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Preliminary Study on Willingness to Pay for Environmentally Certified Wood Products Among Consumers in Malaysia

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Abstract: Consumers are expected to demand and would be willing to pay a price premium for environment-friendly products stemming from the growing global environmental consumerism. While consumers in the developed countries are reported to be willing to pay a price premium for environmentally certified wood products, there is hardly any study on consumers' willingness in other markets. This preliminary study examines consumer willingness to pay a price premium for environmentally certified wood products in Malaysia. Data were obtained using a self-administered questionnaire distributed to 100 systematically-sampled, mall-intercepted respondents. Results indicated that some 38% of the respondents would be willing to pay an average of 14.4% more for environmentally certified wood products.

Key words: Wood products, environment, certification, price premium, consumer

INTRODUCTION

Awareness and concern of widespread global environmental degradation has been growing over the last two decades. Utilisation of natural resources, which contributes to the degradation of the earth's environment, has since been under intense pressure to look for alternative materials or their continued use is to comply with certain environment-friendly management standards. Concern over environmental issues has also translated into consumer reluctance in purchasing certain products and their willingness to buy as well as pay more for products seen as less harmful to the environment.

A number of studies on consumer demand and willingness to pay for environment-friendly products have covered products like apples (Loureiro *et al.*, 2002) to wood items (Ozanne and Smith, 1997). Environmental certification of wood products, as a consequence of environmental certification of forest management practices, has its origin from the global concern for the widespread deforestation in the tropics during the eighties. The recognition that forests must be managed in a sustainable manner was formalized in the deliberations of the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992 (Vertinsky and Zhou, 2000).

At this conference, an international commitment was made to work towards the sustainable management, conservation and development of all types of forests.

Wood products entering the international trade are expected to be manufactured of timbers originating from forest areas certified to be managed on a sustainable or environment-friendly practice. The consumers are also expected to demand and pay a price premium, for environmentally certified wood products stemming from the growing environmental consumerism in the major world markets (Mainieri *et al.*, 1997; Strong, 1998; Vertinsky and Zhou, 2000).

Consumers in the developed countries are reported to be concerned with the environmental impact of the products they purchase (Vlosky and Ozanne, 1997; Rowlands *et al.*, 2002; Bigsby and Ozanne, 2002; Moon and Balasubramaniam, 2003) and an increasingly large number of individuals in these markets are willing to pay more for environment-friendly products (Gronroos and Bowyer, 1999; Laroche *et al.*, 2001). A variety of such products, including wood items, are now being offered to consumers especially in North America and Europe (Yam-Tang and Chan, 2000).

While much has been written on consumers in the developed countries, there is hardly any empirical data collected regarding consumer willingness to pay more for environmentally certified wood products in other markets. To provide a preliminary insight into this area, this study is undertaken to determine how much more the consumers in a developing country, like Malaysia, are willing to pay for such wood products. The methodology used in the study is explained in the following section. The third

section presents and discusses the results of the study. Finally, the concluding part summarizes the major points of the study.

MATERIALS AND METHODS

A self-administered questionnaire was used to gather the data for this study. The questionnaire was distributed to systematically-sampled adults in a shopping mall. These adults were selected randomly based on a previously determined criterion that every fifth adult who passed the interviewer were to be solicited. However, only those who have indicated their willingness to participate in the survey were given the questionnaire. A short description on environmental certification of wood products was first presented to the respondents. Prior to indicating the amount of premium they would be willing to pay for environmentally certified wood products, with a base price of RM100 (about US\$25), the respondents were asked whether they would be willing to pay a price premium for such wood products. Demographic information was also collected, whereby the respondents were asked to indicate their gender, age, ethnic group, highest education attained and monthly gross household income at the time of completing the questionnaire.

A total of 100 completed and usable questionnaires were obtained at the end of the survey period. Men (59%) outnumbered women (41%) in the sample, with a large majority of the respondents below 40 years of age. Slightly more than half of the sample (53%) had attained tertiary education and 48% had a gross household income of RM1,000 to RM3,000 a month. Some 44% of the respondents are Malays, followed by Chinese (29%) and Indians (24%). A summary of the demographic profile of the respondents is shown in Table 1. It is

Table 1: Demographic characteristics of the respondents

Variables	Frequency (%)
Gender:	
Male	59
Female	41
Age:	
Young (< 40 years)	85
Middle (40-49 years)	12
Matured (50 years and above)	3
Ethnic group:	
Malay	44
Chinese	29
Indian	24
Others	3
Education:	
Lower secondary and below	9
Higher secondary	38
Tertiary	53
Monthly gross household income:	
Low (< RM1,000)	41
Middle (RM1,000-3,000)	48
High (> RM3,000)	11

important to keep in mind that conclusions reported in this paper are drawn about the sample, not about the population as a whole.

RESULTS AND DISCUSSION

The objective of the study is to determine the price premium consumers would be willing to pay for environmentally certified wood products. Simple frequencies and mean are used to analyze the data on willingness to pay. Only 38% of the respondents have indicated they would be willing to pay a price premium for environmentally certified wood products (Fig. 1). Of these, about 1% indicated that they would pay less than 5% more; 31% said they would pay between 5 to 20% more and 6% indicated that they would pay more than 20% extra for environmentally certified wood products. On the average, those respondents who had indicated their willingness to pay a price premium would pay about 14.4% more for environmentally certified wood products.

The amount of premium that the respondents are willing to pay is relatively high as the price premium for environmentally certified wood products is expected to be in the range from 5-10% (Forsyth, 1998; cited in Vertinsky and Zhou, 2000). However, Veisten (2002) has reported a price premium of less than 2% as for the case of consumers in Britain and Norway. While consumers in the USA, were willing to pay between 4.4 to 18.7% more depending on the value of the wood item considered (Ozanne and Vlosky, 1997).

The remaining 68% of the respondents would not be willing to incur any price premium for environmentally certified wood products. This is not surprising as others have also reported that there are indeed consumers who are not willing to pay any price premium for such wood products (Ozanne and Vlosky, 1997). Gronroos and

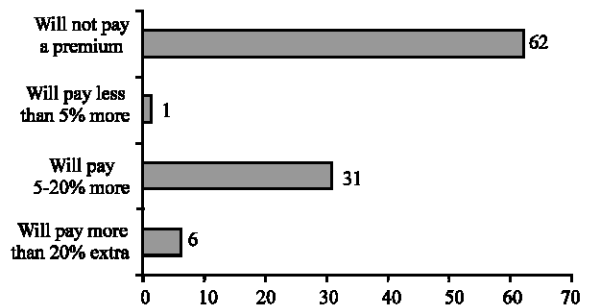


Fig. 1: Respondent's willingness to pay a premium for environmentally certified wood products, with a base price of RM100

Table 2: Respondents' willingness to pay a price premium for environmentally certified wood products, by demographic variables

Demographic variables	Frequency		
	Total number (%)	Would pay a premium (%)	Would not pay a premium (%)
All respondents	100	38	62
Gender:			
Male	59	36	64
Female	41	41	59
(χ^2 of Pearson = 0.354 p = 0.552)			
Age:			
Young	85	38	62
Middle	12	50	50
Matured	3	0	100
(χ^2 of Pearson = 2.577 p = 0.276)			
Ethnic group:			
Malay	44	30	70
Chinese	29	34	66
Indian	24	54	46
Others	3	67	33
(χ^2 of Pearson = 5.196 p = 0.156)			
Education:			
Lower secondary and below	9	33	67
Higher secondary	25	64	36
Tertiary	53	36	64
(χ^2 of Pearson = 0.459 p = 0.795)			
Monthly gross household income:			
Low	41	37	63
Middle	48	38	62
High	11	45	55
(χ^2 of Pearson = 0.299 p = 0.861)			

Bowyer (1999) have also reported that more than 60% of the homeowners surveyed in their study would not pay any price premium for the inclusion of environmentally certified wood products in their homes.

Further analysis was conducted to determine if demographic factors influenced consumers' willingness to pay a price premium for environmentally certified wood products as gender, age, income and education are reported to affect willingness to pay a premium for environment-friendly products (Mainieri *et al.*, 1997; Ozanne *et al.*, 1999; Loureiro *et al.*, 2002; Govindasamy and Italia, 1993; cited in Krystallis and Chrysohoidis, 2005). Even though the analysis shows no statistically significant differences in the number of those would and would not be willing to pay a price premium by demographic variables, some interesting figures are noteworthy (Table 2).

A much higher percentage of female respondents (41%) have indicated they would pay more for wood products that are environmentally certified than males (36%). Laroche *et al.* (2001) reported that gender influences willingness to pay more for environment-friendly products with females outnumbering males in their study of consumers in Canada. Several other studies have also concluded that females are more pro-environment and willing to pay more for environment-

friendly products than males (Mainieri *et al.*, 1997; Ozanne and Smith, 1998; Magnusson *et al.*, 2001; Loureiro *et al.*, 2002; Moon and Balasubramaniam, 2003). Ozanne *et al.* (1999) reported that women in the USA are more likely to say that they would seek out and pay more for environmentally certified wood products.

Respondents in the high household income (45%), middle aged (50%), with a higher secondary education (43%) and of Indian ethnicity (54%) are willing to pay more for environmentally certified wood products than others in their respective demographic groups. These demographic factors, however, are believed not to have an influence on consumers' willingness to pay a higher price for environment-friendly products (Laroche *et al.*, 2001). Ozanne and Smith (1997) also reported that demographic factors, with the exception of gender, are weak predictors of consumer willingness to pay for environmentally certified wood products.

CONCLUSIONS

This study examined Malaysian consumer willingness to pay a price premium for environmentally certified wood products. Despite the large number of respondents expressing their reluctance, it is important to keep in mind that the study found that 32% of the respondents would have been willing to pay more for environmentally certified wood products. These respondents indicated that they would pay premiums averaging 14.4% to obtain environmentally certified wood products. As demographic factors do not to influence consumer willingness, future studies may consider factors like their knowledge, values, attitudes and behaviour as these variables are found to influence consumer willingness to pay more for environment-friendly products (Laroche *et al.*, 2001).

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