Culture and Context: An Empathic Study of the needs of Ethnic Consumers in the UK

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Abstract: This paper describes a fresh approach to gathering rich data from ethnic minority consumers (EMCs) to better understand the affects of variations across subgroups upon consumers. The study investigated whether one EMC group in the UK face any barriers in the take-up of products or services. Subgroups were defined as *religion* and *generations* to compare differences and similarities of views and the effect of acculturalisation. An inductive, qualitative approach used family focus groups and some interviews with a questionnaire for context. The research follows an inclusive design and empathic approach, drawing on previous cultural, marketing and design literature and current affairs. The results revealed a 1st generation subgroup face difficulties in using services and healthcare was a strong theme. This led to a new study exploring the problems and experiences with healthcare staff to determine how design may help to lower barriers.

Keywords: Ethnic minorities, cultural dimension, design, generations, religions, acculturalisation/ acculturation.

1   BACKGROUND

Ethnic minority consumers (EMCs) in the UK and the EU are accepted as being a heterogeneous group segmented by disparate cultures and religions. The proportion of EMCs within the UK's population is predicted to rise over 7% over the next two decades [1] - and their earning capacity due to improved educational qualifications [2]. Taylor *et al* [3] discuss these trends and the marketing, design and cultural literature which laid the foundation for this research, the key concepts of which are summarised below.

EMCs' spending power in the UK was predicted to reach a substantial £300bn by 2010 [4] and the rising numbers and earning capacity offer growing markets for industry. Marketeers, keen to tap this potential, suggest that doing so requires a better

understanding of how variations across ethnic subgroups affect consumer behaviour, particularly the influence of religions, generations and acculturalisation [5], i.e. the process of integration of a smaller group into a larger one. Is a different marketing approach required to attract EMCs [5, 6]? Is industry missing opportunities [6]?

Culturally-orientated design research into products and services has generated a multi-faceted body of rich information but, understandably in an age of information technology and global markets and manufacturing, the focus is predominantly on Human Computer Interaction and ethnographic studies in 'home countries', and the latter do not need to consider the influence of acculturalisation. *Cultural usability* in design in the context of EMCs residing 'abroad', has gained prominence more recently [7].

1.1   About Culture and Product and Service Design

Storey [8] states that *culture* is a dynamic, social activity which is constantly under modification, that we *create* culture through *cultural consumption*, a combination of consuming products and services and producing them - a means we use to define our lifestyles and express our identities and aspirations. Culture is, thus, intimately linked to design, for design transforms ideas into practical and attractive propositions for consumers by linking creativity with innovation [9].   Different cultures influence people's thoughts, motivations and behaviours differently, however, impacting on users' interactions with products and services [10, 11, 12] and influencing market success. Cultural variables like language, perceptions and cognition can create difficulties for some consumer subgroups [10, 11] especially when services and products are designed and delivered by people from other cultures [13]. This can compound well-known problems in *usability* when complex technologies are used in product and services
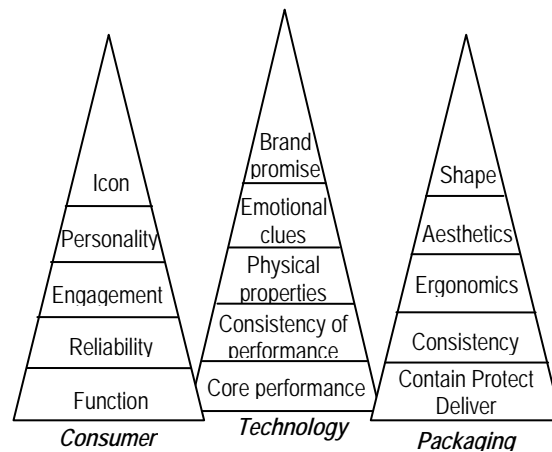

Fig.1: Maslow's *Hierarchy of Needs model* in design [16]

design and delivery [14, 15] adding to *economic* or *empowerment* barriers [15] and affecting the quality of people's lives.

Attracting and keeping consumers is a constant challenge for marketeers who collaborate with designers to produce and promote positive user experiences that appeal to both aspirations and needs. To understand human motivation, models like Maslow's *Hierarchy of Needs* are popularly used to map consumer experiences [Fig.1, 16] and to drive *the Total Product* on which is mapped all that consumers receive, from core benefits to intangibles like prestige, brand and status [17]. Such models, however, have yet to be adapted to include 'cultural dimensions'.

Some tension is also evident between the results of the cultural studies discussed and research on acculturalisation. The latter confirm that EMCs are choosing lifestyle elements based on personal preferences [18, 19], which suggests some EMC groups are

adapting well. It prompted the question whether all groups are adapting equally well and, combined with the trends, investigating whether EMCs in the UK face barriers in the take-up of products or services, offered an interesting opportunity for research.

1.2   Understanding Participants: Social and Societal Influences

In a user-centred approach, EMCs from the Indian Subcontinent who are settled in the UK, were selected as the study group and some of the key social and societal differences and influences between the two regions were compared (Table 1).

Table 1: Comparing Social and Societal Influences on EMC Participants

Indian Subcontinent	U.K.
17+ major languages/ scripts; 1 or more learned, English widely used.	1 major language/ script, used by the majority.
5 major religions, different beliefs/rituals, strong influence on many.	1 'Established Church' in a multi-faith society; moderate religious influence.
High-context society i.e. relies more on implicit, experienced-based knowledge.	*Low-context* society i.e. Relies on explicit, analytic, functional, abstract knowledge.
Emphasis on *Collective* (family; joint family). Elders usually live with family.	Emphasis on the *Individual* or immediate family. Elders like to maintain independence.
Respect: frequently ascribed to Position & Wealth (status) & elders.	Respect: usually ascribed to the Individual.
Gender segregation & arranged marriages widespread; single females mainly pressured.	Negligible segregation, marriage by individual choice.
Cultural taboos (e.g. sexual matters, mortality of elders, marrying into another religion).	Few taboo subjects or limitations on marriage choices.
Communication: Unspoken word & body language unfamiliar concepts (1st generation); sentences are often repeated for emphasis; emotion expressed often. Social courtesy: males do not give priority to females; use of *please* & *thank you* often absent.	Communication: Unspoken word, body language plays a large role; sentences are repeated only if asked for; emotion expressed infrequently. Social courtesy: males (all ages) often given priority to females; please & *thank you* are used frequently.
Children's education: paid for, not mandatory; females excluded in some communities. Learning is often repetition based.	Children's education: free at the point of delivery; mandatory for all. Learning is more application based.
Health services: Paid for, no rationing. Social Services: Little or none, family reliance.	Health & Social services: Free at the point of delivery but rationing of services is a result.

[Compilation: 5 National Government websites, 10, 11 & through personal experience]

The data indicates that this group are accustomed to living in multi-faith societies and, as literature confirms, the challenges would arise from other cultural variables like family vs. individual perspectives, cultural expectations, communication, etc. Castells [20] points out that our cultures are changing rapidly influenced by information and communication technologies (ICT). Because culture is mediated and enacted through communication, the new forms and channels of communication facilitating global flows of information are impacting on individuals and societies, transforming beliefs and cultural codes and disrupting the sequence of passing codes down the generations [20]. This dynamic nature of cultures suggests opportunities for multicultural societies to turn away from *static* views of culture to commonalities in designing inclusive solutions.

In the coming years, economic, social and political factors will challenge global perspectives as indicated by the communiqué for the recent G20 conference [21] which attested to the determination of these economically advanced economies to halve their deficits over 3 years; the implications are far reaching. Cuts in public services and value-

for-money initiatives will require governments to demonstrate to domestic taxpayers the value of supporting international aid commitments. This background challenges product and service providers to find ever more efficient and effective ways of capturing a detailed understanding of their consumers.

2   INVESTIGATIVE STUDY

2.1. *Aims and Objectives*

The aims were to: 1) Investigate whether any barriers hinder the take-up of products or services by EMCs in the UK, and if so, 2) to select a product or service provider for further investigating the problem. Research was guided by the following objectives; to:

- Determine how participants are faring in the UK consumer market - whether barriers, particularly cultural, hinder the access or use of products or services;
- Understand the nature of any barriers and which subgroup(s) are most affected;
- Determine whether acculturalisation plays a role and whether participants need or wish to be approached differently for marketing purposes;
- Determine the implications for inclusive design; and
- Identify a product or service provider to investigate their perspectives to gain a holistic understanding for informing the future design of solutions.

2.2. *Participants and Sampling*

Purposive sampling included participants of both genders from the Indian Subcontinent, i.e. Pakistan, Bangladesh, India, Sri Lanka and Nepal. Subgroups were defined as *religion* and *generations* based on marketing literature [5, 6] to help reveal differences or similarities of views. Five major religions, i.e. Christian, Sikh, Hindu, Muslim and Buddhist were identified from the national websites, but Buddhists were not included due to low numbers and recruitment difficulties. Ethical approval was gained and participants were recruited directly from places of worship, small businesses, university libraries, work colleagues and extending these networks where possible.

Fig1.: Flexible, scalable data-gathering concept

Other literature and factors also guided the sampling strategy. Previous studies had largely rejected using *country* as a definition for *culture* [10], for borders alter and cultures overlap borders, thus sampling was fashioned around the commonalities of the Subcontinent, where people have much in common by way of history, culture, languages and religions. The subgroups were also deemed sufficiently specific for investigating barriers and preferences, whilst remaining broad enough to be inclusive and avoiding a niche approach. People from the Indian Subcontinent have been settled in the UK since the 1960's, facilitating data gathering from several generations and revealing degrees of acculturalisation. Finally, the researcher shares the same background which helped to promote empathy, translations in discussions and, hopefully,
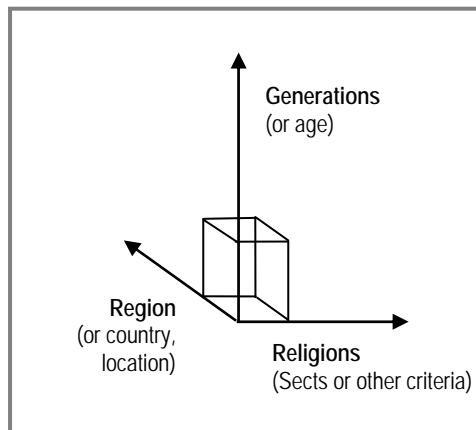
an improved understanding of issues during interpretation.

2.3. **Methodology, Methods and Tools**

The methodology adopted several elements from the empathic design approach promoted by Evans *et al* [22], which embodies the principles *inclusive design* in its sensitivity towards the feelings and needs of users. Inclusive design is defined as "The design of *mainstream* products and/or services that are accessible to, and *usable* by, *as many people* as reasonably possible without the need for special adaptation or specialised design" [23]. Clarkson *et al* [24] add "user satisfaction in a specified context of use" and a consideration of cultural and cognitive differences.

Fig.2: "Capturing the customer's murmur" [adapted 23]

Evans *et al* [22] encourage researchers to include as many stakeholders as possible to gain a holistic understanding of issues for informing design solutions. They propose *The 10D's - the Essence of Empathic Design,* including *Don't assume*, *Delight your customers, Design with others, Develop your own tools,* etc. and a combination of 10 research and design methods to generate rich knowledge of the experiences and views of participants. Researchers are urged to be creative and innovative. A continuous process for 'capturing the customer's murmur' (Fig.2) aims to move beyond satisfying users towards delighting them by offering significantly better understanding of their motivations and needs. This can be complicated, however, as people have needs and desires they may not be able to voice, are unaware of, find difficult to articulate or are unwilling to divulge. Thus, different methods are required to acquire different levels of knowledge [22,25] (Fig.3).

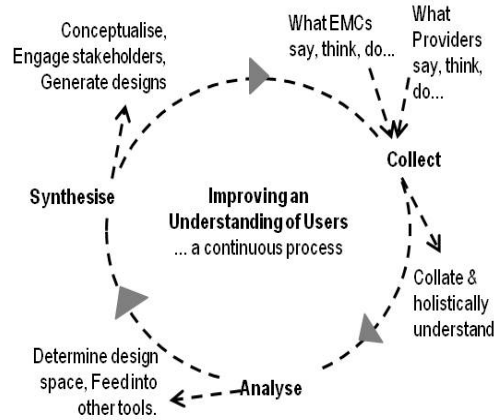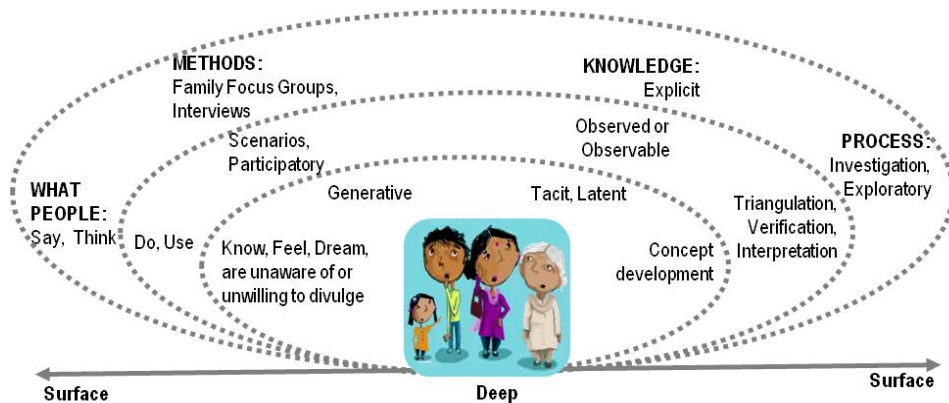**Fig.3:** Understanding Users' Needs: Levels of knowledge accessed by different techniques [Adapted 23, 26]

An inductive, qualitative approach was selected to gather rich data of users' experiences. Family focus groups were mainly used, with some interviews to include

widows and single persons. Whilst organising focus groups is challenging, the family environment offered a familiar setting for those new to research and aided translation. Several literature sources, e.g. design, usability model [3] and marketing, were used to design the questions and to anchor the study in design. Questions were semi-structured and mainly open and with some closed for capturing context; kept simple, avoided references to any particular cultural, religious or linguistic factors, and were divided into two equivalent sections, one relating to products and the other to services, i.e.:

- *Problems* (in the last 3 years): usability, accessibility, comparative context (i.e. easier 'back home), unavailable, never used and culturally important.
- *Preferences*: enjoyable, most useful, favourite, status, aspirational.

Two open lists of product and service attributes were compiled for participants to select their 3 most and 3 least important in purchasing decisions. Visual aids were used to focus discussions and aid memory [3]; products and services images were grouped in non-leading mosaics in easily recognisable everyday living areas i.e. kitchen/home appliances; computers/peripherals; government services (public transport, health, police, etc) and avoided brand identities. The tools (Table 2) were piloted and adjusted.

Table 2: Tools and Methods employed in the Study

Purpose	Description of tools	Composite Sources
3 most/ least important influences on purchasing	Product & Services attributes Lists *(self-fill)*	[17], *Quality in Use & Maslow's models*
Views by Generations & Religions: capturing consumers' murmur	Products & Services: Barriers & Preferences *(Semi-structured, open questions- Family focus groups & Individual interviews)*	[3], [5], [16], M*aslows model,* brainstorming
	Visual aids *(images in mosaics)*	
Significance of visual communication	Symbols/ images *(Semi-structured, open questions)*	Visual communication literature
Understanding Contexts:	Background & acculturalisation: Place of birth, education, residency, languages, festivals, driving, age etc. (*Self-fill questionnaire*)	

Data was subjected to thematic analysis as the study progressed. As data analysis progressed, a few questions on images/ symbols were added. Transcripts were coded according to themes and context sources using a matrix with colour-coding designed to allow comparisons between generations, religions and genders.

2.4. *Highlights from the Results*

Of the 33 participants, 18 were female and 15 male. An exact balance by religion was difficult to achieve due to variations in family sizes, but the aim was for 8 in each faith. As data collection and analysis progressed, it became apparent that barriers were more significant for some 1st generation, thus more of this group were sought for the sample.

Generational age ranges were revealed as (and Fig.4): 1st generation (*n*=16) late 20's to 75+ years, new arrivals to residents of over 30 years - a subgroup have no English or no literacy; 2nd generation (*n*=11) up to 40-49 years, including those not born but schooled in the UK; 3rd generation (*n*=6) up to 25 years, those born and educated in the UK. The latter suggests the community is on the brink of a 4th generation as the 3rd prepare for marriage (cultural attitude).

Views of Products & Services: Participants of all religions, generations and genders favour products and services in the UK to those 'back home' citing design, features, quality and affordability. Satisfaction is expressed that '*everything is available now*' from stores or the internet and the quality of life is very good due to opportunities to progress,

access to healthcare, mandatory education (including females) and utilities. Appreciation of the respect shown to them by the indigenous public was often cited (although a few males felt issues of racism need addressing). None expressed a desire to be approached differently during marketing, albeit those with no English would need help. Problems with products appear similar to those amongst the indigenous population [14] with elderly also relying on family help.
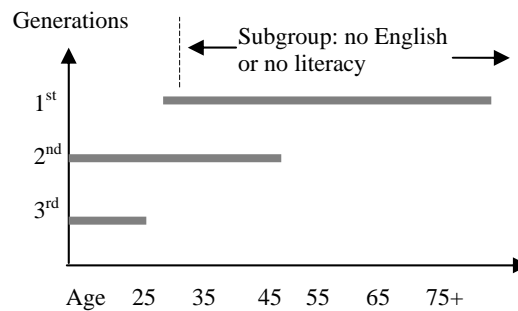
Fig.4: Generational age-ranges of participants (UK)

Audio-visual and ICT products are unanimously popular, with audio-visual especially critical to those with no English or literacy who rely on an oral tradition for prayers and entertainment. By repetition, they memorise one or two symbols for using appliances, although the symbols themselves are meaningless. Some elderly describe themselves as "adventurous" and happy to learn. More images in instructions are favoured by 1st and 2nd generation, English literate participants, to aid them follow technical instructions and to reduce a widening technological gap between them and the 3rd generation. The frustrations largely relate to a lack of time for reading a lot of text and fears of getting it wrong. Images are cited as a means for saving time, improving and extending usability and, thus, empowering them. Provided images/symbols were *understandable*, more are also favoured by all to help lower language barriers for those with no literacy or English and for those travelling in countries with unfamiliar languages.

Acculturalisation: The generations are acculturalising to differing degrees through education and choice, as confirmed by previous studies [18,19]. Almost all participants, including those with no English or literacy, said British culture influenced their lifestyles. Unsurprisingly, this was highest for the 3rd generation. Two 1st generation Sikh females did not cite British culture, although their responses to other questions suggest a good degree of adaptation, i.e. running a business, driving, speaking/ understanding English, including a grandmother who enjoys the gym every morning (culturally unusual). The reasons may lie in social etiquette, pressure or a unwillingness to admit the influence of British culture, as two 2nd generation Muslims cited problems: a married male, "Some of our community don't like it if I show my British side" (frustration) and a single female, "My father would be very angry if I said British also!".

Barriers & Subgroup affected: A subgroup from the 1st generation cite problems with using services, particularly various healthcare services confirming literature [26], and social and job centre services. Unsurprisingly, a lack of English and literacy are factors. The problem manifests itself particularly amongst females, of all religions, a wide age-range, i.e. late 20's to 75+ years, resident in the UK from under 5 to over 30 years. Examples of difficulties include a Muslim mother in her 30's, resident for 10+ years, unable to communicate to ambulance staff why she had called them for her 10 year old autistic son: "I couldn't tell them what was wrong" and she had to ask her young daughter to explain. Similarly, a Sikh widow of 75+, resident for 30+ years, failed to resolve her health problem as her interpreter was absent: "I tried to explain to the doctors, they were very kind, but we could not understand each other" (language barriers, frustration). She now wishes to learn English. A 2nd generation Sikh gentleman confided (in English) his anxiety about his widowed mother's inability to cope when they were at work and the children away in college, and also whether they had the patience to constantly guide her (language, confidence). A Christian family resident for 3-5 years,

with a grandmother literate only in Malayalam, appear unaware of future difficulties (latent needs).

All expressed appreciation, affection and respect for indigenous healthcare staff and the kindness of the British public, but particularly the 1st generation with no English or literacy. However, participants of all generations and literacy also cite difficulties from the negative attitudes of some 1st generation staff (Indian Subcontinent), who they feel treat them with a lack of respect. An elderly Sikh widow said about her Muslim hospital interpreter "She didn't come; later she told me 'I have many others to look after'", concluding "She is a *Musalmaan* (Muslim) so she doesn't care about me" (inter-cultural, lack of respect-no status). A Muslim mother in her 30's abandoned her efforts to learn English, distressed by ladies in her community who made fun of her pronunciation (lack of confidence). A 1st generation, post-graduate Muslim male was scathing about staff at a GPs surgery who waved him away on two occasions saying "come back tomorrow" "like they do 'back home'" (cultural, lack of respect-no status). These examples represent repeated themes from across the discussions, although the sample size was limited.

3   IMPLICATIONS, CONCLUSIONS, NEXT STEPS

A notable difference between the elderly of both genders from the Subcontinent and the indigenous population, is the former traditionally shift emphasis from material things to religion and companionship. As consumers, they frequently leave technology purchasing to the 2nd or 3rd generation. Dependence on the family is a cultural tradition, especially living with or near the eldest son's family. The indigenous elderly, however, strive to remain independent whilst valuing companionship from family, friends and society, and to maintain their activities through technology and support services. These attitudes conform to Hofstede's study of cultural differences [11], i.e. *collective* vs. *individual*.

Cultural factors appear to compound communication difficulties, albeit unwittingly, for the 1st generation female subgroup lacking English or literacy skills, especially if they were denied schooling. Early gender segregation may add to shyness in addressing both genders of the British public and, whilst family bonds traditionally support dependent members, be they elders or housewives, in the context of *ethnic minority,* this subgroup is confined to communicating only within their family or community. Family tensions are also evident from some 2nd generations' anxious about leaving such elderly at home alone and the pressures from managing daily tasks whilst providing constant support. Interpreters are used by many government services, but the problem repeats itself endlessly in participants' daily lives. In an *ethnic minority context* too high a dependence on family resulting in no English skills, suggests problems for the future.

Whilst previous studies confirm some minorities do not like to complain, when asked, the 2nd and 3rd generation cited problems with both products and services, but the 1st generation subgroup focussed largely on services, citing few problems with products although usability problems clearly exist. One explanation may lie in Nielsen's [15] *three divides,* i.e. *usability* factors in products are superseded by *economic* (affordability) and pride in ownership, for these products may be less affordable 'back home'.

Respect is unanimously cited as important and especially so for 1st and 2nd educated generations, suggesting acculturalisation, i.e. respect is ascribed to *individuals* (Table 1).

The potential implications for the wellbeing and social integration of the subgroup with no English and literacy, largely female, is summarised below from 3 perspectives: *individual*, *social* and *societal,* commonly used in cultural and social literature [e.g. 20]. The data prompted using all three as participants spoke about themselves (individuals), families and communities (social) and experiences in wider society (e.g. interactions with service or product providers).

At an *Individual* level, a high reliance on interpreters can result in problems either

from misinterpretation or stress from the absence of one if they need to communicate with emergency services, health staff or the public. Shopping is usually confined to Asian shops unless English speaking family are present. There are potential implications for health and safety in not being able to read instructions on products, loneliness, and stress in the family from the clash between economic imperatives and cultural expectations, especially where there is no willingness to learn English. They receive limited benefits from prolific digitised and printed information unless translated or in audio-visual formats. Potentially, these difficulties can lead to low empowerment, stress, low confidence and almost static mental models.

At a *Social* level, this subgroup is largely confined for companionship to their own communities or language groups. They can be potentially vulnerable to, or exploited by, vested interests in their communities, isolated if their family scatter, i.e. are no longer a 'joint-family', have low or minimal job prospects from a lack of choice, and are less able to guide new generations in the host culture. Cultural taboos like avoiding discussing issues relating to longevity of elders, present barriers for younger generations to suggest the benefits of learning English to prepare parents for the future.

Finally, at a *Societal* level, there are cost and time burdens for multi-cultural societies where health and social services are free at the point of delivery, in employing interpreters in multiple languages and written translations. However, these efforts are only temporarily helpful as the problems reassert themselves when the person returns home. Thus, societal interactions with this subgroup are low, their economic contribution is low and they cannot acculturalise even when they wish to.

The results suggest that it is acculturalisation we should be promoting to empower this subgroup not multiculturalism, for democratic societies like the UK place few barriers on people practising their cultures. Acculturalisation, however, is difficult to achieve without a reasonable degree of communication. Promoting the benefits of English literacy merits consideration, however, this will take time and sensitive planning.

That healthcare is a strong theme is not surprising as it is universally important irrespective of culture or age and would lie at the base of Maslow's *Hierarchy of Needs* model under *Physiological* and *Safety* needs. Previous healthcare research [26, 27] confirms the positive impact of visual aids to help lower communication and cognition barriers for people of different cultural backgrounds and with no/low literacy or English.

Next Steps: These results led to a study (currently underway) with the National Health Service (NHS) to gain a more holistic understanding of problems by exploring staff's experiences of caring for EMCs with no English or literacy. The objective is to determine how the results of both studies may be combined to benefit all stakeholders.

The research hopes to contribute an adaptable, scalable approach using generations and religions for gathering rich information of users' experiences, socio-cultural insights of EMCs' changing perceptions to provide contexts for designers, providers and marketeers and, perhaps, in future elements towards designing inclusively.

References

1   Laing A, Kirkup J (2009) "Immigration will push British population to 70 million" [WWW] The Telegraph. Available: www.telegraph.co.uk/news/newstopics [Accessed 24.10.09]

2   Edinburgh University (2009) "Careers Service: Ethnic Minority Students: Positive about Diversity." [WWW]   Available: www.careers.ed.ac.uk/ [Accessed:17.6.09]

3   Taylor SP, Nicolle CA, Maguire MC (2010) "Preliminary Study of the Cultural Barriers which may affect Universal Access." In: Proceedings of 5th Cambridge Workshop on Universal Access & Assistive Technology, CWUAAT 2010, Fitzwilliam College 22-26 March 2010, pp.3-14. Clarkson PJ, Langdon P, Robinson P eds. Cambridge University Press.

4   BITC (2007) "Facts and Stats: BME Spending Power." [WWW] Business in the Community. Available: www.bitc.org.uk/ [Accessed:09.12.08]

5   Burton D ed. (2002) "Incorporating ethnicity into marketing intelligence and planning." [WWW] Available: www.emeraldinsight.com/ [Accessed: 3.11.08]

6   Emslie L, Bent R, Seaman C (2007) "Missed Opportunities? Reaching the ethnic Consumer Market." International Journal of Consumer Studies Vol.31, pp.168-73. Blackwell Publishing

7   Institute of Ergonomics (2009) "Protocol Workshop on Intercultural Usability" 19-20 Nov 2009. IAD, Darmstadt

8   Storey J (1999) "Chapter 3. Cultural Consumption as Communication." In: Cultural Consumption and Everyday Life. Storey J and Turner G eds. London: Arnold.

9   Hunter M (2010) "What design is and why it matters: Triple bottom line." [WWW] UK Design Council. Available: www.designcouncil.org.uk/about-design/ [Accessed: 15.06.10]

10   Jylha M (2007) Comparisons, Cultures, Contexts.[WWW] European Journal of Ageing, Jun. Vol.4, (2) Available: www.springerlink.com [Accessed: 5.11.08]

11   Rau PL, Gao QA, Liang SFM (2008) "Good Computing Systems for Everyone - how on Earth? Cultural Aspects" Behaviour & Infm. Tech. 2008. Vol.27, (4) pp.287-292

12   Carroll M (2009) "Designing the customer experience" [WWW] Available: www.usabilitynews.com/news/ [Accessed: 06.02.09]

13   Schifferstein HNJ, Hekkert P eds. (2008) "Product experience" 1st edn. London: Elsevier

14   Clarkson J (2008) "Human Capability and Product design." In: Product Experience Schifferstein HNJ, Hekkert P eds. 1st edn. London: Elsevier pp.165-6

15   Nielsen J (2006) "Digital Divide: The Three Stages." [WWW] Available: www.useit.com/alertbox/digital-divide.html [Accessed 27.11.08]

16   Rait J (2008) "Design Pyramid" [WWW] Design_at_the_edge Available: http://ic-pod.typepad.com/design_at_the_edge/design_pyramid/ [Accessed:15.3.09]

17   Masterson R, Pickton D (2004) "Marketing: An Introduction" pp.192-5. Maidenhead: McGraw-Hill

18   Sekhon YK, Szmigin I (2005) "Conceptualizing Ethnicity and Acculturation of 2nd Generation Asian Indians in Britain." [WWW] Available: www.amsreview.org/ [Accessed:7.6.09]

19   Balakrishnan TR, Maxim P, Jurdi R (2005) "Social Class vs Cultural Identity as Factors in the Residential Segregation of Ethnic Groups." Canadian Studies Population,Vol. 32.2, pp. 203-27

20   Castells M (2000) "The Rise of the Network Society: The Power of Identity." 2nd ed. Oxford: Blackwell Publishing Ltd. pp.1-2, pp.354-8

21   "G-20 Toronto Summit Declaration (2010) June 26 – 27, 2010" p.3. Available: www.g20.org/Documents/201004_communique_WashingtonDC.pdf [Accessed 27.6.10]

22   Evans S, Burns A, Barrett R (2002) "Empathic Design Tutor" International Ecotechnology Research Centre. Cranfield, UK: Cranfield University. pp.5-7, 10, 15-17, 26,60.

23   About Inclusive Design (2005) "Definition British Standards Institute 7000-6, 2005". Helen Hamlyn Centre. Available:www.hhc.rca.ac.uk/research/id/index.html [Accessed 15.6.09]

24   Clarkson J, Coleman R, Keates S, Lebbon C eds.(2003) Inclusive Design: Design for the whole population." London: Springer-Verlag.

25   Sleeswijck-Visser F, Strappers PJ Lugt RVD, Sanders EBN (2005) "Contextmapping: Experiences from practice." CoDesign 1(2): pp.119-149

26   Ngoh LN (2009) "Health Literacy: A barrier to pharmacist-patient communication and medication adherence." Pharmacy today: 2009 (Aug), 15(8):45-47

27   Katz MG, Kripalani S, Weiss BD (2006) "Use of pictorial aids in medication instructions: A review of the literature" American Society of Health-System Pharmacists :63 Dec 1, 2006