Anxiety and Involvement: Cultural Dimensions of Attitudes Toward Computers in Developing Societies

Roger Harris
Universiti Malaysia Sarawak, Malaysia

Robert Davison
City University of Hong Kong, HK

Information systems (IS) are implemented within a social context consisting of economic, political, cultural and behavioural factors which differ greatly between societies and countries. Failure to take account of such differences can inhibit adoption of information technology (IT) and increase the risks of failure for system implementations. Developing societies are particularly vulnerable to such risk as their social contexts exhibit considerable differences, not only from the developed nations but also among themselves. This study examined the computer anxiety and involvement with personal computers (PCs) of six groups of computer-using students from China, Hong Kong, Malaysia, New Zealand, Tanzania and Thailand. Differences in computer anxiety were found to exist between some of the groups, which was probably attributable to demographic factors. Differences were found to exist between the PC involvement of some of the groups which could be attributed to cultural factors. Implications for research and practice are drawn.

Developing countries are increasingly deploying IT to solve their developmental problems. Lending for IT by the World Bank has been growing at six times the growth rate of total Bank lending, and is present in 90% of the Bank’s lending operations. The extent of IT’s impact on World Bank development efforts has been rated great or very great by 79% of projects (Hanna, 1993). However, overall use of IT in developing countries remains at a far lower level than in the developed nations. For example, Tokyo has more telephones than the entire African continent (Harris, 1995). Many factors will affect the behaviour of individuals who have the opportunity to use a computer and the influence which attitudes have on individual behaviour has been well documented (Bagozzi, 1992).

Influences on behaviour may also arise from organisational culture (Geertz, 1973) or from national culture (Hofstede, 1985). The implementation of IT in developing countries is often characterised by a transfer of technology from one culture to another. In aid situations, this transfer is often in the form of a donation from a developed country with a western (European) culture to a developing country with a non-western (African, Asian or Latin-American) culture. In such cases, assumptions regarding the changes in behaviour which are required to make the technology successful may not be as valid in the recipient culture as they may have been in the donor culture. For example, Galliers et al. (1994) describe a national computerised land management system in Pakistan which was rejected by senior management seemingly because...
they were expected to use it for strategic planning, forecasting and decision support even though they belong to a culture in which meticulous forward planning is not emphasised and in which risk-taking and fatalism are valued.

National cultures are often formed from the aggregation of ethnic cultures which may not coincide with national boundaries. This is especially true in, but not confined to, post-colonial nations, many of which are classified as developing countries. Moreover, many developed nations, whose national cultures might be thought of as fairly homogeneous, in fact contain significant minority populations who often consider themselves ethnically and culturally distinct from both the majority population and from each other. Examples include Australian Aborigines, New Zealand Maoris, and the immigrant communities of several European countries. In all cases, individual behaviour is culturally patterned, and in many cases, some catastrophically so, by ethnic differences.

Among the many aspects of attitudes towards computers which are known to influence computer-related behaviour, two are chosen for examination in the present study. Computer anxiety or technophobia tends to inhibit computer use and has been found to be related to a consistent pattern of response towards computers, viz. lower expectations, poorer performance, more subjective anxiety and a higher frequency of debilitating thoughts (Igbaria and Nachman, 1990). On the other hand, involvement with computers has been shown to have a positive influence on computer-usage behaviour by individuals. Moreover, involvement with a product such as PCs can be simultaneously psychological and behavioural. Product involvement represents a continuum that ranges from total apathy to extreme enthusiasm, and while not being observable, it does produce observable behavioural outcomes (Bloch, 1986). For example, Paré and Elam (1995) found computer-related activities, such as watching TV documentary programmes about computers and consulting computer-oriented magazines, to be among the dominant predictors of PC usage. Bloch (1986) defines product involvement as an unobservable state reflecting the amount of interest, arousal, or emotional attachment a consumer has with a product. Product enthusiasm gives rise to early adoption of new products and desire for the latest technology (Bloch, 1986).

This research measured the computer anxiety and PC involvement of a number of different cultural groups of computer users. Six groups of tertiary-level students, totalling 279 respondents, from China, Hong Kong, Malaysia, New Zealand, Tanzania and Thailand, were asked 20 questions about their feelings towards computers. Hong Kong and New Zealand are not classified as developing nations. Hong Kong was included in the study in order to provide the opportunity for comparing the results with at least one developed nation. The subjects from New Zealand were all of Maori extraction, and as such represent an economically disadvantaged and culturally distinct group which can be regarded as a developing society.

University students were selected for the study as a convenience sample, but also as they represent future professionals who are likely to be well-positioned to make good use of computers in their careers, though major behavioural changes may be required (Panko, 1988). In the next section, we describe the six groups of students and their cultural backgrounds. Following this, we employ analysis of variance and partial least squares to analyse the data collected from the students.

**Country Profiles**

Table 1 provides summary demographic and economic statistics for the countries included in the study. Subsequent subsections provide a brief description of the political, economic and cultural background of each country.

**Peoples’ Republic of China (PRC)**

The forty-eight students in this sample were final year undergraduates in the Department of Journalism, at Jinan University, Guangzhou, where Mandarin is the official medium of instruction. Journalism students typically have moderate exposure to PC software, being familiar with word-processing, desktop publishing and presentation graphics but not with programming languages. Particular attention is paid to Chinese computing, since the newspaper industry in China has been computerised for many years and journalists require proficiency in Chinese input methods.

Guangzhou is one of the largest cities in China, with a population of approximately five million. With the “open door” policy now practised in China and the promotion of trade and business in Guangzhou, the financial situation of its citizens has improved considerably in recent years. Generally in China, parents place a high value on education and employ a concept roughly translated as “studying is the most highly appreciated activity.” University graduates need to be well equipped with computing skills as computerisation has become very popular in Guangzhou businesses. Computer-related courses have been offered in Guangzhou since the early 1980s and there is an increasing trend for families in Guangzhou to have a PC at home. Computer-related activities, such as playing computer games, and reading computer-

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>GNP per Capita</th>
<th>Telephones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$US^1</td>
<td>per ‘000^2</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>5,865</td>
<td>17,860</td>
<td>510</td>
</tr>
<tr>
<td>Thailand</td>
<td>58,824</td>
<td>2,040</td>
<td>37</td>
</tr>
<tr>
<td>Malaysia</td>
<td>19,032</td>
<td>3,160</td>
<td>126</td>
</tr>
<tr>
<td>China</td>
<td>1,175,359</td>
<td>490</td>
<td>15</td>
</tr>
<tr>
<td>Tanzania</td>
<td>26,743</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td>New Zealand</td>
<td>3,462</td>
<td>12,900</td>
<td>460</td>
</tr>
</tbody>
</table>


**Table 1. Demographic and Economic Statistics**
Related Content

Strategies for Virtual Learning and E-Entrepreneurship in Higher Education
www.igi-global.com/chapter/strategies-virtual-learning-entrepreneurship-higher/8293?camid=4v1a

E-Commerce Infrastructure and Economic Impacts in Developing Countries: Case of India
www.igi-global.com/chapter/commerce-infrastructure-economic-impacts-developing/19054?camid=4v1a

Social Construction of Information Technology Supporting Work
www.igi-global.com/chapter/social-construction-information-technology-supporting/6310?camid=4v1a

A Comparison of the Digital Divide Across Three Countries with Different Development Indices
www.igi-global.com/article/a-comparison-of-the-digital-divide-across-three-countries-with-different-development-indices/141564?camid=4v1a