The impact of culture on the adoption of high technology products

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Although culture appears to be an important element in consumer behaviour, few have researched its direct impact on the adoption of innovation. In an exploratory study, research was conducted with migrants from Vietnam and Poland to examine the impact of culture on the adoption of high technology products. Specifically, data were examined for differences in adoption of these products between Vietnamese and Polish migrants to Australia; and the effect of cultural factors, specifically, “traditions”, “religion” and “fatalism” (beliefs about man’s inability to control nature), on adoption. This research was a preliminary study, but the results indicate that culture has an important role in the adoption process of high technology products.

Introduction

Culture is defined as “the norms, beliefs and customs that are learned from society and lead to common patterns of behaviour” (Assael, 1987, p. 297). Central to any culture is a common set of values which determine what is considered socially acceptable behaviour. These learned values also determine the forms of social organization such as the family, education and social class system which characterize a society.

Culture reflects the belief that people acquire values through experiences in specific situations and that behaviour cannot be understood or predicted in the context of a specific environment. Vinson et al. (1977) contend that individuals arrive at (monetary) values through economic exchange and consumption, at social values through familial and peer group interaction, and at religious values through religious instruction.

Understanding cultural differences is an important element in formulating marketing strategy (Munson and McIntyre, 1979). Writers cite numerous examples of the influence of cultural values in consumer decision making, and its importance in “drawing up” international marketing strategies (Douglas and Dubois, 1977).

Although the identification of these culturally related differences in buyer behaviour is of concern for international marketers and researchers alike, there is no consistent theoretical perspective which confirms the impact of cultural forces on purchasing behaviour.

The impact of culture on the purchase process

Culture is an important factor to take into consideration when entering overseas markets. Douglas and Dubois (1977) highlight some of the ways in which cultural factors can influence customer response patterns, and the need to consider these factors in planning international marketing strategies. They claim there is no consistent theoretical perspective about the impact of cultural forces on behaviour in general, and although cultural influence has been the subject of study in many of the social sciences, different definitions of culture are often used. The most common recurring themes central to any culture is a common set of values, that determine forms of social organization, habits and conventions, the communication system and roles and status positions for members of that society. Elements of this definition were fairly consistent with other researchers suggesting that culture is one of the “underlying determinants of consumer behaviour” (Henry, 1976, p. 121).

In marketing products internationally, therefore, understanding cultural practices can be useful in assessing whether a single strategy can be effective in different national environments, or whether several strategies should be adopted, each geared to the different cultural setting. Although Douglas and Dubois did not undertake research as such, other writers such as Henry (1976) attempted to show empirical evidence of the impact of culture on consumer behaviour. Henry’s research did not investigate the possible linkages through intervening variables or hypothetical constructs through which cultural relationships could be assumed to work, but rather his study focused on testing specific cultural behaviour and the importance of these dimensions with respect to other demographic correlates. His research suggests that specific cultural dimensions of man’s relation to nature, time, personal activity and other people are useful predictors of consumer behaviour on products involving a high involvement decision process, although further research needs to be conducted to explore whether similar value dimension correlations can be observed with other durable and non-durable goods.

International marketing aims to establish similar patterns of consumer behaviour in culturally dissimilar markets. As part of the scope of international marketing, Williams (1991) claims that companies have been trying to achieve economies of scale by harmonizing their manufacturing and marketing activities in different countries. That is, international marketing seeks to establish similar patterns of consumer behaviour in culturally dissimilar markets. Williams argues that people from
different countries react in different ways because those are physically different, and have different climates, economies, religion and history. He proposes that people are influenced not only by their attitudes and motivations, but also by their surroundings and the context in which they make their behaviour decisions.

In his research, Williams adopted the Young and Rubicam’s system of cross-cultural consumer characterizations (4Cs) which defines a base set of core consumer motivations, or values, that are important in determining people’s purchasing behaviour. These values were then classified according to their dominant shaping effect on attitudes and behaviour of that individual. Williams’ research aimed to classify people across cultural boundaries according to their dominant motivations in life. His findings, in a non-durable product market, indicated that it is possible to create a “robust framework for analysing cultural similarities and differences in a market” (Williams, 1991, p. 177). This therefore has implications for co-ordinating international marketing activities for a particular product.

Although attitudes and attitude change have long been acknowledged as important contributors to consumer behaviour, values are often used as a basis in which they influence the behaviour of consumers is not clear. Vinson et al. (1977) investigated the impact of “value orientations” which incorporates attitudes and personal motives, on the importance of product attributes, the appeal of various consumer products and a number of social issues. To do this, they undertook an exploratory study to investigate whether subjects from two culturally distinct regions in the USA would exhibit different value orientations, and, if so, the extent to which these value differences may be related to attitudes towards automobiles and the attributes of automobile differences. Their research showed that an individual’s attitudes are based on his/her values, and changing values could have a profound effect on attitudes and how the individual behaves. This suggests that marketers must keep in tune with their market, not just for the entry into a new market, but on an ongoing basis.

Tansuhaj et al. (1991) investigate the role of cultural values in explaining differences in the willingness to try new products to help broaden the understanding of innovation resistance across cultures. They chose three variables that seemed to offer a more direct explanation of the differences in innovativeness across cultures: fatalism (all events are predetermined by fate), traditionalism (degree of one’s adherence to particularly cultural values) and religiosity (the role religion plays in the formation of values, attitudes and behaviour). They looked at the adoption of both durable and non-durable products across five countries which represented varying degrees of societal and economic development using these three variables. In their study, Tansuhaj et al. (1991) found that differences across the five countries in terms of culture and innovation resistance were not particularly enlightening, and it seemed important to determine why those differences exist. Tansuhaj et al. conclude that the study of innovation resistance tendencies of various cultures may shed light on the proper design and implementation of marketing mix strategies, suggesting where efforts to reduce trade barriers might be most beneficial.

There are limitations which should be taken into account when measuring culture. Vinson et al. (1977) and Clark (1990) believe that learned values stemming from culture are not easy to measure because each individual is unique in the way specific product attributes and brands are evaluated and that the validity of research can be hindered by generalizations about people and nations. Clark suggests generalizations about people and nations are not possible, and even if they were possible they would be clouded by variation in national groups because such judgements are often based on indirect experience. Clark believes that research questions should be framed so they reflect the relevant dimensions of the “culture” concept and avoid the temptation to predict individual behaviour.

**Research objectives and research method**

The purpose of this exploratory research study is to identify the relationship between the importance of learned values and the buyer adoption process, through exploring the adoption of consumer products by Polish and Vietnamese residents who have immigrated to Australia. The products selected for investigation (dishwashers, mobile phones, home computers, video players, and video cameras) are associated with new technologies readily adopted by residents of other “western” countries. The “personal toll-free” system (where emigrants residing in Australia are called by family from their “home” country) will also be examined to explore the association between culture and a new product concept.

**Research objectives**

This study will examine differences in adoption of new technology and determine whether there is an association with learned values within each culture. Matched samples
with similar political and economic factors allow examination of the factors that contribute to differences in the adoption of the products examined in this research between each nationality.

Specifically, the research objectives are to:
1. explore differences in adoption of “technology” products between Vietnamese and Polish people residing in Sydney;
2. investigate differences in cultural ties to home countries between the two groups;
3. determine the impact of cultural factors on the adoption of specific high technology products between the two groups.

The research will examine the propositions that:
- Vietnamese and Polish cultures have owned high technology products and services for different lengths of time.
- Vietnamese and Polish migrants display different strengths of cultural ties to their “home” countries.
- Culturalism, and in particular, “traditionalism”, “fatalism” and “religion,” affect the adoption rates of new products and services by each group.

Research method
A questionnaire was designed for data collection. Using measures of culture evident in the literature review, the questions sought to determine the extent of culture and the adoption of innovation. The questionnaires were pretested on a small convenient sample and designed to collect information on the length of time of residency in Australia; extent of mixing with other cultures; types of appliances owned, importance of appliance to lifestyle; frequency and methods of contact with family and friends overseas; and willingness to adopt the concept of personal toll-free telephone calling.

The data were collected by personal interviews in the native language of the respondent, conducted through interpreters who spoke Vietnamese or Polish, but were not from a market research fieldwork company. Although attempts were made to match the two populations in terms of length of time in Australia, income, sex and age, the only screening criterion used was that respondents had migrated to Australia. Therefore, the sample was that of a non-probability design, a factor that could affect the reliability of the output.

There were 50 completed questionnaires, 29 Vietnamese and 21 Polish. The nationalities were not similar in income, although they were fairly well matched in terms of sex and age. The difference in income levels could be an influencing factor in deciding to purchase a technology product such as a mobile phone or computer, and this was included in a regression analysis.

Emigrants from Poland and Vietnam to Australia were chosen because these two countries have experienced constant military and political upheaval with borders constantly being shifted through war territorial settlements. In addition, both had communist governments but are moving towards market economies. As a result, western countries are lifting some of the sanctions imposed. Neither country has a high standard of living (The World in Figures, 1997), although there is a high level of literacy. A total of 85-90 per cent of Vietnamese and 98 per cent of Polish are literate. Technologies are antiquated and professionals such as university professors and doctors are lower paid than those in the industrial sectors.

Both countries display strong ties to the family (Cohen, 1991; Duncan, 1983; Kim, 1978; Ng, 1998; Robinson and Cummings, 1991), and there is a strong influence of religion. There is an obvious difference between rural and city dwellers because of outdated communications and infrastructure. The urban dwellers tend to be more affected by western influences. Emigrants from both countries tend to spend substantial money and send gifts to families and friends still residing in the “home” countries.

There was no significant statistical difference or any degree of association between the Polish and Vietnamese respondents with respect to the time lived in Australia. The majority of respondents had lived in Australia more than five years. Respondents were restricted to specific localities in the Sydney region where Polish and Vietnamese immigrants reside or conduct business. Therefore, the results are not representative of other major cities in Australia.

Results
The analysis attained frequencies and cross tabulations for each nationality, allowing for statistical relationships to be identified including significant differences using chi-square, measures of association and strength of relationships between variables to test the hypotheses. Regression analysis was also undertaken to attempt to identify the impacts of cultural and non-cultural variables on adoption behaviour.

Cultural variables
The cultural variables measured included eating habits, nationalities in the neighbourhood, languages spoken at home, socializing habits of adults and children, the importance...
of religion and “fatality”, (the belief that all events are predetermined by fate).

There was a significant statistical difference in the eating habits of Polish and Vietnamese. Nearly every Vietnamese ate Vietnamese food every day, while only 19 per cent of Poles ate their national food daily. Polish people tended to live in neighbourhoods with a mixture of nationalities or within Anglo Saxon communities, whereas nearly 85 per cent of the Vietnamese sample live in Vietnamese only or Asian communities. There was a strong relationship between nationality and the type of neighbourhood in which different nationalities reside.

There is no significant difference, however, between socializing habits of each nationality. Both sets of respondents socialize with their own nationality. This finding was unexpected with the Polish respondents, since they tend to live in neighbourhoods with mixed groups or predominantly Anglo Saxon. When at home, both groups also use their “home” language as their first language.

The children of migrants tend to mix with other nationalities more than their parents. For Polish families, the children always or usually mixed with other nationalities. For the majority of Vietnamese families, children usually mixed with other cultures. Children attend schools or tertiary education institutions where there are a mixture of different nationalities. In addition, it would be compulsory for them to learn the English language.

There was a significant statistical difference between Polish and Vietnamese involvement in religious activities (frequency of personal study using a holy book). Although 75 per cent of the Vietnamese respondents participate in religious activities at least weekly, only 20 per cent of Polish respondents take part in religious activities this frequently.

“Fatality”, a variable identified previously as contributing to the measure of innovativeness across cultures, is defined by Tansuhaj et al. (1991, p. 9) as “the belief that all events are predetermined by fate”. To understand the extent of “fatality” between the samples, respondents were asked to indicate which of the following statements best represented their feelings about man’s ability to control nature:

1. Man has never been able to control the weather and never will. It is a matter of taking it as it comes.
2. Man cannot control the weather, but precautions can be taken to limit damage from storms.
3. Man must learn to overcome and control the weather. Some day we will be able to change the weather to suit our needs.

Tansuhaj’s research found that the Chinese believe in luck, chance and fate to a greater extent than Americans. For this research, it was anticipated that oriental cultures would be more likely to agree with the first statement where all events are determined by nature and not man. All Vietnamese respondents believed the weather will never be controlled by man. The Polish were fairly evenly distributed in their beliefs, with a slight majority believing that “one day man will overcome nature”. Not surprising, there was a significant statistical difference and high degree of association between Polish and Vietnamese views of fatality.

Adoption of high technology products
There were significant statistical differences (p < 0.05) between nationalities and the ownership of appliances (see Figure 1).

As anticipated from the previous results on “fatality”, Polish respondents were more willing to adopt high technology products. An unexpected finding, however, was that Vietnamese have a far higher ownership of mobile phones (62 per cent) than Polish respondents (19 per cent).

For most appliances, there were also differences in the length of time of ownership. The only appliance which gave no significant difference in the length of time of ownership was mobile phones. However, there were so few Polish respondents who owned a mobile phone it was difficult to make comparisons.

Interestingly, of those Polish respondents who owned the specified appliances, the majority had owned them for over two years. The Vietnamese were more evenly distributed as a whole, although for video players and mobile phones, those who owned the appliances had done so for more than two years.

It is important to highlight that, although there are differences in ownership and the length of time the appliances had been owned, it cannot be contributed to the length of time the respondents had lived in Australia. There was no significant differences in their time of residency.

For most appliances, the decisions for the Polish respondents to adopt a product was initiated by the actual respondent. Cross tabulations revealed males nominated themselves most as the initiator of purchases. In the dishwasher and computer product categories women often initiated the purchase for the family. In addition, Poles were more responsive than Vietnamese to advertising and friends’ recommendations.

Children also played a role in initiating purchases for each nationality, particularly for purchases in which they probably are the
main product users, such as video players and computers. There were significant differences \((p < 0.05)\) in the importance of the different appliances on lifestyles between nationalities. For every specified appliance, more than 70 per cent of Polish respondents preferred to own the appliance, even if not that important to their lifestyle. In contrast, 40 per cent of Vietnamese could live without the nominated products. Not one Vietnamese respondent claimed that any appliance was essential for their lifestyle.

The only product Vietnamese thought more essential than Poles did was a mobile phone, which is not surprising given the high rates of ownership of mobile phones by the Vietnamese respondents.

Respondents were provided a product concept called personal toll-free. This concept, developed by Telecom, gives people who live in Australia the opportunity to speak to their families and friends overseas. The person in Australia pays for the cost of the call, even when the call is made from overseas. The product concept is designed for people overseas who do not own a telephone and cannot afford to call families and friends living in other countries.

There was a significant difference \((p < 0.05)\) between Polish and Vietnamese respondents’ willingness to consider adopting the concept. Nearly 66 per cent of Poles were unwilling to adopt personal toll-free, although they were on higher incomes overall than the Vietnamese. In contrast, 28 per cent of Vietnamese respondents may consider, and 40 per cent of respondents would “probably” or even “definitely” consider taking the product concept on board. There was a low degree of association however, between nationality and willingness to adopt the concept.

Contact with family members in “home” country
All Vietnamese and 95 per cent of Polish respondents have families living in their “home” country. The Vietnamese, however, keep in contact more frequently than their Polish counterparts. Of the Vietnamese respondents, 97 per cent keep in contact at least once a month, yet only 45 per cent of Poles contact their families this regularly indicating a significant difference \((p < 0.05)\) between nationalities. There was a high degree of association between nationality and frequency of contact. Overall, there was no significant difference between nationality and methods of keeping in contact.

The measurement of culture
Principal components extraction was performed through SPSS on four variables measuring aspects of culture. These variables addressed issues of frequency of eating the national food, fatality, frequency of religious activity and degree of integration through the living environment. Only one factor was defined with an eigenvalue greater than 1 \((eigenvalue = 2.47571, \text{ accounting for } 61.9 \text{ per cent of the variance})\) and all four variables loaded higher than 0.4 for interpretation. Fatality is included in the factor analysis due to the importance of this measure to the theoretical construct, particularly to the explanation of differences in innovativeness across cultures (Tansuhaj et al., 1991). It can be argued that fatality is a measure of an...
individual’s belief in control of outcomes from environmental forces, with three interval points of “no control”, “limited control” and “control”, and as such its inclusion in the procedure can be justified.

Results of the factor analysis may be found in Table I. This analysis resulted in the identification of a factor called “cultural strength” that could be utilized in further analytical procedures.

The factor analysis revealed that all four dimensions score highly in terms of the adoption behaviour of the two different nationalities. Interestingly, fatality, the belief in man’s ability to control nature, loaded the highest. Fatality can be tied closely to religious values. Eastern religions are more likely to believe that man’s ability to control nature is limited. Western religions such as Christianity are likely to be less skewed in regard to their extent of fatality. The concept of fatality focuses on belonging to an eastern culture, having far less impact on European cultures.

Adopter categories
Respondents were divided into low, medium and high adopters through their adoption of the high technology products studied, and analysis of variance was implemented using category of adoption as the dependent variable and the cultural strength factor determined though factor analysis, nationality, length of time lived in Australia, income and age.

The results of the analysis of variance between adopter groups on these variables across the total sample can be found in Table II. Significant differences were noted on the cultural strength factor, nationality, income and time lived in Australia across the three adopter populations. Migrants from Poland exhibited a higher degree of adoption of high technology products than those from Vietnam. Those who scored lower on cultural strength, higher on income and having lived longer in Australia tended to belong to the higher adopter groups.

The results of the analysis of variance on adopter categories indicate that the cultural factors, nationality, income and length of time in Australia impact on the adoption of technology products. Although religion had an impact on the adoption of new products, it was not as influencing as either traditional ties or fatality beliefs. Other non-cultural factors such as the time someone has lived in Australia and income, however, can also influence the adoption of technology products.

Before regression analysis was undertaken it was important to evaluate the linearity of the relationship between the independent categorical variable of income and the dependent variable of adoption of high technology products in its sequential, not categorical, form. A set of dummy variables was created and regressed as both the independent variable and as an independent set of dummy variables against the dependent variable to test for linearity through examination of the scatter of the residuals of these regressions. While the variable of income was ordered, and represented attributes that change in a quantitative way, it was important to test whether the distance between the categories was in fact an equal measure and that linearity was displayed.

The independent variable of “income” was observed to have a significant and linear relationship with the dependent variable and thus its inclusion in the regression in its original form was justified.

The independent variables of income and the factor of “cultural strength” were entered into a regression equation with adoption of technology as the dependent variable. The significance level for R-squared for the total equation is expressed as F (2,47) = 15.580, p < 0.0001, with both variables contributing significantly and directly to the regression. The addition to adjusted R-squared are presented in Table III.

Together, “cultural strength” and income accounted for 37 per cent of the variance in the dependent variable “adoption of technology products” variance, with β values of 0.4051 and 0.4093 respectively.

Thus, significant and direct effects are noted with the two variables entered into the equation. As expected, there is a strong and significant contribution of cultural strength to total adoption of technology products.

The correlation between cultural strength and nationality (0.8821) excluded nationality from the regression equation. Nationality indicates only the relationship of the respondent to a country of origin outside Australia, whereas cultural strength indicates the extent to which the nationality influences their day to day activities in terms of food eaten, religious activity, integration into the Australian community and the extent to

<table>
<thead>
<tr>
<th>Variables</th>
<th>Loading on &quot;cultural strength&quot; factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of eating national food</td>
<td>0.79383</td>
</tr>
<tr>
<td>Fatality</td>
<td>0.83546</td>
</tr>
<tr>
<td>Frequency of religious activity</td>
<td>0.77975</td>
</tr>
<tr>
<td>Degree of integration in living environment</td>
<td>0.73453</td>
</tr>
</tbody>
</table>
which the concept of fatality intrudes into the decision process.

Initially, a casewise plot of standardized residuals identified one outlier, which was eliminated from the regression equation.

Specific research propositions
Examination of the research propositions has revealed the following:

Vietnamese and Polish cultures have owned high technology products and services for different lengths of time
The chi-square statistics for the length of time of ownership for all nominated technology products is outlined in Table IV.

The probability of chance indicates for most of the nominated high technology products there is a significant difference in the length of time of ownership. Polish migrants have owned many of their products for more than two years. It is important to highlight that there was no significant difference between nationalities in the length of time they had resided in Australia.

The only product Vietnamese were faster to adopt was the mobile phone. This is based on the assumption that Vietnamese require them for trade business.

Reasons why people may adopt or not adopt products were not researched. Therefore, at this stage, the general conclusion based on this data is that for this sample there are different rates of adoption between nationalities for the nominated high technology products.

Vietnamese and Polish migrants display different strengths of cultural ties to their "home" countries
Each nationality displayed cultural ties to their "home" country. Vietnamese, however, displayed stronger ties in almost every cultural factor measured, including eating habits, nationalities in neighbourhoods, language spoken at home, socializing habits, and the importance of religion.

The only variable in which migrants from Poland and Vietnam were not significantly different was in relation to their socializing habits. Interestingly migrants displayed stronger ties to their culture, than their children.

From this analysis, conclusions can be drawn that Vietnamese and Polish differ in the strengths of their cultural ties to their "home" countries. This factor alone, however, does not explain different levels of adoption of high technology products.

Culture, and in particular, "traditionalism", "fatality" and "religion", affects the adoption rates of new products and services for Vietnamese and Polish
The regression equation indicated significant contribution of cultural strength and income to adoption. The factor of "cultural strength"

<p>| Table II |
| Analysis of variance between adopter groups |</p>
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean scores across adopter groups</th>
<th>F (2,47)</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of time in Australia</td>
<td>2.9</td>
<td>4.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Nationality</td>
<td>1.2</td>
<td>1.4</td>
<td>1.9</td>
</tr>
<tr>
<td>Cultural strength (lower factor score)</td>
<td>4.1</td>
<td>0.02</td>
<td>0.87</td>
</tr>
<tr>
<td>Income (four income categories)</td>
<td>1.8</td>
<td>2.2</td>
<td>1.9</td>
</tr>
<tr>
<td>Age (four age categories)</td>
<td>1.85</td>
<td>0.02</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Key:
1 = low adopters; 2 = medium adopters; 3 = high adopters

<p>| Table III |
| Contribution of variables to regression equation (dependent variable = adoption of technology products) |</p>
<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted R-squared</th>
<th>F (eqn)</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural strength</td>
<td>0.22211</td>
<td>14.9906</td>
<td>0.0003</td>
</tr>
<tr>
<td>Income</td>
<td>0.37309</td>
<td>15.5803</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

<p>| Table IV |
| Chi-square statistics for length of time of ownership of products |</p>
<table>
<thead>
<tr>
<th>Variable pairs</th>
<th>Chi-square</th>
<th>D of F</th>
<th>Probability of chance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationality by dishwasher</td>
<td>2.93</td>
<td>3</td>
<td>0.04</td>
</tr>
<tr>
<td>Nationality by VCR</td>
<td>5.48</td>
<td>2</td>
<td>0.06</td>
</tr>
<tr>
<td>Nationality by video camera</td>
<td>2.57</td>
<td>2</td>
<td>0.28</td>
</tr>
<tr>
<td>Nationality by mobile phone</td>
<td>0.39</td>
<td>22</td>
<td>0.82</td>
</tr>
<tr>
<td>Nationality by computer</td>
<td>5.64</td>
<td>3</td>
<td>0.13</td>
</tr>
</tbody>
</table>
accounted for 22 per cent of the variance in adoption of technology, and with income added to the regression, 37 per cent of the variance in adoption behaviour was accounted for.

Limitations of this study lie in the measurement of fatality, and the small sample size. The importance of the measurement of fatality through an interval scale has been identified, and the small sample size restricts the inclusion of several variables in the regression equation.

Discussion

The sample included 50 respondents, 29 Vietnamese and 21 Polish. Although attempts were made to match the two groups of respondents in terms of length of residency in Australia, income, age and sex, there was a significant difference between the income levels of the Vietnamese and Polish respondents. It is important therefore this limitation is recognized when interpreting the findings.

The following tentative conclusions can be drawn from the data. Findings on eating habits and mixes of nationalities in neighbourhoods suggest that Poles are more likely to forgo some of the traditions when migrating to another country. To some degree however both nationalities are holding onto traditions.

It was expected that priorities and traditions will differ between religions. Interestingly, in Poland, 90 per cent of people are practising Roman Catholics yet in this sample of Polish immigrants only 66 per cent are practising to different degrees. This could suggest changing priorities of the Polish as they integrate into their new society, whereas Vietnamese are more likely to pursue traditions associated with their religion.

The “fatality beliefs” concept can be tied to the marketing of high technology products. Individuals who are fatalistic are likely to avoid certain situations, and avoid purchasing high technology products if they do not understand. Tansuhaj et al. (1991) claim that early adopters are less fatalistic than later adopters. It is also suggested that fatalism can influence consumers’ perception of risk and how they handle risk, which in turn could affect their willingness to adopt new products.

These research results, supported by Tansuhaj et al.’s (1991) findings, suggest that the Vietnamese will eventually adopt products, although it is likely to be later than the Polish people. This is demonstrated in the Vietnamese adoption of video players which are reaching the mature stages of the product life cycle.

Studies of each nationality reveal a cultural emphasis on submission of women, although they can become important working partners in times of financial need (Kim, 1976, p. 19). It is interesting that both nationalities nominate women as initiators of purchases for certain categories (e.g. computers, dishwashers), rather than the male as the initiator for all decisions. Also, Polish respondents were more likely than Vietnamese to initiate their purchase decisions through advertising. This suggests it may not be effective using Western advertising techniques for Vietnamese.

There seems to be stronger ties between Australian Vietnamese and those living in Vietnam compared with Australian Polish and those living in Poland. Previous research has shown the importance of the family for Vietnamese (Cohen, 1991; Duncan, 1983; Kim, 1978; Nguyen, 1988; Robinson and Cummings, 1991). In fact, a majority of the consumer goods in Vietnam estimated to be worth more than US$150 million a year, come in the form of gift packages from friends and relatives abroad. These results stress the importance of the family abroad for Australian Vietnamese.

Although it was previously noted that Polish people also have strong ties with their families, this research tends to indicate otherwise. If the majority keep in contact less than three times per year, and there is less awareness about ownership of different products, familial influence is not as strong for Polish immigrants. This suggests that although the family is important to the Polish migrant, it is not as predominant as for the Vietnamese.

Conclusion and recommendations

This research indicates that culture and nationality have an impact on the total adoption of technology products. This study does not however look at the rate of adoption of innovation, and this aspect warrants further study to determine ways in which nationality and the strength of culture can affect the adoption process.

Based on this research the following recommendations are made to marketers of high technology products:

1. Marketers need to understand who will initiate the decision to adopt a high technology product, as well as the role of a particular product in the lifestyle of a particular nationality, not only in the “home” country but also in countries to which these people have migrated.
Since such products require high involvement and information processing, marketers need to understand their audiences and determine the basis on which decisions are made. Research needs to be undertaken by marketers for each market segment, since cross-culturalization can impact on the purchasing behaviour of different groups. Also different components of culture will have varying levels of impact on and the marketer needs to understand how different cultural factors might impact on purchasing behaviour.

This research on adoption of high technology products indicates support for the relationship between culture and adoption. How individual cultural components work within each nationality requires separate clarification. The overall results may differ if products associated with low involvement decision processes had been examined.

This exploratory study arrived at interesting, albeit tentative, conclusions regarding the influence of culture in marketing. Further research needs to be undertaken to quantify the impact of culture on the adoption process which reduces the “noise” from other intervening variables in the buyer adoption process.

References and further reading

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