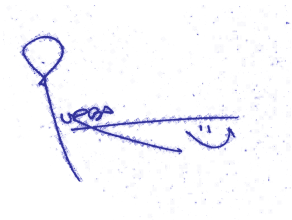




Critical analysis of the Indian currency design from the perspective of visually impaired

APPROVAL

The project titled '**Critical analysis of the Indian currency design from the perspective of visually impaired**' by Prem Sonar of M. Des Communication Design 2017-19 is approved as a partial fulfilment of requirement for DRS M. Des (Communication Design) at IDC School of Design, IIT Bombay.



Project Guide:

Abstract

Observation and research of visually impaired dealing with exchange of banknotes with mixture of old and new designs. It also includes their habits and behaviour as well as tricks and tweaks for identification of denomination. Paper portrays current situation of visually challenged people while exchanging currency, analysis of new design of the currency (Visual+Product), it's usability and utility considering amount and type of population we have.

Introduction

India is the home of blind people. It has the largest number of blind in the world. India currently has around 12 million blind people against 39 million globally.

Source: 27 March 2017

<https://www.hindustantimes.com/india-news/india-to-change-definition-of-blindness-reduce-number-of-blind-by-4-million/story-HxHKeH3XpfPBEtSr2moerO.html>

Empathising with these people while designing new currency is crucial but, we, as a developing country, and with economic constraints has to deal with issue of the base cost of producing and distributing the currency. In November 2016, new currency banknotes were launched in India. With this abrupt change in sizes of the banknotes and unrecognizable tactile marks realised that it may create a problem in identifying the denominations.



This inspired us to study how visually impaired person manages his/her everyday transactions with currency in circulation.

Considering this as a constraint, how these people were managing transaction and exchanging of banknotes was the observational part of the research.

Importance of currency in any nation.

Currency, specifically denotes money in exchange form in any nation. Currency is one of the visual identities of the nation.

Despite the increasing use of electronic payments, currency retains an important role in the payment system of every country. Currency gives the citizens a tangible symbol of their national identity. Banknotes play an important psychological as well as a functional role.

They underpin national pride and sovereignty and reinforce cultural tradition and identity.

Source:

<http://www.cashrepository.com/2018/01/cash-imparts-a-sense-of-national-pride/>

Study Design

- A. Aim of the study: To understand how visually impaired identify and deal with the banknotes in circulation in India.
- B. Methodology: Two methods use for the study are Semi-structured interviews and observations. Semi-structured interviews use interview guides but allow flexibility in the order of questions to facilitate a natural flow of interaction and add follow-up questions to get a better understanding of respondent's view. The guides allow information from different interviews to be comparable (Guthrie 2012).

Participation was voluntary and no monetary compensation was provided. The basic flow of inquiry was in the manner of recounting experiences which followed the structure of nurturing (**warm-up**) where I introduced about me and purpose of the study which helped creating a rapport. Then asking generic and demographic information of participants. Structure was then followed by energizing (**area of discourse**) where I discussed about occupation, frequency and mode of cash exchanges **depending on situations**. Main body (**core content of the interview**) of the interview was main task, which was classification and identification of the currency banknotes followed with discussion and current issues with currency design. Closing was done by discussing learning from participants and confirming doubts and

thanking. **(summarizing)** (usabilitynet n.d.). The participants were free to discontinue the interaction at any time or to decline from sharing any information.

The interview responses were recorded and transcribed. The interviews were in Marathi (spoken language of Mumbai region). Thus these had to be translated in English by the researchers for further analysis.

Observation was another method that was employed in our study. It can help researcher put together a complete picture of a particular event. It is an act of noting a phenomenon, often with an instrument and recording it for analysis purpose (Crouch and Pearce 2012). It is more capable of capturing the complexities of events and experiences than other approaches like interview (Crouch and Pearce 2012). Observation allows researcher to get a sense of reality (O'Leary 2010).

Users were provided with all denominations of the banknotes and requested to identify its value. The task was video recorded with their consent. Video recording helped us to re-look at the collected data to enhance the understanding.

Participants:

There were total 12 participants. Out of which 3 were Females and 9 were males. Two of them, one male and one female were partial blind with 5% vision. 9 people were complete blind. Most of them were blind from early age i.e. from 2-3 years. One of participant got blind at the age of 25. The age group lies within the age-group of 35-60 years. 5 participants were employees of different banks or government offices. 2 of them were small vendors. One who was blind at the age of 25 runs an organisation which helps blinds. Another one was musician, does live concert and music teacher. One female user was a housewife. We also interviewed one blind school teacher with normal vision.

Apart from the interviews a small group interaction with identification experiment was conducted at a blind school. The group consisted of 12 participants, we had interaction with 5 blind students, 2 male and 3 females of 16-17 year.

Findings

FINIDNGS	USER 1 Mrs. Sable	USER 2 Mr. Sable	USER 3 Kiran	USER 4 Dhananjay N	USER 5 Mazhar Shaikh	USER 6 Sheetal Gaikwad	USER 7 Manish	USER 8 Manish's Wife	USER 9 Yusuf Shaikh	USER 10 Hemant Patil	USER 11 Swapnil Waghmare	USER 12 Tayade Sir	TOTAL
Person is Blind/ partial blind/ normal vision.	Blind	Blind	Blind	P Blind	Blind	P Blind	Blind	Blind	Blind	Blind	Blind	Normal	
First answer is 'NO' or 'CONFUSING' when asked if user can identify new banknotes.	1	1	1	1	1	1	1	1	1	1	1	1	12
Person knew about 'Notex' / Signature Guide.	1		1				1	1		1	1		6
Person has tried Notex to identify new banknotes													0
Person uses mobile phone.				1					1				2
Person uses smartphone. (Touchscreen phone)	1	1	1		1	1	1	1		1	1	NA	9
Uses apps for identification. (Be my eye// Invision etc)			1				1				1		3
Aware about tactile marks given on banknote.	1	1	1	1	1	1	1	1	1	1	1	1	12
Got awareness from official government source? Any workshop had been taken for awareness?													0
Hear about tactile marks in news or newspaper	1	1	1	1	1	1	1	1	1	1	1	1	12
User can identify newly design single banknote with the help of tactile marks													0
User identifies newly design banknotes when compared with another banknotes.	1			1		1							3
Uses his hand to measure the length and identify the particular banknote. (uses fingers)	1	1	1	1	1	1	1	1	1	1	1	NA	11
Prefers digital transaction to avoid cash exchange and errors.			1				1			1	1		4
Uses sorting jugaad while keeping cash in Wallet// pant// purse.	1	1	1		1	1	1		1	1	1		9
Can read Braille.	1	1	1		1	1	1	1	1	1	1	1	11
User said can read Roam script numbers (0-9) by touch and feel but have to learn it again	1	1			1			1	1				5
User get confused between N 50_O 20 notes.	1	1	1				1		1	1	1		7
User get confused between N 50_O 20 and N100 notes	1	1			1		1		1	1			6
User get confused between O 100_N 500 notes when given together		1	1	1	1		1	1	1	1	1		9
User prefers apps for transactions			1				1			1	1		4
User easily identifies old 500 RS banknotes	1			1	1		1		1		1		6
User bluffs, deliberately says higher denomination										1			1
Avoids high value denomination while cash exchanges. Denominations such as N500 and N2000.							1		1		1		3
User can easily identify N 2000 banknote.	1		1	1	1	1	1		1		1		8
User says tactile markings on the banknotes are not helping in identification.	1	1	1	1	1	1	1	1	1	1	1	NA	11
User says intaglio printing on the banknotes are not helping in identification.	1	1	1	1	1	NA	1	1	1	1	1	NA	10
User says increment in size is not helping. (It is not that specific)	1	1	1	1	1	1	1	1	1	1	1	1	12
User can easily identify coins.	1	1	1	1	1	1	1	1	1	1	1	NA	11
User get confused between 1Rs coin and 2 Rs coin					1		1	1					3
Confusion is because of all old and new versions of coins are in the exchanges.	1	1	1	1	1	1	1	1	1	1	1		11
User says yes, when asked if he would get used to new banknotes over period of time						1			1				2
User says Plastic banknotes with braille markings on it is the best way to identify it for blinds	1	1	1	1	1	1	1	1	1	1	1	1	12
User says significant amount of size in increment is the second best bet to identify banknotes for blinds.	1	1	1	1	1	1	1	1	1	1	1	1	12
Less Size difference in length of the denominations is one of the reason that is troubling blind while identification.	1	1	1	1	1	1	1	1	1	1	1	1	12
Thinks confusion is because of there is mixture of old notes and new banknotes in the market.	1	1	1	1	1	1	1	1	1	1	1	1	12
User crosschecks denominations when exchanged with person	1	1	1	1	1	1	1	1	1	1	1	1	12

Conclusion



Size increment, which can be major visual clue for the blind is totally messed up in newly designed banknotes. It is reduced to 6 MM in increasing denomination, whereas user were quiet okay with old banknotes and its size as difference in increasing banknotes were 10MM.

(Examples Given Below)

ALL BANKNOTES (OLD + NEW)



Easy to see difficulties in sizes (Length) and denomination.



Easy to see difficulties in sizes (Width) and denomination.



Easy to see difficulties in sizes (Length) and denomination.



Easy to see difficulties in sizes (Length) and denomination.



One can identify only 2000 Rs. Banknote



Size increment, which can be major visual clue for the blind is totally messed up in newly designed banknotes. It is reduced to 6 MM in increasing denomination, whereas user were quiet okay with old banknotes and its size as difference in increasing banknotes were 10MM.



Given tactile marks on the edges of banknotes are hard to recognise as well as to get its touch and feel. It doesn't help blind to identify banknotes.



Each user has his/her own method of identification of banknotes.

Acknowledgements

I thank all users for their participation and cooperation. It helped a lot for me to study in this area which was completely unknown to me. I also thank my guide, Prof. Purba Joshi, who allowed me to take this project. I thank all of my friends and IDC family for all their support.

References

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