of the particular language.
- The newspaper website had both e-paper and the categorized news versions.

#### 4.3. Selection of magazine covers

The magazine covers were selected randomly from a pool of covers having the previous editions of the same magazine. The main aspects being tested were visual objects, their grid layouts and colors. The background images appearing on the covers for example: Local or Regional based film actresses & models are merely representative of the regional content and other background images can represent the same without containing models or actresses images. Also, it is assumed that they will not be viewed independent of the whole.

#### 4.4. Evaluation of newspaper websites

The users were asked to navigate through the regional language website (Figure 2/ Figure 3/Figure 4/ Figure 5) for 10 to 15 minutes, where they could check out links, ads, read news etc. They could perform any activity which was on the website. At the completion of their navigation time they were given a questionnaire (4.4.1) consisting of questions based on the navigation and usability of the site. They were asked to point out issues they did not find easy to work within the website. These ambiguities are shown in Table 1.



Figure 1. English Website.



Figure 2. Hindi Website.



Figure 3. Telugu Website.



Figure 4. Assamese Website.



Figure 5. Marathi Website.

They were again asked the same set of questions after the English language news website (Figure 1) was shown to them. The result of this questionnaire is also the Table 1. A comparative analysis when performed was expected to indicate the shift in experience from a standard layout based website to a regional website.

Table 1. Result of Questionnaire 1.

Language of the News Paper	English	Hindi	Telugu	Assamese	Marathi
Difficulty with ads	No7/8	No7/8	No5/8	No6/8	No5/8
Comfortable with flashing news	Yes6/8	Yes5/8	Yes6/8	Yes8/8	Yes6/8
Comfortable with dynamic bullets in text field	Yes5/8	Yes7/8	Yes6/8	No6/8	not applicable
Bothered with flash ads	Yes5/8	No6/8	Yes6/8	Yes6/8	No5/8
Difficulty with categorization	No5/8	Yes7/8	Yes5/8	No6/8	none
Want date of publishing of news	Yes8/8	Yes8/8	Yes8/8	Yes7/8	Yes8/8
Want to see video of the news being highlighted	Yes8/8	Yes6/8	Yes7/8	Yes6/8	Yes5/8
Do you comment on the news page	No6/8	No6/8	No7/8	Yes5/8	No6/8
E-paper (e) or Categorized (c) news	6-c	7-c	6-e	6-c	6-c
How do you like Images to be?	Large-3 fine-3 small-2	Large-6 fine-3	large-1 fine-2 small-5	Large-4 fine-3 small-1	small-6 fine-2
Point every ambiguity while navigating through the site (Expressed as number of ambiguities encountered)	No7/8	No6/8	none	none	none

4.4.1. Questionnaire 1:

- (Q1) Do you face any difficulty with advertisement?
- (Q2) Are you comfortable with flashing news?
- (Q3) Are you comfortable with dynamic bullets in text field?
- (Q4) Are you bothered with flash ads?
- (Q5) Did you face any difficulty with categorization?
- (Q6) Do you want the date of publishing of the news to be cited with the news?
- (Q7) Do you want to see videos of the news being highlighted?
- (Q8) Do you comment on the news page?
- (Q9) What do you like more, E-paper (e) or Categorized (c) news?
- (Q10) How do you like Images to be (as in large/small and the quality of image)?
- (Q11) Point every ambiguity while navigating through the site (Expressed as number of ambiguities encountered)?

4.5. Phase 2: Evaluation of magazine cover pages

The users were given the magazine covers originating from different cultural and geographical regions in India (Hindi, Telugu, Assamese, Marathi) along with a questionnaire. (Listed under 4.5). Magazine covers used in the experiment are shown in Figs. 6 to 10. Covers are shown in gray-scale here though they were originally in color. Subjects were asked to fill the questionnaire (4.5.1) using two magazine covers Figure 6 and one of Figure 7, Figure 8, Figure 9, Figure 10 depending upon their cultural background.

4.5.1. Questionnaire 2:

- (Q1) How much Indian is cover (Figure 7/Figure 8/Figure 9/Figure 10) in terms of looks?
- (Q2) Identify the visual elements such as Typography, color, symbols, image size of the visuals used in the cover etc that in your opinion make cover (Figure 7/Figure 8/Figure 9/Figure 10) very Indian.
- (Q3) If I were to state that cover (Figure 7/Figure 8/Figure 9/Figure 10) is laid out by a European (Traditional) Graphic designer, how will you argue that it is not?
- (Q4) Given the rigid orderly grid of a cover shown in (Figure 6) do a comparative study by pointing out visual differences between cover (Figure 6) and cover (Figure 7/Figure 8/Figure 9/Figure 10).
- (Q5) Which of the cover (Figure 6/Figure 7/Figure 8/Figure 9/Figure 10) you like in terms of being visually satisfied?
- (Q6) Do you think the color of cover (Figure 7/Figure 8/Figure 9/Figure 10) is too loud and bright?

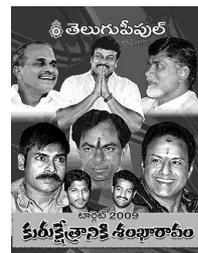


Figure 6. English Magazine Cover. Figure 7. Hindi Magazine Cover. Figure 8. Telugu Magazine Cover.



Figure 9. Assamese Magazine Cover. Figure 10. Marathi Magazine Cover.

## 5. RESULT

### 5.1. Result of Questionnaire 1 — Websites

The following observations emerge.

- In the regional, especially in Telugu and Assamese, newspaper websites advertisements are not well organized. Pages look cluttered as there is no apparent use of grid to layout the page content [16].
- Flashing content and bullets having dynamic color changes which distract the user [17].
- Animated advertisements in websites may hinder the user's concentration on main content of the site i.e. news [18].
- Regional websites have multiple layering of content which affects the usability. In regional newspaper websites the organization of advertisements, flashing news, and bullets in the text fields are not seen as disturbing issues by themselves by majority of the subjects [19].
- As seen from the results preference of the size of image, e-paper or categorized news, commenting on the news page are more culturally influenced (seen in the Table 1) [20].

### 5.2. Summary of Results of the Questionnaire 2: Printed magazines

- Regardless of their language or regional roots subjects agreed that cover (Figure 7/ Figure 8/ Figure 9/ Figure 10) is very much 'Indian' in terms of look and feel.
- The features of the lady in the cover page and her attire, the colors and prints of her costume, the fonts of the writings, contrast color combination etc. make the cover page (Figure 7/ Figure 9/ Figure 10) very much 'Indian'.
- Pictures of politicians of Andhra Pradesh, their postures, looks, etc make cover (Figure 8) much related to their region. However the characteristic flowing typography expressed almost like calligraphy on the language magazines were pointed out to be distinctly Indian in flavor and use.
- English magazine Cover (Figure 6) though an Indian magazine tends to have a grid structure that is associated with western graphics. It is balanced in terms of color, space and saturation. Type looks formal and machine cut, clear and proportionate.
- In the case of Hindi magazine Cover (Figure 7); 5 out of 8 people liked the Hindi magazine cover in terms of being visually good and felt satisfied.
- In the case of Telugu cover (Figure 8): 6 out of 8 people rated the Telugu magazine cover in terms of being visually satisfactory.
- In the case of Assamese cover (Figure 9): 5 out of 8 people rated the Assamese magazine cover in terms of being visually satisfactory.
- In case of the Marathi cover (Figure 10): 4 out of 8 people rated the Marathi magazine cover in terms of being visually satisfactory. Based on [21].
- Some specific comments were also made for the Indian covers (Figure 7/ Figure 8/ Figure 9/ Figure 10) such as "I don't think that the color of these regional language magazines is too loud or bright."

## 6. DISCUSSION

### 6.1. From the first experiment

It was observed that though regional Telugu and Assamese based websites would have been rated lower than English and Hindi when evaluated in depth from the usability point of view — majority of the users seem to be not bothered about such usability issues. Another example was the Hindi newspaper web site wherein subjects reported that they did face problems with the categorization of the news and content but they continued preferring the overall look and feel of the site.

Our analysis revealed a common pattern underlying culturally determined usability problems, the explanation of the results show that even though all the usability heuristics are not followed by the regional websites it seems not to bother the users, as they have learnt to ignore them or have accepted their manner of configuration as ‘Indian’.

### 6.2. From the second experiment

The elements of graphics namely color, typography, layout, background image in the magazines contribute to their regional flavor. Even when subjects found the color to be too loud and bright they conceded it as relevant to the context. Loud colours free flowing typography while acceptable in a regional magazine may not probably be acceptable in an ‘English’ language version of the same magazine. Subjects rationalized that the designs of the regional language magazines expressed, rather well, the flavor of the local politics, customs and language of the regions, ignoring low intensity usability irritants such as poor alignment, non adherence to rigid grid layouts, loud colours, disproportionate typography etc.

## 7. CONCLUSION

It is observed that ‘perforation’ of different visual cultural cues and graphic elements often happens as is evident in the English magazine cover design which is very much Indian but follows the rigid western grid. Degrees of such ‘perforations’ is also evident in the Hindi magazine cover but is absent in the Telugu cover. It was argued that such perforations, far from being an aberration in graphic designing, gives the designer control over generalization of the content even though the interpretation of the same objects/visual cues in different cultures may be different. The elements of a newspaper website, like the grids, layout, advertisements, color etc needs to be sensitive to the user’s multicultural background. The authors prefer to use the term cultural perforations instead of cultural blending as perforations retain the original characteristic. The challenge is how to blend without losing the cultural diversity of the elements and yet arrive at a pan layout configuration for a multicultural website.

A study by Zahedi *et al.* [22] reported some informative examples of language use for the purpose of fulfilling certain cultural expectations within the context of a website presentation. The result in this short study indicate that utilizing Zahedi *et al.*’s inferences, designers working in multicultural context can explore embedding through ‘perforations’ local cultural nuances and tastes within a larger universal layout of a website catering to a multicultural user group without having necessarily to risk violating usability principles.

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