

## **CROSS-CULTURAL WEB DESIGN STUDY: RESEARCHERS' CHALLENGING TASKS IN DEVELOPING COUNTRIES**

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### **Abstract**

Cross-cultural web design research in developing countries especially in Southeast Asia is challenging due to its cross-cultural constraints and complexities. Drawn from analysis and extensive literature review in cross-cultural studies, HCI and design theories, the paper presents the current research trends and challenges faced by contemporary researchers in this area. Myriad of definitions and understanding of culture; uncritical adoption of models and culture theories; issues of etic, emic and the problems of pseudo-etic claims in research findings; and the significant role of designer as primary decision-maker in design processes, are the challenges delineated in this paper. It is crucial to examine these issues to secure the best practice in cross-cultural web design study. The paper concludes by indicating a substantial misdirection in the current research trends and suggests that a redirection of research approach is essential to improve the web service in government websites in order to further enhance social and economic development. Five significant guidelines to conduct cross-cultural web design research in developing countries are thus proposed.

**Keywords:** Cross-cultural Studies, HCI, Web Design, Malaysia, Southeast Asia

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### **1. Introduction**

This paper describes ongoing research that investigates improvements to cross-cultural web design for local government websites in South-east Asia. These are of a special interest in design terms because of the cross-cultural constraints on such websites and the cross-cultural purposes that such websites must fulfill in regions marked by very rapid increase in internet use. This research focuses on Malaysia as a representative of this context and was used because of its strong multi-cultural dimensions with three main ethnic identities (Malay, Chinese and Indian) plus a very large number of other cultures and sub-cultures for which government websites must function well. In addition, as one of high-internet-growth economies, Malaysian web evolution has all the complexities of supporting the changing levels of skills of the different cultural groups to become competent in internet and website use. Culturally, appropriate website design must support these differences and facilitate website access during the process by which different elements in society become proficient at using e-government services. Extensive analysis of relevant literature undertaken as part of this research indicates multiple challenges for researchers and designers to address. The outcomes of the analyses of the literature are significant because they have revealed challenges to contemporary cross-cultural web design research methods and theories, and indicate it might be helpful for researchers to be critical of existing norms in theories in this area.

As indicated by Internet World Statistics(2014), there are approximately 3.09 billion global internet users. Of these, approximately 45.7% are located in Asia of which 15.8% of the Asia

internet users are from the South-east Asian region. This group of South-east Asian internet users are the largest internet user group in Asia after China. Web development in this South-eastern region is fast and significant and appears crucially important for the region's socio-economic development. Consequently, there was increased interest in cross-cultural design study in web design (Clemmensen & Roese, 2010).

Cross-cultural web design research and design theories are particularly tested by the South-eastern Asia web design context. All South-eastern Asian countries have diverse cultural backgrounds with multiple ethnicities, multiple language use and sometimes contradictory cultural conventions which posed many challenges in carrying out this research. Here, People from different ethnic groups and cultural background and with different languages understand the world around them in a different way and this directly defines how they interpret web design content and navigation structures. The situation is further complicated by different levels of computer literacy between and across these groups; different exposures to a range of technologies; different habits and levels of access to social, cultural, governance and technological infrastructures and finally, differing government policies across ethnic groups. Research methodologies for investigating and theorizing about cross cultural design that have been developed in developed countries with less extreme diversity in the cultural realm are subject to question in their applicability to web design in developing countries like South-eastern Asia (Smith et al., 2010).

This research, therefore, while grounded in the knowledge and theories of established cross-cultural theorists such as Hofstede, has problematized them as they relate to the empirical realities of the Southeast Asian context. This position has proven to be important as it has led to new theoretical outcomes that would not have emerged had the empirical characteristics of Southeast Asian web design outcomes been shoe-horned into existing cross-cultural theoretical models.

## **2. Analysis of Current Cross-Cultural Web Design Approaches**

Analysis of the reviews of cross-cultural HCI research literatures conducted by Clemmensen & Roese(2010), andKamppuri, Bednarik, & Tukiainen(2006) from 1990-2007 revealed three research trends in cross-cultural web design:

1. Comparative studies of different cultures
2. Adoption of existing cultural models
3. User-Centered Design studies.

The first trend is indicated by the analyses of Kamppuri et al.(2006)that revealed a dominance of comparative studies in which a typical non-Western country is compared to a Western country, commonly the United States. Similarly, Clemmensen et al.(2010) identified 14 out of 27 (51.8%) of HCI journal papers published during the years 1998-2007 involving comparative studies that compared a non-Western country, mostly Asian,with a Western country.

The second trend has been the adoption into HCI research and theories of existing contemporary cultural theories and models. For example, Hofstede's(1997) 'cultural dimensions' theories are the most cited cultural models in cross-cultural HCI design research (Clemmensen & Roese, 2010; Fitzgerald, 2004; Kamppuri et al., 2006). There has been substantial criticism of Hofstede's cultural dimensions approach and it's often

considered controversial, yet it remains the most popular cultural model amongst both HCI and web design cross-cultural research.

The third trend is the research emphasis on 'user focused studies'. The weight of this emphasis on 'user focused studies' in the research methods of HCI research projects is unusual and standing back appears unbalanced in comparison to the much more limited range of investigations into the roles and activities of designers and the design process as a whole. Both Kamppuri et al's (2006) and Clemmensen et al's (2010) review findings of HCI research in cross-cultural settings are dominated by research projects whose focus is the study of user requirements, preferences and experiences. This priority on user study may be a matter of fashion rather than clear research thinking, as it correlates with the current trend of user-centered study (UCD) in the broader design research field.

Trends one and two above are characterised by *etic* and *emic* issues that would be expected to be generally problematic in HCI cross-cultural research such as that relating to cross-cultural web design in South-eastern Asia. These first and second trends are characterised by research approaches that analyse cultural differences among two or more cultures from an outsiders' perspective without attempting to understand it from the culture's own perspective. Bannon (2010) had similar concerns about research in which an 'off-the-shelf' cultural model is adopted without further study of the appropriateness of the model as the case may be. These typical *etic* and *emic* problems in approach are particularly significant in situations in which the root of the cross-cultural focus is psychological, i.e. relating to thinking, intuition and emotions, such as issues of web design and use. The analyses undertaken during this research suggest that the bodies of research within the first two trends above might be considered to present problems of cross-cultural analysis that could be categorized as '*pseudo-etic*'. This concept of '*pseudo-etic*' research perspectives and their associated problems will be outlined more fully in the next section.

Trend three revealed the lack of attention in the HCI research field to the significant role of designers as crucial decision makers in web design. Designers are the primary definers of both the overall concept and detailed design solutions. Of particular significance in cross-cultural terms, it is designers' cognitive biases, practice knowledge, cultural biases and design fixation that drive the decisions which directly define and shape the design of culturally significant aspects of web sites as cross-cultural computer mediated interaction interfaces.

### 3. Challenges Addressed in Cross-Cultural Web Design Study

The research identified the following challenges for cross-cultural web design research in developing countries in South-east Asia that typically have not been adequately addressed by researchers till date:

1. The definition and understanding of the term 'culture'.
2. Problems associated with the uncritical adoption of models and theories about culture developed for other circumstances.
3. Issues relating to *etic* and *emic* aspects of research in relation particularly to the loop of culture->personal psychology-> design use-> culture especially where the loop is relatively fast in feedback terms, such as in web design.
4. The significance of the role of the 'expert' designer as the primary decision-maker in design processes especially in the developing country context.

5. The ways these challenges come together in combinations to redirect and redefine best practices in cross-cultural web design independently of users.

### 3.1 The Definition and Understanding of Culture

The concept of 'culture' is central and foundational to all analyses and theories relating to cross-cultural design study. In reality, however, definitions of the concept of 'culture' are both region and individual defined and are challenged from multiple sides. 'Culture' is not a well-agreed idea. Most researchers involved in research into cross-cultural design, however, have till date, given little consideration to identifying or defining clearly the particular concept of 'culture' on which their research is based and their theories derived (Kamppuri et al., 2006; Löfstrom, 2010). This may be due to the myriad of definitions of culture, which remain an argument among the anthropologists. In essence, however, this fundamental weakness in the theoretical grounds of research suggests that the validity of theories from such research should be regarded critically.

Typically, the authors of papers describing cross-cultural design research take the concept of culture for granted, unfortunately assuming it as either what anthropologists referred to as the 'old model' decades ago. (Wikan, 1999) or framed their research upon the now widely challenged cultural 'essentialist' approach in which 'culture' is seen as integrated collections of customs, objects, things, practices, beliefs and institution that characterize a society. This view has been critically challenged for some time and is widely regarded as a 'system of belief' about 'culture' grounded in the concept of human being as a cultural subject who is confined within boundaries (Grillo, 2003). The contemporary anthropology study of culture has progressed from the essentialism approach.

Contemporary anthropologists assert that 'cultural essentialism' does not give an accurate picture as it regards each 'culture' as a bounded unit operating alone. Instead, anthropologists now suggest that 'culture' is better viewed as a collection of interacting phenomena in which each culture is inter-related with other cultures, each influencing the others (Wade, 1999).

Consequently, many anthropologists are adopting an *anti-essentialism* approach. In this new approach, they view culture as a relative term (Wade, 1999). To them, culture is seen as not static but dynamic in the sense that it is malleable, shifting, contextual, a situational set of meanings and ideas that can change according to perspectives (Wade, 1999). The concept of culture, which is confined to national or ethnic boundaries, is deeply flawed according to the anti-essentialist perspective. For conducting cross cultural design study, the anti-essentialist cultural approach requires researchers conducting a more contextual research perspective in which culture is understood not as something that is 'owned' by a particular society or group of people but rather something one 'lives' with (Wade, 1999). The implication for cross-cultural design research is that it suggests strongly that a more critical stance should be adopted when investigating web design studies that require re-examination of old beliefs, widening the scopes of perception in order to take a wider range of possible factors into consideration.

### 3.2 Problems Associated With the Uncritical Adoption of Culture Models and Theories Developed for Other Circumstances

The contemporary anti-essentialism view of culture described in the previous section presents serious challenge to the existing cross-cultural design research literature, particularly in HCI. This is evidenced by the overwhelming dependence of the cross-cultural

HCI design research literature on essentialist cultural models, especially Hofstede's cultural dimensions(1997). Hofstede's cultural dimension model is *essentialist* in its origins. Hofstede created the model in 1991 based on survey data from global IBM employees in which he conceptualised 'cultures' as 'programming of the mind' in the way that certain reactions were more likely seen by certain cultural groups than in others, based on differences between basic values of the members of different cultural groups. He defined all cultures into five cultural dimensions and denoted each nation in the world with his cultural dimension index.

Hofstede's view in grouping national culture as homogenous and ignoring the possibility of diverging subcultures has been widely criticised. For example, Baskeville(2003)and Myer & Tan (2003) question the use of the nation as unit of culture analysis in Hofstede's model, as many nations are composed of more than one culture and many other subcultures as well. Furthermore, the contemporary concept of culture posited by the anti-essentialist in anthropology has totally denounced the notion of culture based on nation boundaries. Perhaps most significantly in terms of the validity of its theory, Ailon(2008) challenged Hofstede's model by analysing its theoretical under pinning in terms of its own assumptions and findings.

Most problematic for a field such as web design in which web design influences culture and culture influences web design in a rapid loop; Hofstede's model regards culture as static. This aligns with the Hofstede's collection of data as 'snapshots' across IBM employees, rather than seeing organisational culture as evolving in a similar manner to that presumed by organisational learning theorists and organisational systems theorists such as Checkland's Soft System (1999), Beer's Viable System(1972) Modeland Jackson's System Thinking(2009). Contemporary anthropologists have moved away from a static view of culture to a more dynamic approach. For example, Kahn(1989) as cited by Myer & Tan (2003) perceives culture as something that is interpreted and re-interpreted, and constantly produced and reproduced in social relations. It is contested, temporal and emergent. Together these suggest that in cross-cultural web design research, the literature adopting Hofstede's model and other 'off-the-shelf' cultural model must be treated critically and with caution to avoid assumptions within and based on the findings.

### 3.3 Etic and Emic Approach

The paired terms "*etic* and *emic*" were coined by Pike(1967) in linguistic studies to indicate a separation between subjective and neutral interpretation and comparison of empirical data and accounts of situations in social research contexts. Analyses from an *emic* perspective are regarded as validated and meaning inspired by someone embedded in the culture in focus. In contrast, an *etic* perspective attempts to analyze and give meaning to data from outside the culture in ways that are as value free and culturally disengaged. Various disciplines have appropriated in a variety of ways Pike's *emic* and *etic* duality and defined the terms in different ways that are in the main shadow like Pike's original concept of insider versus outsider views of cultural research. For example, Berry(1980), defined the *etic* approach as one used in the study of behaviour from outside the cultural system in focus. It is used to examine behavior from the perspective of multiple cultures and extracts common elements across them. In contrast, Berry defines the *emic* perspective as one used for the study of behaviour from within the cultural system in focus and can therefore be deduced from the literature that when a researcher has discovered common elements across different cultures, most likely an *etic* approach has been used.

Etic and emic approaches can be regarded as complementary, or rather essential to triangulate each other. For example, Berry(1969) and Triandis(1972) said that research in which a single *etic* approach is applied without further validation can create a false assumption that is perceived as the only truth about a particular culture.

(Berry, 1969) coined the term '*imposed etic*' to research which assumes or suggests that analyses and findings are *etic*-based when in fact there is no evidence that they are. Triandis(1972), echoed Berry and coined the term '*pseudo-etic*' to refer to such false assumptions and Triandis' term has become more widely established.

Review across the literature of cross-cultural design research undertaken as part of this project, indicate that under justified and false *pseudo-etic* claims of cultural 'findings' are a common problem. From observation, it appears that the presence of this problem occurs in text that suggest a lack of attention to critical awareness of differences between *etic* and *emic* perspectives and to accurate reasoning and validation.

The over-dependence of the cross-cultural web design research literature assumes that 'off-the-shelf' generic cultural models such as Hofstede's cultural dimensions model can be applied without critical consideration of the implications which exposes it to a criticism of researchers making *pseudo-etic* claims. In design terms, this results in the development of faulty design guidelines and poor design outcomes. The problem can be seen as a practical implication of the *pseudo-etic* critique that suggests that one cannot take a cultural dimension developed in one culture and translate it into another culture without further consideration that its findings can be validly applied to another culture.

Greenfield (1997) cited by Triandis (2002) demonstrated such limitations in using Western made cultural analysis instruments in other cultures, where they do not share the same basic values, knowledge and communication as the cultural group within which the instruments were developed.

A direct example of such a problem is illustrated through recent research conducted in Malaysia by one of the authors. Hofstede's cultural dimension model ranks Malaysia as the country with the highest Power Distance index and based on this model, earlier researchers had characterized Malaysian websites as such with a highest Power distance index and this was used to derive and justify cross-cultural web design guidelines for designing websites in Malaysia(Marcus & Gould, 2000). Research undertaken by one of the authors of this paper however, found that they were not preferred in Malaysia. The occurrence of such high Power Distance website designs was imposed by designers that are likely under the influence of Hofstede's cultural dimension and associated web design guideline. Hofstede's characterization of Malaysian culture was that seen from a different time, place and culture and had been falsely presumed to be the same as the culture of today as observed locally and subjectively in Malaysia. In design terms, such an error can be disastrous or at very least lead to culturally flawed designs.

### **3.4 The Important Role of Designer in Design Process in Developing Country Context.**

In developing countries such as Malaysia, user centered design (UCD) approaches, advocated by many design researchers is essential in developed countries but were typically not common design practices.

Research into web design practices in Malaysia have shown that the awareness of usability standards is almost non-existent regardless of whether it is the government or local designers (Idyawati et al., 2010; Yeo et al., 2011) In the design of Malaysian government

websites, user studies and task analyses were usually not conducted during the website development process (Idyawati et al., 2010). Similarly, usability is not high in the professional awareness of Malaysian web designers.

Preliminary findings from the research project on which this paper is based, reveal that local web designers undertake and create web designs primarily based on their prior experience, knowledge and their work practices which are typically subjected to significant time and budget constraints. Design decisions are most of the time 'designer-centered' and design outputs are primarily products in which designers make their design decision based on their personal judgments about what is appropriate.

This finding significantly shifts the focus of cross-cultural web design research intended to improve web design outcomes in developing countries such as Malaysia. The dominant role of designer decision-making in web design in developing countries suggests that it is much more relevant to investigate the factors that shape how designers make web design decisions, including psychological factors, personal biases, cultural dynamics, education and other relevant conditions. The literature indicates that most researchers till date involved in cross-cultural web design research have both jumped to *pseudo-etic* conclusions that have misdirected their findings in terms of the *emic* account, by applying cultural models that are inappropriate and have similarly presumed to apply a user centered focus to their design though proper in developed countries, but in countries like ours had led to the negligence of the dominant role designers play as crucial decision makers in web design.

In some cases, Malaysian web designers may follow universal design guidelines and heuristics during their design process, which while they may claim to be user-centered design focused, there still remain the question of the appropriateness of the guidelines and heuristic.

#### 4. Conclusion

This research points to the potential of a substantial misdirection in the current trends of cross-cultural web design research seen in developing countries in South-eastern Asia. The significant scale and growth trajectory of Internet use in this area, as described in the introductory section, suggests that such a substantial misdirection in research effort is also significant. The redirection of research resources more appropriately is expected to lead to social and economic improvements to majority of the masses.

The analyses and preliminary findings of the research till date reveal specific challenges to those conducting cross-cultural web design research in South-eastern Asia and similar developing countries that differ from the assumptions that can be made by those undertaking research in developed country contexts. In addition, they point to the following guidelines;

1. Adopting an anti-essentialism view of culture in which cross-cultural web design research is grounded on a more contextual approach in which cultural factors are viewed as dynamically changing and interacting across group and national boundaries in a highly flexible and responsive manner.
2. Avoiding over dependence on 'off-the-shelf' cultural models created in other disciplines and in different cultural contexts. Especially, be critical and cautious of using developed country models in developing country contexts. (Note: For brevity, the arguments

from colonial critiques have not been addressed in this paper. The authors suggest that such colonial critiques would be expected to align closely with the social analyses that have been drawn on in this research).

3. Consider the importance of using both *emic* and *etic* approaches in cross-cultural web design research to provide both a more reliable understanding of the cultural factors acting on the organization and the design process and outcomes which helps to validate the research findings.

4. Focus research resources onto investigating and analysing the factors acting on web designers, their decision-making, and the ways these shape design outcomes, rather than uncritically focusing studies present in a developing country context less relevant than in developed countries.

5. Finally, avoid assuming that all aspects of cross-cultural web design research must be culturally defined. In the South-eastern Asian context as exemplified by Malaysia, it is clear that there are significant benefits in understanding its availability to researchers who adopt a more open minded critical analytical perspective when conducting cross-cultural web design research as compared to blinkering the research by limiting it to the restricted and potentially flawed outcomes that results from adhering to cultural models developed for other contexts.

6. Avoiding over-emphasizing cultural factors but offering the space and resources to explore other more influential possibilities when investigating cross-cultural web design practices such as the influences of cognitive biases, practiced knowledge, cultural biases and design fixation.

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