

**CUSTOMER ATTITUDES TOWARDS
ENVIRONMENTALLY SOUND WOOD PRODUCTS
IN THREE BRITISH COLUMBIAN HOME IMPROVEMENT MARKETS**

by

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ABSTRACT

Concern regarding the impact of economic activity on the environment has increased in recent years, causing environmental issues to move from the fringes to the centre of the business agenda. In the wood products sector, some observers propose that the increase in environmental concern is leading to changes in customers' attitudes and subsequently affecting their buying decisions as well as the profitability of wood products companies. However, little research has been undertaken to determine customers' attitudes towards environmentally sound wood products.

Marketing experts frequently emphasise the need to know your customers and wood products companies who wish to plan successfully need to know as much as possible about their customers' attitudes towards environmentally sound wood products, such as:

1. the level of importance customers attribute to environmental attributes when buying wood products;
2. customers' attitudes towards the pricing of environmentally sound products; and
3. who are the most likely buyers of environmentally sound wood products.

In this study we explore these three key issues within the home improvement market.

To address these key issues, three hundred customer interviews were completed outside home improvement stores in the province of British Columbia, Canada. Our research found that: 1. customers firstly shop for quality and then price. Environmental product attributes are less important than many other product attributes when customers buy wood products from home improvement retailers. Environmental attributes, however, are still

“somewhat important” when customers make buying decisions; 2. a majority of interviewees (67.3%) expressed a willingness to pay 5% more for certified (environmentally sound) wood products, while a majority (68.0%) also reported that they would not pay 10% more for such products; and 3. the most likely buyers of environmentally sound wood products cannot be readily identified by a set of common characteristics.

While this study is limited in its geographic scope, it provides forest products manufacturers and home improvement retailers (in particular, marketing managers) with a better understanding of customers’ attitudes towards environmentally sound wood products and helps provide a foundation for further research in this important area.

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1. INTRODUCTION

Over recent years, public concern regarding the impact of economic activity on the environment has increased, causing environmental issues to move “from the fringes to the centre of the business and political agenda” (Peattie 6). According to Mintu-Wimsatt and Bradford (293), the prospects of most companies in the 1990s and beyond will be affected more by environmental issues than any other set of issues.

Within the wood products sector, some observers propose that environmental concerns are having a strong affect on customers’ buying decisions (Hammel 26) and that the “time is ripe” for retailers to promote environmentally sound wood products (Winterhalter 5). With an increase in environmental concern and statements such as the above being made, there is a need for wood products companies to determine customers’ attitudes towards environmentally sound products. After all, their future success or failure will largely be determined by the attitudes and product preferences of their customers.

This study aims to explore and critically assess customers’ attitudes towards environmentally sound wood products in the home improvement market; a market comprised of products which are used for the improvement, repair and maintenance of existing residential structures.

1.1 Research Objectives

To date, many of the papers which have been published on environmental issues in the wood products sector have focused on supply-side issues, such as sustainable forest management

and the certification of forest areas¹. Demand-side issues have received comparatively little coverage. This study focuses on demand-side issues and aims to gauge customers' attitudes towards environmentally sound wood products in the home improvement market. More specifically, the study aims to:

- 1. determine customers' attitudes towards the relative importance of environmental attributes in wood products;*
- 2. assess customers' attitudes towards the pricing of these products; and*
- 3. establish possible relationships between demographic characteristics (gender, age and income), place of residence (urban versus rural) and market segment and the likelihood of customers buying environmentally sound wood products.*

Overall, in meeting the above objectives, we aim to provide researchers, home improvement retailers (in particular, marketing managers) and others within the wood products industry with a better understanding of customers' attitudes towards environmentally sound wood products.

1.2 Structure Of Paper

This paper is divided into ten chapters. Chapter 1 provides an introduction and outlines the paper's main objectives, while Chapter 2 details the research methodology adopted. In Chapter 3, the reader is provided with an introduction to environmental marketing, key terms

¹ Certification involves an independent third party providing a stamp of approval to a forest area. The stamp of approval indicates that the forest has met a set of environmental standards.

are defined and a brief history covering the development of environmental marketing in the wood products sector since the 1980s is provided.

Chapters 4, 5 and 6 make use of the available literature to develop the three major objectives of the study. Chapter 4 focuses on customers' attitudes towards environmental product attributes, Chapter 5 concentrates on the pricing of environmentally sound products and Chapter 6 develops a profile of the environmentally conscious consumer (that is, the most likely buyers of environmentally sound products).

Chapter 7 provides details of the market which is the focus of this paper - the home improvement market. The Canadian and British Columbian markets are outlined and the relative importance of wood products within these markets is estimated. Following this, Chapter 8 focuses on environmental wood products in the home improvement market. A discussion of recent research is provided as well as details of recent developments within the market.

In Chapter 9, the results of the primary research associated with each of the three main objectives are discussed. Finally, in Chapter 10, the study's conclusions and recommendations are presented.

It should be noted that this thesis uses the Modern Language Association of America guidebook (Gibaldi) as a style-guide, except where University of British Columbia instructions dictate otherwise (University of British Columbia).

2. RESEARCH METHODOLOGY

2.1 Introduction

To meet the objectives outlined in section 1.1, primary and secondary research was undertaken. The secondary research (literature search and review) was completed first and details are provided in section 2.2. Following the completion of the secondary research, primary research was undertaken. Details of the primary research are provided in sections 2.3, 2.4 and 2.5. Section 2.6 discusses research limitations.

2.2 Literature Search And Review

The literature search focused on obtaining up-to-date information. A comprehensive search of newspapers, journals and text books was undertaken at the University of British Columbia, Vancouver, Canada. In addition, personal contact was made with authors of recent texts to obtain up-to-date unpublished documentation where available. Unpublished conference papers, as well as additional published articles were obtained through these contacts.

In addition to a search of literature available in a paper format, a thorough search for electronic data on the Internet was undertaken. Using key search words, a number of relevant articles were accessed.

From the literature search, a wide range of material was collated. This literature was reviewed and key areas in need of further research were identified. The three main objectives

of this study reflect what are viewed as the three key areas in need of further research (see section 1.1).

2.3 Research Instrument

To enable the key gaps in knowledge to be addressed, a questionnaire was developed to collect suitable information. The questionnaire was originally developed using three texts as guides: Dillman; Fink; and Kotler and Armstrong (100-7). A draft questionnaire was developed and assessed by colleagues (M.Sc. and PhD students) and potential users of the data (consultants and university professors). This pre-testing aimed to determine if any of the questions were misleading, biased or potentially confusing. After the initial pre-testing, the questionnaire was updated to reflect the comments of those who assessed it. The updated questionnaire was then re-assessed by the above mentioned groups, further comments were received and the questionnaire was edited into its final format. See Appendix 1 for a copy of the final questionnaire.

2.4 Data Collection

Data was collected through three hundred personal interviews which were conducted outside home improvement retail outlets. When exiting home improvement stores, customers were asked to take part in the research. The selection of customers asked to take part was undertaken on an indiscriminate basis. At the request of the management at each of the home improvement stores, only those customers carrying loads which would lead to exit areas being blocked were excluded from being asked to take part.

Interviews were structured with all respondents being asked the same set of questions, as detailed in the questionnaire (see Appendix 1). The text of Frey and Oishi was used as a guide to undertaking interviews.

The personal interview technique of data collection was chosen as it offers particular advantages when compared to alternatives such as mail or telephone surveys. In addition to allowing data to be collated relatively quickly, respondent misunderstanding is less likely as the interviewer is able to explain questions (Kozak). The personal interview technique also enables the interviewer to probe and clarify the answers of respondents, thereby enabling a greater understanding of respondents attitudes and opinions.

2.5 Sample

The research sample, consisting of three hundred home improvement shoppers, can be described as a 'judgement sample'. A 'judgement sample' is defined as a sample where the interviewer chooses members of the population which (s)he judges to be good prospects for accurate information (Kotler and Armstrong 105). The three hundred interviewees were considered to be either existing or potential customers of the home improvement retail outlets and were judged to be good prospects for accurate information on customers' attitudes towards environmentally sound wood products in the market.

In terms of geographic coverage, the sample was taken from three cities within the province of British Columbia, Canada - Kelowna, Prince George and Vancouver. One hundred

interviews were completed at each of the three locations. These three locations were chosen to enable a comparison of responses from customers in a large metropolitan, urban area (Vancouver) with responses from customers in smaller rural areas (Kelowna and Prince George). While a comparison of urban and rural responses was the primary reason for choosing the research areas, research in the two rural areas was undertaken to allow further comparisons to be made. Prince George and Kelowna represent rural communities of a different nature. Kelowna is a retirement and tourist area, which has a diversified industrial base (Kelowna Chamber of Commerce). Prince George, however, is a small city which is largely dependent on a single industry - forestry. The forestry sector employs the largest percentage of the work force in Prince George (approximately 18%) and is viewed as the economic base of Prince George (Prince George Regional Development Corporation 4). Appendix 2 provides demographic information for each of these cities.

2.6 Research Limitations

While this study provides a useful insight into the subject area, it is not without its limitations.

Firstly, the study is limited with regard to its lack of product focus. Interviews dealt with wood products in the home improvement market in general. This could be considered a limitation as home improvement retailers sell a wide range of wood products and customers' attitudes may vary between products.

Secondly, the study is limited in its geographic coverage. The study relies on information gathered from three hundred interviews which were conducted in three cities within the province of British Columbia. As such, the geographic spread of interviewees is limited.

Thirdly, the study is limited due its reliance on data gathered in British Columbia, a province largely dependent on forestry and the wood products industry. In 1995, the industry generated, either directly or indirectly, 292,500 jobs, equivalent to 18% of the provincial workforce (Price Waterhouse ii). Due to the province's reliance on the forestry and wood products industry, the respondents may not be representative of a wider population. The research is limited as the findings cannot be inferred on a wider population. In addition, the three hundred interviewees do not represent a random sample of the British Columbian population. As a result, conclusions are made about our sample only.

Lastly, the responses of interviewees to some questions may represent what they believe they should believe as opposed to what they actually believe. As noted by Frey and Oishi (29), interviewees may respond in a socially desirable way to certain questions. For example, interviewees who do not, in reality, consider environmental impact when buying wood products (see question three of research instrument, Appendix 1) may not respond in this way as it may not be viewed as socially acceptable.

While the study is limited in some respects, three hundred interviews with home improvement customers, combined with a comprehensive literature review, is thought to be a sound basis

for this research which provides valuable insights into customers' attitudes towards environmentally sound wood products in the home improvement market.

3. ENVIRONMENTAL MARKETING: AN INTRODUCTION

3.1 Introduction

The information in this chapter provides a background to environmental marketing. An understanding of the following information will enable the reader to understand key concepts and arguments discussed in subsequent chapters. A definition of environmental marketing is provided (section 3.2) as well as details of what constitutes an environmentally sound product (section 3.3). In addition, the development of environmental marketing in the wood products sector since the 1980s is reviewed (section 3.4).

It should be noted that this paper consistently uses the term 'environmentally sound', except where direct quotations use the word 'green'. Where this occurs, the reader should equate a 'green' product with an 'environmentally sound' product.

3.2 What Is Environmental Marketing?

To some, environmental marketing may appear to be a contradiction in terms. The word 'environmental' may bring to mind words such as conservation, preservation, protection and sustainable. In contrast, the word 'marketing' may be more readily equated with activities that encourage increased and possibly unsustainable consumption. According to Mackoy, Calantone and DrÖge, "on one hand, one purpose of environmental marketing is to increase the consumption" of products but "on the other hand, it appeals to consumers'

environmentalist sympathies, which may in part be a reaction against modern patterns of consumption” (38).

Definitions provided by the authors of what are, arguably, the two most comprehensive texts on the subject, describe environmental marketing in a less contradictory manner. Coddington defines environmental marketing as “Marketing activities that recognise environmental stewardship as a business development responsibility and business growth opportunity” (1). Peattie suggests that environmental marketing can be defined as “the holistic management process responsible for identifying, anticipating and satisfying the requirements of customers and society, in a profitable and sustainable way” (28). From these definitions, environmental marketing seems to be less of a contradictory term and appears to have three main characteristics.

Firstly, like conventional marketing, environmental marketing seeks to meet the needs and wants of customers - it is customer orientated. This characteristic is explicit in the definition of Peattie - “satisfying the requirements of customers” (28) - and also expressed in the definition of Coddington. In referring to “Marketing activities” (1), Coddington is referring to those activities which aim to meet the needs and wants of customers - a key element of conventional marketing.

Secondly, again like conventional marketing, environmental marketing is profit orientated. It is viewed as a “business growth opportunity” by Coddington (1) and involves meeting customers requirements in a “profitable” way (Peattie 28).

The third major characteristic of environmental marketing is that it aims to satisfy customers in a way that will reduce or minimise any detrimental impacts on the environment. In this respect, environmental marketing may be said to differ from conventional marketing. Environmental marketing focuses, to a greater degree than conventional marketing, on balancing economic development with the objective of preserving the environment.

Overall, the definition provided by Peattie (28) is thought to best capture the essence of environmental marketing. It is proposed, however, that environmental marketing may not necessarily meet the requirements of customers in a “sustainable way” (Peattie 28) but may meet customers requirements in a way that minimises environmental impacts. As such, in this study, we define environmental marketing as: the management process responsible for identifying, anticipating and satisfying the requirements of customers, in a way which aims to minimise environmental impacts and generate profit.

3.3 What Is An Environmentally Sound Product?

An American environmental labelling organisation called Green Seal awards a ‘Green Seal of Approval’ to environmentally sound products (Green Seal 1). The ‘Green Seal of Approval’ is given “to products that cause less harm to the environment than other similar

products....less harm as they're manufactured; less harm as they're used; and less harm when they're disposed of or recycled" (Green Seal 1). Providing a similar description, Peattie outlines that a product may be defined as "green" when "its environmental and societal performance, in production, use and disposal, is significantly improved and improving in comparison to conventional or competitive product offerings" (181).

Both of the above descriptions highlight two important characteristics of environmentally sound products. Firstly, the product's performance before, during and after use is key to the product being deemed environmentally sound. Traditionally, marketers have been concerned with a product's performance during use only (Peattie 183). For example, chemically treated wooden fence posts would be marketed according to their strength and durability - attributes important during use. However, a marketing manager who wishes to develop an environmentally sound product needs to assess the product's attributes before, during and after use (Peattie 183). In the case of fence posts, the marketing manager may be concerned with the source of the raw material (for example, whether or not the wood came from a sustainably managed forest) and the environmental impact of the product after use (for example, whether or not chemicals contained in the post are biodegradable). These before and after-use attributes will be assessed, together with the product's attributes during use, to determine if the product is environmentally sound or not.

The second key characteristic is that a product will be deemed as environmentally sound in relation to competing products. Green Seal outline that products which are given the 'Green

Seal of Approval' are assessed in relation to similar products - "less harm to the environment than similar products" (1). Peattie also says that the product's performance is assessed in comparison to "conventional or competitive product offerings" (181). As a result, what is viewed as environmentally sound may change over time as competitors update their products. For example, products which are currently produced using wood from a certified forest are viewed as environmentally sound. At present, comparatively few wood products come from certified forests and in mid-1995 just 0.08% of the world's forest and wooded land area was certified (calculated from Upton and Bass 201-11; FAO ix). In the future, however, if it becomes common for products to be manufactured using wood from a certified forest, these products may not be viewed as environmentally sound. Their environmental performance may not be "improved and improving in comparison to conventional or competitive product offerings" (Peattie 181).

In summary, a wood product may be defined as environmentally sound when its environmental performance - before, during and after use - is improved when compared to competing products.

During the course of the research for this study, a number of wood products were found to be either marketed as environmentally sound or judged as environmentally sound by other researchers. While Appendix 3 contains a listing of these products, examples include:

1. salvaged/recycled lumber used for the construction of houses (Lavendel 15);

2. lumber, doors, veneers, furniture and other products which use wood from a certified forest; and
3. chipboard made from shredded discarded drinks cartons (Peattie 204).

3.4 Environmental Marketing In The Wood Products Sector

Companies in the wood products sector are now able to harvest their certified forest using low impact logging equipment which was designed to harvest, measure and pile trees with minimal damage to the forest floor. These vehicles may use biodegradable oils and transport in the forest can be along roads which were constructed using biodegradable textiles. From the forest, a haulage contractor which has implemented an environmental transport program may take the wood to the sawmill where it can be manufactured into a variety of environmentally sound wood products. All of this may be undertaken within the confines of environmental legislation and operational codes, much of which did not exist fifteen to twenty years ago (for example, the Forest Practices Code in British Columbia, Canada).

While the above scenario does not represent the industry norm, it does indicate what is possible and reflects the extent to which the industry has been affected by environmental issues. So, why have such changes taken place?

Environmental disasters during the 1980s, such as the chemicals disaster in Bhopal, led to increased media coverage and an increase in the general public's awareness of, and concern for, the environment (Ozanne and Smith 442; Sheth and Parvatiyar 3-5). In addition, a

number of reports highlighting issues such as global warming and deforestation in certain areas have also led to an increase in the public's concern (Peattie 6). This increase in concern is reflected by the fact that between 1980 and 1994, the memberships of environmental organisations more than doubled (Winterhalter 1). Environmental concern is thought to have been translated into increased environmental pressure on companies who are viewed to threaten the environment through economic development. This pressure has been applied by environmental organisations, such as Greenpeace and the World Wide Fund for Nature, as well as by customers (Dudley, Jeanrenaud and Sullivan 140).

Since the 1980s, many companies are thought to have reacted to the increase in environmental pressure either by ignoring it or developing a 'greenwash' approach (Dudley, Jeanrenaud and Sullivan 140). In the initial stages, companies may have largely ignored environmental pressure, viewing it as unimportant or unfair. Some companies may have regarded increased environmental concern as a passing fad, a concern raised by a minority of the population which represented a small proportion of the company's market. Marketing managers of such companies may have remarked - "The costs associated with developing and marketing environmentally sound products for a small market segment whose tastes may change in the near future are too high. Let us wait and see how things develop".

Greenwash refers to the situation when a company markets and claims their products are produced in an environmentally sound way without being able to substantiate these claims (Dudley, Jeanrenaud and Sullivan 140). An increasing number of companies, including those

who had previously ignored environmental pressure, are thought to have developed greenwash approaches since the 1980s. While such marketing tactics are considered to have been largely successful over the past five to ten years (Dudley, Jeanrenaud and Sullivan 140), they appear to be coming under attack.

Since 1990, the World Wide Fund for Nature (WWF) in the United Kingdom (UK) has monitored the environmental marketing claims of many timber companies. In a study of 626 companies, WWF (UK) found that only three “were prepared to make a serious attempt to justify their claims” (Dudley, Jeanrenaud and Sullivan 141). While this study does not necessarily mean that the majority of companies (623 or 99.5% of those assessed) made false claims or were unable to substantiate their claims, further investigations do show this to be the case for some organisations². WWF (UK) has made complaints against the ‘environmental’ advertising campaigns of many timber organisations, including the Malaysian Timber Industry Board and Magnet Trade (the UKs largest supplier of doors, windows, kitchens and bedrooms). In these two cases, as well as others, the complaints were upheld (by independent advertising authorities), advertising campaigns were stopped and adverse publicity and increased costs were encountered by the organisations promoting the ‘environmentally sound’ products.

² The WWF (UK) study represents the views of WWF (UK) and does not mean that the companies who did not “make a serious attempt to justify their claims” (Dudley, Jeanrenaud and Sullivan 141) in the eyes of WWF (UK) were actually unable to justify their claims.

In addition to increased investigation by environmental organisations, the products and marketing campaigns of wood products companies are coming under increased scrutiny from some customers. According to Smith, "Increasingly, customers are asking questions about the environmental impact of using wood products in building projects" (8). Further to this, Hammel proposes that "Concern for the environment is having a strong effect on consumers purchasing decisions" (26).

With an apparent increase in the level of scrutiny which is being put on environmental marketing campaigns, it appears that there is an increasing requirement for clearer evidence that wood products have been produced in an environmentally sound way. As environmental claims are put under the microscope, companies in the future may have to increasingly provide more information to prove that their claims are thorough and genuine.

3.5 Summary

Since the 1980s, environmental issues have gained importance in the wood products industry. At present, we are able to buy a range of wood products which are marketed as environmentally sound (see Appendix 3). Some environmental marketing campaigns associated with these products may be false, others may be unclear. What is clear, however, is that concern regarding the environment has increased. As a result, environmental marketing is now a key issue with regard to the marketing of wood products. According to Kotler and Armstrong, we have reached a stage where "environmental issues have become so important

in our society that there is no turning back to the time when few managers worried about the effects of product and marketing decisions on environmental quality” (637).

4. CUSTOMER ATTITUDES TOWARDS ENVIRONMENTAL PRODUCT ATTRIBUTES

4.1 Introduction

This chapter focuses on key issues associated with the first major objective of this study:

to determine customer attitudes towards the relative importance of environmental attributes in wood products in the home improvement market.

In this chapter, we outline the importance of customer attitudes towards product attributes and detail why it is important for companies to determine the attitudes of their customers (section 4.2). In addition, research which has assessed customer attitudes towards the attributes of wood products is discussed (section 4.3).

4.2 The Importance Of Customer Attitudes

As with any product, the success or failure of environmentally sound wood products will depend on customers' attitudes towards the product's attributes - will customers view environmentally sound wood products favourably or unfavourably?

Multi-attribute models of customer attitudes recognise that buying decisions are determined by customer's attitudes towards a variety of product attributes. As outlined by Assael (198), multi-attribute models are based on the premise that beliefs about a product's attributes and the values placed on these beliefs will result in an overall evaluation of the product that will, in

turn, result in a positive or negative intention to buy, and ultimately result in a customer buying or avoiding a product. Following this premise, individual product attributes and customer's attitudes towards these attributes are key to whether or not the customer will buy a product.

According to Kotler and Armstrong (150), prior to making a buying decision, customers may evaluate alternative/competing products. When evaluating alternatives, customers look for certain benefits that can be obtained by buying a product. The customer views a product as a collection of product attributes "with varying capacities for delivering these benefits" (Kotler and Armstrong 150) and satisfying the customer's needs.

With regard to wood products, attributes which may be assessed include: price, appearance, species, brand name, grain pattern, design, quality, strength, size of knots, availability and the source of the wood. While wood products have many attributes, customers will pay most attention to those attributes which are most closely connected with their needs. One possible scenario is that a hierarchical list will be developed in the customer's mind with key attributes at the top of the list having a greater degree of influence on the buying decision than those at the lower end of the list. Following the development of a hierarchical list, the customer is likely to evaluate each attribute for each alternative product (Kotler and Armstrong 151).

For example, if we assume a customer is looking for a wooden shelving unit and is primarily interested in four main product attributes: 1. price; 2. size; 3. species; and 4. the source of the wood (whether it is from a sustainably managed forest or not).

The customer may have looked at various shelving units but narrowed the choice down to four alternatives - A, B, C and D. Table 4-1 contains information regarding the customer's ratings, on a ten point scale, for each of the four alternatives (A, B, C and D), according to the four key attributes (price, size, species and the source of the wood). The number ten represents the highest desirable score for a given attribute. With regard to price, a high number represents a low price, indicating the unit to be more desirable.

Table 4-1

Customer's Evaluation of Wooden Shelving Unit

Shelving Unit	Price	Size	Species	Source
A	9	8	6	3
B	7	6	6	7
C	6	9	8	9
D	5	7	8	10

Source: Developed from Kotler, P, and G. Armstrong. Principles Of Marketing. 5th ed. (London: Prentice Hall International Inc., 1991) 151.

For shelving unit A, the customer believes that it is inexpensive (9), of a desirable size (8), made of a relatively desirable species (6), but is from a relatively undesirable forest source (3). The attitude of the customer towards the first three attributes of shelving unit A are favourable. However, the customer views the fourth attribute (the source of the wood) unfavourably. Whether or not this one unfavourable attribute is enough to stop the customer from buying shelving unit A, we do not know. We do know, however, that if we can improve the performance of the product in terms of the fourth attribute without adversely affecting the three other key attributes, we are more likely to make a sale. (The customer has attitudes regarding how the other wooden shelving units rate on the given attributes and these are detailed in Table 4-1).

While it is recognised that customers may not generally go through such a systematic process, the above example is useful in highlighting a key point - customers tend to select key product attributes which are used to assess products and make buying decisions. In the above example, the customer selected price, size, species and the source of the wood as key attributes. Other attributes, such as brand name, may have been towards the lower end of the customer's list, thereby playing a smaller part in the buying decision.

The success of the home improvement retailer is largely dependent on stocking products which customers will decide to buy. In an effort to stock products which customers will buy, it is useful for home improvement retailers to identify those attributes which are of key importance in the buying decision. If home improvement retailers can identify those key

attributes, they can take steps to influence customer's buying decisions by stocking and promoting products which have these attributes.

With regard to wood products, if customers attitudes indicate that environmental attributes are key attributes and are of primary importance in their buying decisions, then home improvement retailers would be well advised to stock and promote environmentally sound wood products.

4.3 Recent Research In The Wood Products Sector

Although no research appears to have been undertaken to determine customers' attitudes regarding the relative importance of environmental attributes in wood products sold in the home improvement market, research has been completed in other wood products markets.

In a study of consumers' attitudes towards environmentally marketed wooden household furniture, Ozanne and Smith (465) asked respondents to evaluate the importance of twenty-four product attributes when considering buying furniture. Of the twenty-four product attributes assessed, four were environmental attributes: 1. overall environmental impact, 2. certification of environmental friendliness; 3. wood from a sustainably managed forest; and 4. the origin of wood (tropical versus temperate) (Ozanne and Smith 465). As detailed in Table 4-2, these attributes ranked eighteenth, twentieth, twenty-second and twenty-third respectively. As such, Ozanne and Smith concluded that, by themselves, these environmental

product attributes were “relatively unimportant to...study respondents in their furniture buying decisions” (468).

Table 4-2

Importance of Wooden Furniture Attributes

Rank	Attribute	Rating ^a	Rank	Attribute	Rating ^a
1	Quality Construction	4.55	13	Satisfying	3.95
2	Durable	4.47	14	Warranty	3.71
3	Quality Materials	4.45	15	Firm Reputation	3.38
4	Attractive	4.36	16	Grain Pattern	3.25
5	Good Value	4.28	17	Straight Grain	2.91
6	Finish	4.25	18	Environmental Impact	2.85
7	Practical	4.24	19	No Knots	2.84
8	Wear Resistant	4.02	20	Environmentally Certified	2.70
9	Solid Wood	4.01	21	Brand Name	2.66
10	Goes with Decor	4.01	22	From Sustainable Forest	2.57
11	Style	4.00	23	Origin of Wood	2.46
12	Price	3.97	24	Status	1.76

Source: Ozanne, Lucie K. and Paul. M. Smith. “Consumer Segments for Environmentally Marketed Wooden Household Furniture.” *Wood and Fiber Science* 28.4 (1996): 466.

^a Respondents’ answers were given on a five point scale from: 1. not important at all, to 5. extremely important.

Within the home improvement market, Lober and Eisen (40) outline that price, quality and function have always been the key considerations of customers when evaluating products, not environmental attributes. Research undertaken by Moresby also indicates that environmental product attributes may not be of primary importance when customers buy wood products. Following telephone interviews with 410 lumber retailers in America, Moresby (6) concluded that none of the respondents thought that the environmental performance of the producer was significant in their customers buying decisions. Price, quality and availability were proposed to be the key product attributes which customers considered in their buying decision - not environmental attributes. While this is proposed, Moresby also concluded that "lumber retailers are sensitive to their customers demands, and if the high awareness of environmental issues begins to translate into consumer choice, retailers will respond" (8).

One of the main objectives of the primary research undertaken for this study is to gauge the relative importance of environmental attributes in customers' buying decision. Customers' attitudes regarding the relative importance of environmental attributes will help determine whether or not there is a need for retailers to respond to their customers and provide more environmentally sound wood products.

4.4 Summary

Individual product attributes can be key to whether or not a customer decides to buy a particular product. As a result, there is need for companies to determine their customers' attitudes towards product attributes and determine the relative importance of these attributes.

With regard to environmentally sound wood products, the results of such research will enable marketing managers to determine if environmental product attributes are important to customers, thereby providing an insight into whether or not environmentally sound wood products are likely to be successful in the market.

5. ENVIRONMENTALLY SOUND WOOD PRODUCTS: COSTS AND PRICES

5.1 Introduction

An area of much debate regarding environmentally sound wood products is whether or not customers are willing to pay higher prices for them. In this chapter, we outline the cost implications of developing environmentally sound wood products (section 5.2) and discuss whether or not customers are likely to pay more for these products (section 5.3).

The discussion provided in this chapter focuses on providing background information specific to the second major objective of this study:

to assess customers' attitudes towards the pricing of environmentally sound wood products in the home improvement market.

5.2 Costs

While the development of an environmentally sound wood product does not necessarily mean an increase in costs, many such developments do lead to increased costs. These may occur in a variety of ways, including increased forest management costs and increased capital equipment costs.

Forest management costs may increase as companies devote more resources to managing forests in a more sustainable (environmentally sound) way. As outlined by Upton and Bass (xviii), sustainable forest management is a key aim of certification. The certification of a

forest area means increased costs for the owner and Mater (36) proposes that it can cost between US\$10,000 and US\$100,000 per forest³.

Costs may also increase as companies need to invest in new, or update existing, equipment. The Technical Association for the Pulp and Paper Industry states that every year, pulp and paper companies spend “millions of dollars retrofitting, rebuilding, and re-engineering existing equipment and processes to utilize increasing levels of recycled fiber” (58). In an effort to make products more environmentally sound, these companies incur increased capital costs. In addition, Collins Pine incurred capital equipment costs of US\$750,000 over a three year period as part of the certification of forest areas (Punches).

It is important to note that while the development of environmentally sound products may lead to increased costs, companies who do not take such action may also incur increased costs. Union Carbide incurred costs of over US\$3 billion after the Bhopal chemicals disaster (Peattie 282) and a number of wood products companies have incurred increased costs as a result of non-compliance with environmental regulations. In British Columbia, companies which have been fined for non-compliance with environmental regulations include: Doman Industries Ltd (CDN\$330,000); Interfor (CDN\$206,000); MacMillan Bloedel Ltd (CDN\$282,300); Repap Enterprises Inc. (CDN\$105,600) and Weldwood of Canada Ltd (CDN\$288,000) (Plynn C1-2).

³ It should be noted that both American and Canadian dollars are used in this document. The currency quoted is dependent on the currency used in secondary source from which the information was taken. American dollars are denoted as US\$, while Canadian dollars are denoted as CDN\$.

It should also be noted that the development of environmentally sound products can lead to a reduction in costs. Companies can develop environmentally sound products using systems which reduce costs by minimising waste or creating saleable by-products (Peattie 281).

McKeague (D1-2) also highlights this point, proposing that the development of environmentally sound practices and products can lead to improvements in both the environmental and financial performance of companies.

While the development of environmentally sound products can lead to a decrease in costs, many companies who develop such products incur higher costs.

5.3 Pricing

Where increased costs are incurred, it is desirable to charge an increased price to cover these costs. In their discussion of environmentalism and its effect on marketing, Kotler and Armstrong propose that: "Marketers must check into the ecological properties of their products and packaging. They must raise prices to cover environmental costs, knowing that the product will be harder to sell" (637). While Kotler and Armstrong propose that prices "must" be raised, this may not always be possible. Will customers pay higher prices for environmentally sound products?

As reported by Peattie (285), an international Gallup poll found that the majority of those surveyed in many countries expressed a willingness to pay higher prices to protect the environment. Table 5-1 contains details of the results of the Gallup poll for selected

countries, including Canada, Great Britain and the USA. The figures presented for Canada, Great Britain and the USA, indicate that between 60% and 70% of the population in these countries are willing to pay more. In addition to the apparent willingness of respondents in Canada, Great Britain and the USA to pay more, the poll found that many other respondents in other countries expressed a willingness to pay more, including respondents in: Chile, India, Mexico, Norway; the Republic of Korea and Switzerland.

Table 5-1

Willingness to Pay Higher Prices to Protect the Environment

Country	Percentage of Respondents Expressing a Willingness to Pay More
Canada	61%
Chile	64%
Great Britain	70%
India	56%
Korea (Republic of)	71%
Mexico	59%
Norway	73%
Switzerland	70%
USA	65%

Source: Peattie, Ken. Environmental Marketing Management: Meeting the Green Challenge, (London: Pitman Publishing, 1995) Table 16.2.

Other studies have also found that customers are expressing a willingness to pay higher prices for environmentally sound products. Upton and Bass (44) cite a UK Consumers Association study which found that 81% of respondents expressed a willingness to pay more for products that were environmentally less damaging; Hopfenbeck (185) describes a study by Emnid which concluded that 75% of those surveyed would pay more; di Benedetto and Chandran (270) cite a study completed by Gerstman and Meyers which found that more than half of those surveyed were willing to pay 15% more for a product with an environmentally sound package; and Cooper, Kalafatis and Tsogas (140) detail a Mintel study which stated that 27% of British adults would be prepared to pay up to 25% more for environmentally sound products. Overall, a number of studies have concluded that many customers are expressing a willingness to pay higher prices for environmentally sound products.

In the wood products sector, fewer willingness to pay studies have been completed. An American study which focused on affluent customers (all of whom had an income of more than US\$50,000), found that 68% of respondents expressed a "willingness to pay more for furniture whose construction materials originated from a sustainably managed North American forest" (Winterhalter and Cassens, 1994, 5). In another study, Irland (34) found that 16% of home wood workers expressed a willingness to pay more for certified wood. Further to this, Ozanne and Vlosky (160-1) cite a WWF study which concluded that customers are expressing a willingness to pay more for wood products which use wood from sustainable sources - on average, customers said they were willing to pay 13.6% more. Results of some studies

indicate that customers, both within the wood products sector and more widely, are expressing a willingness to pay more for environmentally sound products.

While several willingness to pay studies indicate customers will pay more, such studies have their critics. As outlined by Ozanne and Vlosky (161), critics such as McKillop do not believe that willingness to pay studies reflect reality. It is proposed that, although customers say they will pay more for environmentally sound products, in reality, they are unlikely to do so - there is a "low degree of attitude-behavioural consistency" (Smith and Haugtvedt 156). This argument is supported by the research of Gleason, de Alba and Fish (37). While their research found that 75% of survey respondents said they were willing to pay more for a more environmentally sound electricity supply (wind generated electricity), results of a market simulation study, which sampled more than four thousand customers, suggested that less than 5% of customers could be expected to actually pay a price premium.

With criticism of willingness to pay studies evident, an effort was made to identify examples where customers have actually paid more for environmentally sound wood products. Eight examples were found. Table 5-2 provides summary details of these examples, while Appendix 4 provides further information.

Table 5-2

Environmentally Sound Wood Products which have Achieved Premium Prices

Company	Product
Collins Pine	Shelving (from certified forest)
Yankee Windows	Windows (from certified forest)
Jonathan Orpin	Recycled/salvaged lumber
Buchner Panel Manufacturing	Fitches (from certified forest)
Seven Islands Land Company	Logs (from certified forest)
Dartington Estate Woodlands	Logs (from certified forest)
Universal Office Supplies	Notebooks
Mellitta Coffee Filters	Coffee filters (unbleached)

Source: Various (see Appendix 4).

From the research undertaken (see Table 5-2), customers have reportedly paid higher prices for environmentally sound logs, shelving, windows, lumber, fitches⁴ and paper products.

Although these examples do not enable us to determine what proportion of customers will actually pay more, they do provide evidence that some customers are actually willing to pay premium prices for environmentally sound wood products.

⁴ A fitch is a “product cut from a log by sawing on two sides and leaving two rounded sides” (Random Lengths 109).

While some environmentally sound wood products have achieved premium prices and a number of studies conclude that customers are willing to pay more, some observers remain sceptical. With regard to certified wood products, Upton and Bass propose that there is “no convincing evidence that price premiums exist” (45) and that “in all likelihood, most buyers are not prepared to pay a price premium for certified wood and paper products” (46). Brown and Hammel also appear to follow this viewpoint: “A question frequently raised is whether certification results in higher prices in the marketplace. The answer is no” (100).

In the home improvement market, Mark Eisen, Environmental Director of The Home Depot, has stated that The Home Depot will not “pay one cent more for certified products unless... customers express their willingness to do so” (95). Despite the many studies which proclaim that customers are expressing a willingness to pay more, the Environmental Director of North America’s largest home improvement retailer appears to be unconvinced.

In addition to the views of Mark Eisen, research undertaken by Vlosky and Ozanne also indicates that customers in the home improvement market may not be willing to pay more for environmentally sound wood products. From their research, which assessed the views of 121 home improvement retailers in America, Vlosky and Ozanne (207) concluded that home improvement retailers felt that their customers would be not be willing to pay a price premium for certified wood products.

The ability of retailers to charge premium prices in the home improvement market may be limited by many factors, including the price sensitivity of customers. According to Church, home improvement customers are “willing to drive out of their way to pay less” (B3). In addition, an article (“Shoppers Grow More Diverse”) in the industry journal National Home Center News states that customers are demanding lower prices. Such reports indicate that price, as opposed to the environment, may be key to customers buying decisions. If one retailer decided to introduce and charge higher prices for environmentally sound wood products, the price sensitive customers may simply “drive out of their way to pay less” (Church B3). This argument is supported by the comments of Eisen who states that “The Home Depot cannot support higher costs or prices alone” (98). Eisen also states that, in the future, an increasing number of producers and retailers will sell certified wood products and that “the marginal costs of certification will ultimately be borne by the customer, and all producers and retailers will have ratcheted up their cost/price structures to a new level” (98). It is interesting to note that Brown and Hammel of Scientific Certification Systems - an independent third-party certification company which has an alliance with The Home Depot - say “The answer is no” (100) to those who ask if certification will lead to higher market prices.

5.4 Summary

Views on whether or not customers will pay more for environmentally sound products are conflicting. Some observers report that the majority of customers are expressing a willingness pay more, while, in reality, other observers see little chance of higher prices being paid.

A review of literature does not enable any firm conclusion to be drawn on whether or not customers in the home improvement market are actually willing, or even expressing a willingness, to pay more for environmentally sound wood products. As such, there is a need for research specific to the market to determine the likelihood of customers paying higher prices. The primary research undertaken in this study aims to address this issue within the home improvement market (see section 9.5 for results of primary research).

6. THE ENVIRONMENTALLY CONSCIOUS CUSTOMER

6.1 Introduction

When companies market products, they generally focus their marketing effort on a specific market segment or segments with the aim of generating the highest level of profit per dollar spent. In the pursuit of the highest level of profit per dollar spent on marketing, it is desirable to identify those customers who are the most likely buyers of the product.

The identification of the most likely buyers of environmentally sound wood products in the home improvement market is the third major objective of this study and, in this chapter, we outline research associated with this objective.

6.2 Identifying Environmentally Conscious Customers

A wide range of characteristics have been used in an effort to identify environmentally conscious customers (Cornwell and Schwegler 126-7). These include demographic, socio-economic, cultural, and personality variables as well as customers' attitudes and environmental knowledge. According to Cornwell and Schwegler (127), research findings have been inconsistent and many studies have been inconclusive.

In this study, we focus on five main variables:

1. age,
2. income,

3. gender,
4. place of residence (urban versus rural), and
5. market segment (consumer versus professional).

The first three variables are demographic variables (Kotler and Armstrong 43). In a study of 'The Impact of Green Issues on the Development of Timber Based Furniture', Cooper, Kalafatis and Tsogos (148) studied the same three variables. From their research they concluded that "there is no clear relationship between consumers' intention to buy environmentally friendly products and socio-demographic characteristics" (154).

Outwith the wood products sector, Cornwell and Schwepker (128-31) identified ten studies which used demographic and socio-economic variables to identify environmentally conscious customers. According to Cornwell and Schwepker, "While the findings are inconsistent, the ecologically concerned consumer tends to be white, better educated, higher in income, higher in occupation status, and higher in socio-economic status" (127). Coddington (84) proposes that, in general, people with higher incomes tend to be "greener" and that females tend to be more environmentally conscious than males. These two relationships are somewhat supported by The Roper Organisation in their segmentation of environmentally conscious customers (see Table 6-1). As can be seen from the information in Table 6-1, the most likely buyers of environmentally sound products (that is, the "True blue greens" and "Greenback greens")

have higher median incomes and consist of higher proportions of females than the less likely buyers of environmentally sound products (that is, “Grouzers” and “Basic Browns”)⁵.

Table 6-1

Environmental Customer Segmentation^a

Segment	Median Income	Female	Median Age	Executive/ Professional
True Blue Greens	US\$32,100	66%	44	25%
Greenback Greens	US\$31,600	58%	34	17%
Sprouts	US\$32,000	52%	42	22%
Grouzers	US\$24,900	54%	39	13%
Basic Browns	US\$21,200	45%	42	11%

Source: Simon, Françoise L. “Marketing Green Products in the Triad.” *The Columbia Journal of World Business Fall & Winter (1992): 275.*

^a The above segmentation was developed for the American market.

In the wood products sector, the findings of research completed by Ozanne and Smith (471) also suggests a relationship between income and the likelihood of customers buying environmentally sound products. From the responses of 1,410 households in the United States, Ozanne and Smith identified two market segments likely to buy environmentally sound

⁵ Names (“True blue greens”, “Greenback greens”, “Grouzers” and “Basic browns”) were developed by The Roper Organisation and are based on the likelihood of different market segments buying environmentally sound products.

wooden furniture. One group was described as 'Environmentally Conscious but not Price-Sensitive' and the other group was described as 'Environmentally Conscious but Price-Sensitive' (Ozanne and Smith 471). The former group comprised of highly educated (college graduate or higher), high earners (US\$60,000 or more) who were members of the Democratic party and an environmental organisation. The latter group, was more moderately educated (some college education) with more moderate, but still relatively high, incomes (US\$40,000 to US\$59,999). The individuals in the latter group were also, generally, members of the Democratic party. The two groups who are proposed as the most likely buyers of environmentally sound wooden furniture represented approximately 39% of all respondents. Both groups were characterised by relatively high incomes.

In addition to assessing possible relationships between customers' demographic characteristics (gender, age and income) and the likelihood of them buying environmentally sound products, this study aims to establish whether or not the likelihood of customers buying environmentally sound products is related to their place of residence (urban versus rural). In the past, this relationship has often been overlooked by researchers investigating environmentally conscious customers and, where it has been investigated, results have been conflicting (Cornwell and Schwegker 135). Also noted by Cornwell and Schwegker (135) are the arguments of Tremblay and Dunlap who propose that urban residents should be the most concerned about the environment as they are generally exposed to higher levels of environmental degradation (for example, pollution). In research undertaken by Cornwell and Schwegker (145), this

relationship was found, with those living in large cities more likely to purchase ecologically packaged products than their counterparts in more rural areas.

6.3 Summary

Overall, a review of literature highlights two main points. Firstly, the results of past studies are inconsistent and no firm conclusions can be drawn on whether or not relationships exist between customers' demographic characteristics, their place of residence and the likelihood of them buying environmentally sound products. Second, it is apparent that past research has not assessed the home improvement market. As a result, there is a need to assess possible relationships in this market. The third major objective of this study addresses this need and results of the primary research are presented in section 9.6.

7. THE HOME IMPROVEMENT MARKET

7.1 Introduction

The home improvement market is comprised of products which are purchased for the improvement, repair and maintenance of existing residential structures (Home Improvement Research Institute, 1997a, 2). Such products include: electrical supplies, garden equipment, glass, hardware, lumber, paint, plumbing supplies, tools, and wallpaper.

In this chapter, we outline the home improvement market in terms of market size, the main market segments and the proportion of the market accounted for by wood products. Section 7.2 provides details for the Canadian market, while section 7.3 focuses on the British Columbian market. The overall aim of this chapter is to provide the reader with a background to the market in which we are assessing customers' attitudes.

7.2 The Canadian Home Improvement Market

7.2.1 Market Size

According to the Home Improvement Research Institute (1997a, 3), sales of all home improvement products in Canada totalled US\$8.2 billion in 1995⁶. In the future, the market is estimated to increase substantially, with sales estimated to equal US\$11.7 billion in 2000.

⁶ All figures in this chapter are expressed in American dollars. This is due to the fact that market statistics are supplied by the Home Improvement Research Institute - an American based organisation.

This is equivalent to an overall increase of US\$3.5 billion (43%) or an annual average increase of US\$700 million (7.4%) between 1995 and 2000 (see Table 7-1).

Table 7-1

The Outlook for the Canadian Home Improvement Market

Year	Sales	Annual Increase	
		US\$ billion	Percentage
1995	8.2		
1996 ^e	8.5	0.3	3.7%
1997 ^e	9.7	1.2	14.1%
1998 ^e	10.7	1.0	10.3%
1999 ^e	11.3	0.6	5.3%
2000 ^e	11.7	0.4	3.5%

Source: Home Improvement Research Institute. "The Outlook for the Home Improvement Products Market: Canada." Fax to the author. (Home Improvement Research Institute, 1997a).

^e is an abbreviation for estimate.

7.2.2 Market Segments

The home improvement market can be divided into two customer segments: the consumer segment and the professional segment. The consumer segment represents those customers who purchase products for the maintenance, repair and improvement of their own homes. Customers in this segment may install the products themselves or hire a professional to

undertake the work. The professional segment represents those paid professionals who purchase products to undertake contractual work in the houses of their customers (Home Improvement Research Institute, 1997b, 1).

According to the Home Improvement Research Institute (1997a, 3), the consumer market accounted for 62% of total sales in 1995 and the professional market accounted for 38%. In the future, it is estimated that the consumer segment will increase at a greater rate than the professional segment, accounting for 64% of total sales in 2000 (Home Improvement Research Institute, 1997a, 3). Table 7-2 contains details of annual sales figures for each segment for the period 1995 to 2000.

Table 7-2

The Outlook for the Consumer and Professional Market Segments

Year	Sales Revenue (US\$ billion)		
	Consumer Market	Professional Market	Total
1995	5.1	3.1	8.2
1996 ^e	5.3	3.2	8.5
1997 ^e	6.1	3.6	9.7
1998 ^e	6.9	3.8	10.7
1999 ^e	7.3	4.0	11.3
2000 ^e	7.5	4.2	11.7

Source: Home Improvement Research Institute. "The Outlook for the Home Improvement Products Market: Canada." Fax to the author. (Home Improvement Research Institute, 1997a).

^e is an abbreviation for estimate.

As detailed in Table 7-2, the Home Improvement Research Institute estimates that the professional segment will increase from US\$3.1 billion (1995) to US\$4.2 billion (2000), equivalent to an annual increase of approximately US\$220 million or 6.3%. By comparison, the consumer segment is estimated to increase from US\$5.1 billion to US\$7.5 billion, equivalent to an annual increase of approximately US\$480 million or 8.0%. Overall, the consumer segment is forecast to grow at a greater rate than the professional segment.

7.2.3 Wood Products In The Market

Home improvement retailers sell a wide range of products, from sawn lumber to electrical equipment. Wood products are recognised to be an important part of the retailer's product mix (Lober and Eisen 41) and typically include items such as cabinets, doors, flooring, mouldings, panels (for example, plywood), sawn lumber, shelving and windows. As this study focuses on customers' attitudes towards wood products, it is necessary to look at the market in terms of the proportion of sales accounted for by these products.

Lober and Eisen (41) outline that wood products may account for approximately 10% of sales in a typical home improvement store. While this figure is thought to be a useful basis for estimating total sales of wood products in the market, Canada's largest improvement retailer (Canadian Tire) may not be considered a 'typical home improvement store'⁷. This is due to the high proportion of Canadian Tire's sales which are accounted for by automotive parts, electronics and sporting goods. According to the article "Canadian Retailers" in the industry journal National Home Center News, sales of automotive parts, electronics and sporting products account for approximately 72.5% of Canadian Tire's total sales. Sales of these items are included in the figures for the Canadian home improvement market, as provided by the Home Improvement Research Institute. As a result, prior to making an estimate of sales of wood products, it is beneficial to deduct Canadian Tire's sales of automotive, electronic and sporting goods (see Table 7-3).

⁷ Examples of more 'typical' home improvement retailers include Beaver Lumber, The Home Dept and Revy.

Table 7-3

The Outlook for Wood Products in the Canadian Home Improvement Market

Year	Sales Revenue (US\$ million)		
	Market, including all Sales by Canadian Tire	Market, excluding Automotive, Electronics and Sporting Goods Sold by Canadian Tire	Market for Wood Products (10% share)
1995	8,200	6,660 ^a	666
1996	8,500	6,896 ^a	690
1997	9,700	7,870	787
1998	10,700	8,681	868
1999	11,300	9,168	917
2000	11,700	9,493	949

Source: Developed from the Home Improvement Research Institute (1997a, 3); "Canadian Retailers" (96); and Lober and Eisen (41).

^a *Market figures for 1995 and 1996 were calculated using Canadian Tire's actual sales figures, assuming that 72.5% of all sales were accounted for by automotive parts, electronics and sporting goods. Estimates for the years 1997 to 2000 were made assuming that Canadian Tire's sales will increase at the same rate as sales in the Canadian home improvement market.*

Following the deduction of automotive, electronics and sporting goods sold by Canadian Tire, we have assumed that all other sales in the market represent the sales of 'typical home improvement stores'. Assuming that 10% of sales are accounted for by wood products, we

have calculated that sales of wood products in the Canadian home improvement market would have been approximately US\$666 million in 1995 (see Table 7-3).

With regard to the future, we have assumed that sales of wood products will maintain a 10% share of the market. As detailed in Table 7-3, it is estimated that the market for wood products will increase from US\$666 million (1995) to US\$949 million (2000), equivalent to a total increase of US\$283 million (42%) or an annual increase of around US\$56.5 million.

Overall, with sales of wood products equalling approximately US\$666 million in 1995, the Canadian home improvement market may be viewed as an important market for wood products⁸.

7.3 The British Columbian Home Improvement Market

A comprehensive literature search, together with discussions with major retailers and industry analysts, has revealed that no reports for the British Columbian home improvement market are readily available. Sources which were approached for this information included: The Home Depot, Revelstoke Home Centres, National Home Centre News, the British Columbian Building Supply Retailers Association and the Home Improvement Research Institute.

⁸ To put this in perspective, in monetary terms; sales of wood products in 1995 were approximately equal to 12% of British Columbia's total exports of lumber in 1995 (calculated from the above estimate of US\$666 million and COFI, 7 and 9).

In the absence of market statistics from a reliable third party, calculations have been made to provide an estimate of the British Columbian market. For our calculations, the following assumptions were made:

1. British Columbia's share of the home improvement market is equal to its share of the national population - 12.8% (Natural Resources Canada 92 and 97);
2. sales in the provincial market will increase at the same rate as the national market (as estimated by the Home Improvement Research Institute, 1997a, 3);
3. British Columbia's share of the wood products market will equal its share of the national population - 12.8%; and
4. the two market segments (consumer and professional) account for the same percentage shares of the provincial market as they do at the national level.

Making these assumptions, the following estimates have been made. First, in 1995, sales in the British Columbian home improvement market are estimated to have been approximately US\$1.05 billion. This figure is likely to increase to around US\$1.5 billion by 2000, equivalent to an annual increase of US\$90 million or 7.4% between 1995 and 2000. In 1995, the consumer and professional market segments accounted for US\$651 million and US\$399 million respectively. These figures are estimated to increase to approximately US\$960 million and US\$540 million respectively by 2000.

With regard to wood products, sales are estimated to have been approximately US\$85.2 million in 1995 (12.8% of the estimate for the national market). It should be noted that this

estimate may be conservative. While in the national market we have assumed that sales of wood products may account for 10% of sales, one home improvement retail manager in British Columbia estimated that approximately 15% of sales in his store were accounted for by wood products. He proposed that this higher figure may be common within British Columbia due to the relative importance of the wood products industry and customers' willingness to support the industry. However, making a conservative estimate (assuming wood products hold and will maintain the same market share at the provincial level as they do at the national level), sales of wood products in British Columbia are estimated to increase to approximately US\$121.5 million in 2000.

7.4 Summary

The Canadian home improvement market was worth approximately US\$8.2 billion in 1995. In the future, the market is estimated to grow substantially, with sales of approximately US\$11.7 billion being achieved in 2000. In the absence of market information for the British Columbian home improvement market, we have assumed that the size of the market is proportional to the province's share of the national population. In 1995, the market in British Columbia is estimated to have equalled around US\$1.05 billion.

Within the national and provincial markets, sales of wood products are thought to account for approximately 10% of the market. In monetary terms, this is equivalent to sales, in 1995, of US\$666 million and US\$85.2 million for Canada and British Columbia respectively. Overall,

the Canadian and British Columbian home improvement markets may be viewed as important markets for wood products.

8. ENVIRONMENTALLY SOUND WOOD PRODUCTS IN THE HOME IMPROVEMENT MARKET

8.1 Introduction

As discussed in Chapter 3 (see section 3.4), companies in the wood products sector have come under increasing pressure to develop environmentally sound policies, practices and products, since the 1980s. In this chapter, we discuss the degree to which environmentally sound wood products have become integrated in the home improvement market.

8.2 Environmentally Sound Wood Products In The Market

To date, some of the large home improvement retailers have taken steps to market environmentally sound wood products. Arguably, the most active large retailer in this area in North America is The Home Depot - North America's largest and Canada's second largest home improvement retailer. In a report for Prudential Securities, Harvey proposes that "Among companies in the speciality retail industry, Home Depot....stands out for its environmentalism" (7). The Home Depot was the first large retailer to appoint an environmental director, the first in the United States to implement a system requiring third-party independent evaluation of environmental claims made by their suppliers (Harvey 7) and the first large retailer to sell a certified wood product anywhere in the world (Eisen 98).

In the UK, other large home improvement retailers such as B&Q, Do It All, Great Mills, Homebase, Magnet and Wickes have also made commitments to marketing environmentally

sound wood products. These companies are members of the WWF 1995 Plus Group and have consequently all made commitments to supporting third party certification of wood products (WWF-UK, 1996). As noted by Hansen (21), the goal of the WWF 1995 Plus Group is to achieve 100% certification of all wood products sold by the end of 1999.

According to Tickell (13), equivalents of the UK-based WWF 1995 Plus Group have also been established in America, Australia, Austria, Belgium, Brazil, Denmark, France, Germany, Ireland, Japan, the Netherlands, Spain and Switzerland.

In addition to some large retailers who are members of groups such as the WWF 1995 Plus Group, a number of smaller home improvement retailers are involved in marketing environmentally sound wood products. Some of the smaller stores which focus on providing environmentally sound products include: the Environmental Home Center, Seattle; Environmental Building Supplies, Portland; Environmental Construction Outfitters, New York; and Happy Harry's Recycled Building Materials, Kelowna (Tice 11; Happy Harry's).

Further to the above examples, an Institute for Sustainable Forestry (ISF) study, undertaken in the states of Washington, Oregon and California, concluded that "there appears to be an immediate demand for certified wood products in the do-it-yourself/home centre distribution channels" (A-4). The ISF (A-1) report stated that awareness of certification was high among all respondents (62%), with awareness being highest amongst do-it-yourself/building stores and mail order suppliers. Of the thirty-eight do-it-yourself/building stores which were surveyed, 82% were aware of certification, 42% sold certified wood products and over 50%

said that they were willing to pay 5% more for certified wood products (ISF, section II, 13). While these figures indicate a high level of awareness and show that many of those surveyed (42%) stocked certified (environmentally sound) wood products, the results, while useful, are not thought to be representative of the industry. Of the thirty-eight do-it-yourself/building stores surveyed, eighteen were listed in the 'Good Wood' list (ISF, section I, 5). This list includes users of wood which "has a minimal negative impact" such as "certified or salvage wood" (ISF, section I, 5). The research sample used by ISF contains a high proportion of companies who have made a commitment to the environment and is not representative of the industry. As noted by the ISF, when those businesses listed in the 'Good Wood' list are removed from the results, the percentage of businesses expressing a willingness to pay extra decreases substantially (section I, 5). For hardwood dealers in the do-it-yourself category, it decreased from 40% (willing to pay a 10% premium) to 13% (willing to pay some premium).

The argument that the research of the ISF is not representative of the industry is strengthened by the findings of research undertaken by Optima and Moresby. Research completed by Optima (8) on behalf of the Canadian Wood Council, found that, of the four hundred wood retailers surveyed (in the United States), only 8% were aware of certification. Of this 8%, many could not even name a certification program or company. In addition, 80% of the retailers interviewed did not have a purchasing policy which took environmental concerns into account (Optima 7). In a separate report, Moresby state that of the 410 lumber buyers which they surveyed, none were "aware of certified products in their stores or customers requests for certified lumber" (6).

While certified wood products only represent one form of environmentally sound wood product, the results of the Optima (8) study indicate that the sale of other environmentally sound wood products is not widespread - 84% did not have any eco-labelled⁹ products in their retail outlets.

Although the reports of Optima and Moresby indicate that awareness of certification is low amongst retailers and that a relatively small proportion of retailers stock environmentally sound wood products, they both also indicate that this may change in the future. Optima (5) found that 73% of the four hundred retailers surveyed believed that their customers were concerned about environmental forest issues. In addition, Moresby proposed that “while the environment is not the main driver in consumer choice when it comes to lumber purchase, a critical mass exists which could shift preference and choice very rapidly” (6). Moresby also state that “lumber retailers are sensitive to their customers demands, and if the high awareness of environmental issues begins to translate into consumer choice, retailers will respond” (8).

8.3 Summary

Overall, it appears that while some home improvement retailers have made a commitment to the environment and environmentally sound wood products, the commitment is not widespread in the market. At present, retailers who do actively market environmentally sound wood products appear to represent a small part of the market, a niche. In the future,

⁹ An eco-label is a label which is put on a product to indicate that it is environmentally sound (for example, the German government has a ‘Blue Angel’ label which is given to products which are judged to be environmentally sound).

however, this may change. According to Moresby, a critical mass exists which could shift preference and choice very rapidly towards environmentally sound wood products in the future. As a result, home improvement retailers may increasingly find their profitability and overall success determined by whether or not their wood products are viewed as environmentally sound.

9. RESULTS AND DISCUSSION

9.1 Introduction

In this chapter, we discuss the results of the primary research. We begin our discussion in section 9.2 with an outline of how our primary data was analysed. In section 9.3, we provide an interviewee profile, grouping interviewees by demographic characteristics, purchasing behaviour and market segment. Sections 9.4, 9.5 and 9.6 discuss the findings of the primary research associated with each of the three main objectives:

- 1. to determine customers' attitudes towards the relative importance of environmental attributes in wood products;*
- 2. to assess customers' attitudes towards the pricing of environmentally sound wood products; and*
- 3. to establish possible relationships between demographic characteristics (gender, age and income), place of residence (urban versus rural), market segment (consumer versus professional) and the likelihood of customers buying environmentally sound wood products.*

9.2 Data Analysis

Following the completion of three hundred customer interviews, responses were coded and entered into a computer for analysis. Prior to analysis, thirty interview records (10% of the total), containing a total of 840 entries, were checked to assess input accuracy. This check found one entry to be incorrect, giving an input accuracy of 99.9%.

Subsequent to the accuracy check, the primary data was analysed. Where appropriate, statistical tests were completed to determine the statistical significance of results. Statistical tests were completed using the statistical software package Minitab in conjunction with statistical textbooks (Anderson, Sweeney and Williams; Minitab; Moore and McCabe).

The subsequent sections of this chapter provide details of the primary data analysis.

9.3 Interviewee Profile

Interviewees were selected by the interviewer outside home improvement retail outlets in Kelowna, Prince George and Vancouver, within the province of British Columbia, Canada. Prior to undertaking the research, a target of three hundred responses was set - one hundred interviews at each location. To achieve the target of three hundred, a total of 626 customers were asked to take part in the research, giving a response rate of 48% (see Table 9-1).

Table 9-1

Response Rates

Location	Number of Customers Asked to Take Part	Number of Customers Who Were Interviewed	Response Rate
Kelowna	230	100	43%
Prince George	169	100	59%
Vancouver	227	100	44%
All Locations	626	300	48%

In the following sections, we profile the three hundred interviewees according to:

1. demographic characteristics - gender, age and income (section 9.3.1);
2. which market segment, consumer or professional, they can be categorised under (section 9.3.2); and
3. their purchasing behaviour (section 9.3.3).

In addition, we compare our sample with the British Columbian and Canadian populations (see section 9.3.4).

9.3.1 Demographic Profile

In our sample, males (82%) outnumbered females (18%) (see Table 9-2).

Table 9-2

Gender Distribution of Sample

Gender	Number of Interviewees	Percentage
Male	246	82.0%
Female	54	18.0%
Total	300	100%

With regard to age, approximately half of all interviewees (47.5%) were thirty-nine years old or less (see Table 9-3). The majority of interviewees (58.3%) were between thirty and forty-nine. Just 1% of the interviewees declined to provide information regarding their age.

Table 9-3

Age Distribution of Sample

Age Group	Number of Interviewees	Percentage
19 or Under	2	0.7%
20-29	35	11.7%
30-39	103	34.3%
40-49	72	24.0%
50-59	53	17.7%
60 or Over	32	10.7%
Prefer Not to Answer	3	1.0%
Total	300	100%

In terms of income, the distribution of interviewee's income is detailed in Table 9-4.

Approximately one-quarter (27%) earned under CDN\$40,000; around one-quarter (26%) earned between CDN\$40,000 and CDN\$59,999 and approximately one-quarter (24.7%) earned between CDN\$60,000 and CDN\$99,999. Of the remaining interviewees, 3.3% earned CDN\$100,000 or more and 18.7% declined to provide information regarding their income.

Table 9-4

Income Distribution of Sample

Income Group ^a	Number	Percentage
Under CDN\$20,000	20	6.7%
CDN\$20,000 - CDN\$39,999	61	20.3%
CDN\$40,000 - CDN\$59,999	79	26.3%
CDN\$60,000 - CDN\$79,999	50	16.7%
CDN\$80,000 - CDN\$99,999	24	8.0%
CDN\$100,000 or Over	10	3.3%
Prefer Not to Answer	56	18.7%
Total	300	100%

^a *Income figures represent annual personal income before tax.*

9.3.2 Market Segment Profile

As detailed in Chapter 7 (section 7.2.2), the home improvement market can be divided into two market segments - consumer and professional. In an effort to group interviewees by market segment, we asked the question:

Are the wood products that you buy from a home improvement retailer:

- 1) mainly for your own use, or*
- 2) mainly for contractual work?*

Although many home improvement shoppers may buy products for both their own use (consumer segment) and contractual work (professional segment), responses to this question are thought to be a reasonable basis upon which to classify interviewees according to market segment.

The majority of interviewees (75%), reported that the products they buy from home improvement retailers are mainly for their own use. As a result, 75% of interviewees are categorised as belonging to the consumer segment, with the remaining 25% belonging to the professional segment (see Table 9-5).

Table 9-5

Market Segment Distribution of Sample

Market Segment	Number of Interviewees	Percentage
Consumer	226	75%
Professional	74	25%
Total	300	100%

9.3.3 Purchasing Profile

All interviewees reported that they shopped at home improvement stores at least once a year. More than three-quarters of the interviewees (76%), reported that they shopped at such outlets once a month or more (see Table 9-6).

Table 9-6

Frequency with which Interviewees Shop at Home Improvement Outlets

Shopping Frequency	Number of Interviewees	Percentage
Once a Year	8	2.7%
2 or 3 Times a Year	64	21.3%
Once a Month	77	25.7%
2 or 3 Times a Month	86	28.7%
Once a Week or More	65	21.7%
Total	300	100%

With regard to wood products purchases, 88% of interviewees reported that they buy wood products at least once a year. Almost three-quarters (71.7%) reported that they buy wood products at least two or three times a year and more than one-third (34.7%) reported that they purchase wood products once a month or more (see Table 9-7).

Table 9-7

Frequency with which Interviewees Purchase Wood Products

Frequency	Number of Interviewees	Percentage
Less than Once a Year	35	11.7%
Once a Year	50	16.7%
2 or 3 Times a Year	111	37.0%
Once a Month	53	17.7%
2 or 3 Times a Month	33	11.0%
Once a Week or More	18	6.0%
Total	300	100%

With regard to the boycotting behaviour of interviewees, 31% said that they had boycotted or avoided buying a product (either wood or non-wood) in the last year because of environmental concerns. A smaller proportion (9%), reported that they had boycotted a wood product in the last year due to environmental concerns.

9.3.4 Sample Compared with British Columbian and Canadian Populations

While a comparison of our sample with the British Columbian and Canadian populations is thought to be useful (it puts our sample into perspective), it should be noted that the latest census information available is not comparable in terms of timing. The latest available data for

the British Columbian and Canadian populations is from the 1991 census¹⁰. As a result, the usefulness of the comparison is somewhat limited.

When compared to the British Columbian and Canadian populations, our sample has a substantially higher percentage of males. In our sample, 82% of interviewees were male (British Columbia, 51%; Canada, 49%). This high percentage is thought to reflect the gender profile of home improvement shoppers, with the large majority of customers being male.

In terms of age, our sample is also substantially different from the British Columbian and Canadian populations. While approximately 27% of the British Columbian and Canadian populations are aged nineteen or under, less than 1% of interviewees in our sample come within this age bracket (see Table 9-8). It is thought that this difference can largely be explained by the fact that only those individuals old enough to have their own home are likely to purchase home improvement products.

¹⁰ Although a national census was completed in 1996, the majority of the information is currently unavailable (Statistics Canada, 1996, 7). For example, income information will be unavailable until May 1998.

Table 9-8

Age Distribution of Sample Compared with British Columbian and Canadian Populations

Age Group	British Columbia	Canada	Sample
19 or Under	27.4%	27.7%	0.7%
20-29	15.4%	15.9%	11.7%
30-39	18.0%	17.5%	34.3%
40-49	14.5%	13.5%	24.0%
50-59	9.7%	9.3%	17.7%
60 and over	15.0%	15.9%	10.7%
Prefer not to Answer	N/A	N/A	1.0%
Total	100%	100%	100%

Source: Statistics Canada. Profile of Census Divisions and Subdivisions in British Columbia Part A: 1991. (Ottawa: Statistics Canada, 1992a) 22. And primary research data.

With regard to income, our sample consists of a higher proportion of high income earners than the British Columbian and Canadian populations (see Table 9-9). For example, almost 60% of males in our sample earned CDN\$40,000 or more. In British Columbia and Canada, 29.1% and 26% of the male population respectively earned CDN\$40,000 or more in 1991. One of the factors which may explain this difference is the timing of data collection, compared to the census.

Table 9-9

Income Distribution of Sample Compared with British Columbian and Canadian Populations

Income	Income - Males			Income - Females		
	BC	Canada	Sample	BC	Canada	Sample
Under CDN\$20,000	38.0%	39.3%	4.9%	65.1%	65.4%	14.8%
CDN\$20,000-39,999	32.9%	34.7%	17.1%	27.5%	27.1%	35.2%
CDN\$40,000 and Over	29.1%	26.0%	59.7%	7.4%	7.5%	29.7%
Prefer not to Answer	N/A	N/A	18.3%	N/A	N/A	20.4%
Total	100%	100%	100%	100%	100%	100%

Source: Statistics Canada. Profile of Census Divisions and Subdivisions in British Columbia Part B: 1991. (Ottawa: Statistics Canada, 1992b) 30. And primary research data.

Overall, our sample consists of a substantially higher proportion of males than the British Columbian and Canadian populations. In addition, individuals in our sample, on average, are older and have higher incomes.

It should be noted that as our sample is not a random sample of the British Columbian or Canadian populations, conclusions detailed in the following sections are limited to our sample only.

9.4 Customers' Attitudes Towards Environmental Product Attributes

In this section, we focus on the primary research associated with the first of the three main objectives of this study:

to determine customers' attitudes towards the relative importance of environmental attributes in wood products.

To gauge customers' attitudes towards the relative importance of environmental product attributes, interviewees were asked the question:

When buying a wood product from a home improvement retailer, how important are the following product features?

Eleven product features/attributes were listed in the following order: grain pattern, location and size of knots, species, quality, appearance, strength, brand name, price, retailer's environmental image, environmental impact and the fact that the product may be certified as coming from a sustainably managed forest¹¹. The last three attributes can be categorised as environmental product attributes. Interviewees were asked to indicate the importance of each product attribute on a five point scale: 1. not at all important; 2. not very important; 3. somewhat important; 4. very important; and 5. extremely important.

¹¹ The list of product attributes was developed from secondary sources (Ozanne and Smith 466; Peattie) as well as through discussions with thesis committee members.

From interviewees' responses, we were able to determine the relative importance of the three environmental attributes in relation to the other eight product attributes. Table 9-10 contains details of the average rating given to each attribute.

Table 9-10

Importance of Wood Product Attributes

Rank	Attribute	Average Rating
1	Quality	4.09
2	Price	3.91
3	Appearance	3.88
4	Strength	3.84
5	Location and Size of Knots	3.58
6	Species	3.24
7	Grain Pattern	3.13
8	Environmental Impact	2.95
9	Certified as Coming from a Sustainably Managed Forest	2.87
10	Retailer's Environmental Image	2.69
11	Brand Name	1.63

As can be seen from the average ratings and associated rankings detailed in Table 9-10, quality and price ranked first and second, respectively. This indicates that these are the two

key attributes considered by customers when buying wood products from home improvement retailers. Appearance and strength were ranked third and fourth, respectively. In terms of the average ratings provided, appearance (average rating equal to 3.88) and strength (3.84) were rated closely to price (3.91), indicating that they are almost equally important.

The three environmental attributes ranked eighth (environmental impact), ninth (certified as coming from a sustainably managed forest) and tenth (retailer's environmental image). Only the product's brand name ranked lower at eleventh.

While the three environmental attributes ranked towards the bottom of the list, the average ratings given to these attributes indicate that they are still "somewhat important" in customer's buying decisions; three on the five point response scale indicates that interviewees considered the attribute to be "somewhat important" in their buying decision. On average, the environmental attributes scored: 2.95, for environmental impact; 2.87, for the fact that the product may be certified as coming from a sustainably managed forest; and 2.69 for the retailer's environmental image.

In addition, when looking at the distribution of interviewees' responses (see Table 9-11), we can see that many interviewees indicated that environmental product attributes are more than "somewhat important" in their buying decision. For example, more than one-third (35%) rated the environmental impact as being either "very" or "extremely important" when buying a

wood product from a home improvement retailer. Similarly, 37% said that certification was “very” or “extremely important”.

In contrast, however, it should be noted that more than one-third of interviewees (36%) reported that the environmental impact of the product was either “not at all important” or “not very important” in their buying decision. A larger proportion of interviewees (40%), said that certification was “not at all important” or “not very important” when buying a wood product from a home improvement store.

Table 9-11

Distribution of Interviewees' Responses to the Question: When buying a wood product from a home improvement retailer, how important are the following product features?

Product Feature	Interviewees' Responses - Number of Interviewees (Percentage)							Total
	Not at all Important	Not Very Important	Somewhat Important	Very Important	Extremely Important	Would not Answer		
Quality	2 (0.7%)	8 (2.7%)	32 (10.7%)	174 (58.0%)	80 (26.7%)	4 (1.3%)	300 (100%)	
Price	3 (1.0%)	13 (4.3%)	62 (20.7%)	150 (50.0%)	69 (33.0%)	3 (1.0%)	300 (100%)	
Appearance	1 (0.3%)	16 (5.3%)	63 (21.0%)	150 (50.0%)	62 (20.7%)	8 (2.7%)	300 (100%)	
Strength	3 (1.0%)	12 (4.0%)	61 (20.3%)	167 (55.7%)	47 (15.7%)	10 (3.3%)	300 (100%)	
Location and Size of Knots	8 (2.7%)	35 (11.7%)	66 (22.0%)	145 (48.3%)	37 (12.3%)	9 (3.0%)	300 (100%)	
Species	11 (3.7%)	58 (19.3%)	97 (32.3%)	99 (33.0%)	26 (8.7%)	9 (3.0%)	300 (100%)	
Grain Pattern	13 (4.3%)	65 (21.7%)	104 (34.7%)	85 (28.3%)	22 (7.3%)	11 (3.7%)	300 (100%)	
Environmental Impact	46 (15.3%)	61 (20.3%)	84 (28.0%)	72 (24.0%)	33 (11.0%)	4 (1.3%)	300 (100%)	
Certified as Coming from a Sustainably Managed Forest	68 (22.7%)	52 (17.3%)	56 (18.7%)	72 (24.0%)	39 (13.0%)	13 (4.3%)	300 (100%)	
Retailer's Environmental Image	61 (20.3%)	67 (22.3%)	90 (30.0%)	62 (20.7%)	17 (5.7%)	3 (1.0%)	300 (100%)	
Brand Name	172 (57.3%)	81 (27.0%)	27 (9.0%)	12 (4.0%)	4 (1.3%)	4 (1.3%)	300 (100%)	

Of the three hundred interviewees, 105 (35%) made further comments (in addition to answering the structured set of questions). Thirty-two interviewees made comments directly associated with the relative importance of environmental product attributes. Fourteen interviewees expressed the view that environmental issues are not important in their buying decisions because customers are not generally provided with such information. As a result, they are unable to assess products according to such features. A further ten interviewees said that it would be beneficial if customers were provided with more environmental information, to enable such an assessment.

In addition to the above views, two interviewees stated that environmental attributes are not important in their buying decision because they assume suppliers abide by the necessary environmental legislation. As a result, if the wood products are available to the public, they are assumed to be environmentally sound.

Overall, when buying wood products from home improvement retail outlets, customers in our sample first shop for quality and then price. Environmental product attributes are less important than price, quality and many other attributes (appearance, strength, location and size of knots, species and grain pattern). While environmental product attributes are less important than many other attributes, they are still viewed as “somewhat important” in determining whether or not many customers decide to buy a product. In the future, environmental product attributes may play a more prominent role in customers’ buying

decisions, should product labels provide more environmental information, as requested by some interviewees/customers.

9.5 Customers' Attitudes Towards Pricing

In this section we focus on the primary research associated with the second main objective of this study:

to assess customers' attitudes towards the pricing of environmentally sound wood products in the home improvement market.

As discussed in Chapter 5 (section 5.2), when companies develop environmentally sound wood products, many are likely to incur increased costs. Where this occurs, companies have two main options with regard to price. They can either increase prices, with the aim of maintaining profit margins, or they can absorb the increased costs and accept lower profit margins¹². The ability of companies to increase prices and preserve profit margins is dependent on the willingness of customers to pay higher prices. Will customers in the home improvement market pay more for environmentally sound wood products?

In an effort to assess whether or not customers are willing to pay more for environmentally sound wood products, we asked interviewees to indicate whether or not they would choose a

¹² It should be noted that either of these options may lead to an overall increase or decrease in total profit, depending on the volume sold. Even if a company absorbs the costs and accepts lower profit margins, it may increase its total profit as a result of an increase in the volume sold. The willingness of customers to pay more for environmentally sound wood products, however, is still a key issue with regard to determining whether or companies will be able to pass on increased costs to the customer.

certified (environmentally sound) wood product or a non-certified product in each of the following four scenarios:

1. if the certified product was priced at the same level as the non-certified product;
2. if the certified product was priced 5% higher than the non-certified product;
3. if the certified product was priced 10% higher than the non-certified product; and
4. if the certified product was priced more than 10% higher than the non-certified product¹³.

The responses of interviewees are presented in Table 9-12 below. If the certified wood product was priced at the same level as its non-certified competitor (Scenario 1), 94.3% of interviewees said that they would choose the certified product. More than two-thirds of interviewees (67.3%), said they would be willing to pay 5% more for the certified wood product (Scenario 2) and more than one-quarter (28.3%) reported they would pay 10% more (Scenario 3). Approximately 13% said they would pay more than 10% (Scenario 4).

¹³ The latter three scenarios can be described as “pay more” scenarios.

Table 9-12

Willingness to Pay for Certified Wood Products

Scenario	Interviewees Responses - Number of Interviewees (Percentage)			
	Buy Certified	Buy Non-certified	Would not Answer	Total
1. Certified Product same Price as Non-certified	283 (94.3%)	11 (3.7%)	6 (2.0%) ^a	300 (100%)
2. Certified Product 5% Higher in Price	202 (67.3%)	96 (32.0%)	2 (0.7%) ^b	300 (100%)
3. Certified Product 10% Higher in Price	85 (28.3%)	204 (68.0%)	11 (3.7%) ^b	300 (100%)
4. Certified Product more than 10% Higher in Price	40 (13.3%)	244 (81.3%)	16 (5.3%) ^b	300 (100%)

^a Interviewees who would not answer said that they would not differentiate between a certified and a non-certified wood product when making their buying decision.

^b Interviewees who would not answer said that they would be unable to predict which product they would buy.

In addition to asking interviewees to indicate which product they would buy in each of the above four scenarios, interviewees were asked to indicate their level of agreement with three pricing statements:

1. *Customers should pay more for environmentally sound wood products;*
2. *Having to pay more for environmentally sound wood products is acceptable; and*
3. *The forest products industry should pay for any increased costs of environmentally sound wood products.*

Interviewees were asked to indicate their level of agreement with each statement on a five point scale: 1. strongly disagree; 2. disagree; 3. no opinion; 4. agree; and 5. strongly agree.

The distribution of interviewees' responses are detailed in Table 9-13. The first two pricing statements were developed to assess interviewees' attitudes towards the possibility of customers being charged more for environmentally sound wood products. With regard to the first statement, approximately equal numbers of interviewees agreed as disagreed - 43% agreed that "Customers should pay more for environmentally sound wood products", while 40% disagreed. Of the remaining 17%, 13.3% expressed no opinion and 3.7% opted not to answer.

Table 9-13

Distribution of Interviewees' Responses to Pricing Statements

Statement	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree	Would not Answer	Total
1. Customers should pay more for environmentally sound wood products.	31 (10.3%)	89 (29.7%)	40 (13.3%)	108 (36.0%)	21 (7.0%)	11 (3.7%)	300 (100%)
2. Having to pay more for environmentally sound wood products is acceptable.	28 (9.3%)	83 (27.7%)	23 (7.7%)	148 (49.3%)	16 (5.3%)	2 (0.7%)	300 (100%)
3. The forest products industry should pay for any increased costs of environmentally sound wood product.	21 (7.0%)	53 (17.7%)	35 (11.7%)	136 (45.3%)	44 (14.7%)	11 (3.7%)	300 (100%)

Responses to the second pricing statement brought a greater degree of agreement than the first statement. More than half (54.6%) of the interviewees agreed that "Having to pay more for environmentally sound wood products is acceptable", while 37.0% disagreed. Of the remaining interviewees, 7.7% expressed no opinion and 0.7% preferred not to answer.

The third pricing statement was developed to assess interviewees' attitudes towards the forest products industry absorbing environmental costs, as opposed to passing the costs on to the customer. Approximately one-quarter (24.7%) disagreed with this statement, while 60.0% agreed that "The forest products industry should pay for any increased costs of environmentally sound wood products". Of the remaining interviewees, 11.7% expressed no opinion and 3.7% opted not to answer.

During interviews, the three pricing statements stimulated the greatest amount of comment from interviewees. Of the 105 interviewees who made further comments, fifty-three made comments directly associated with the three pricing statements. The most common view, expressed by twenty-six interviewees, was that where companies incurred increased environmental costs, these costs would be passed onto the customer, not absorbed by the companies. According to these interviewees, the customer always pays.

An additional fourteen interviewees said that wood products companies and customers should share any increased costs associated with developing environmentally sound wood products. As a result, price increases would be more moderate (than if the full cost increase was passed

onto customers) and companies would accept lower profit margins. A further seven interviewees expressed the view that environmentally sound wood products should not cost more. Three of these interviewees proposed that environmentally sound wood products should be less expensive than products that are not environmentally sound.

Overall, approximately two-thirds of interviewees (67.3%) expressed a willingness to pay 5% more for certified wood products. However, the majority (68.0%) also reported that they would not pay 10% more. The majority of interviewees (54.6%), agreed with the statement “Having to pay more for environmentally sound wood products is acceptable”. From our results, it appears that many customers are willing to pay more for certified wood products in the home improvement market. However, as noted in section 5.3, large differences may exist between what customers say they will do and what they actually do.

9.6 Who Are The Most Likely Environmentally Conscious Customers?

In this section, we focus on the primary research associated with the third main objective of this study:

to establish possible relationships between demographic characteristics (gender, age and income), place of residence (urban versus rural), market segment (consumer versus professional) and the likelihood of customers buying environmentally sound wood products.

To assess possible relationships, interviewees' responses were grouped according to pre-determined common characteristics. For example, when assessing possible relationships between gender and the likelihood of customers buying environmentally sound wood products, interviewees' responses were grouped according to whether they were male or female.

Four indicators were used to assess possible relationships between interviewees' characteristics and the likelihood of them buying environmentally sound wood products. The four indicators represent all the indicators which could be used, given the primary data which was collected, and are thought to reflect the likelihood of customers buying environmentally sound wood products.

First, we used the level of importance attributed to environmental product attributes when buying wood products (see question three of the research instrument, Appendix 1). It was

assumed that those groups who attributed a greater level of importance to environmental product attributes when buying wood products are more likely to buy environmentally sound products.

The second indicator used was willingness to pay (see question four of the research instrument, Appendix 1). Those groups in which a relatively large proportion of interviewees expressed a willingness to pay more for certified wood products are thought to be more likely buyers of environmentally sound wood products than those groups in which a smaller proportion of individuals expressed a willingness to pay more.

The third indicator used was the frequency with which the environmental impact of the product was considered when purchasing a wood product (see question six of the research instrument, Appendix 1). Those groups who considered the environmental impact more frequently are considered to be more likely buyers of environmentally sound wood products.

The fourth and final indicator used was boycotting behaviour (see questions seven and eight of the research instrument, Appendix 1). Groups in which a relatively large proportion of interviewees reported they had boycotted a product in the last year because of environmental concerns, are considered to be more likely buyers of environmentally sound wood products.

Combined, the above four indicators are thought to be a relatively sound basis for gauging whether or not customers are likely to buy environmentally sound wood products. In addition

to having indicators, however, there is a need to have a benchmark - a standard against which results can be measured. When assessing possible relationships, we were seeking results against the null hypothesis (H_0) at a significance level of 5% or less. The null hypothesis being tested was that no difference existed between the means of the groups being assessed. Where we assessed two groups, the null hypothesis was stated as: $H_0: \mu_1 = \mu_2$. The alternative or research hypothesis was stated as: $H_a: \mu_1 \neq \mu_2$.

In the following sections, we discuss the findings of our research with regard to possible relationships between demographic characteristics (gender, age and income), place of residence (urban versus rural) and market segment (consumer versus professional) and the likelihood of customers buying environmentally sound wood products.

9.6.1 Possible Relationship between Gender and the Environmentally Conscious Customer

In this section, we discuss whether or not the primary data indicates that a relationship exists between gender and the likelihood of customers buying environmentally sound wood products.

As with all relationships which were analysed, we assessed:

1. the level of importance attributed to environmental product attributes when buying wood products;
2. the willingness to pay more for certified wood products;

3. the frequency with which the environmental impact was considered when buying wood products; and
4. boycotting behaviour.

9.6.1.1 Importance of Environmental Product Attributes

From an analysis of our primary data, we found that, on average, female interviewees attributed a greater level of importance to environmental product attributes than male interviewees. As can be seen from the figures presented in Table 9-14, the average ratings for environmental product attributes were higher for females for each of the three environmental attributes.

Table 9-14

Average Ratings for Environmental Product Attributes by Gender^a

Attribute	Male	Female
Retailer's Environmental Image	2.65	2.87
Environmental Impact	2.90	3.17
Certified as Coming from a Sustainably Managed Forest	2.86	2.88
Aggregate Rating	2.80	2.97

^a Interviewees responded on a five point scale from 1. not at all important, to 3. somewhat important to 5. extremely important. The higher the average rating, the greater the level of importance attributed to that attribute when buying a wood product.

While the results detailed in Table 9-14 indicate that there may be a relationship between gender and the level of importance attributed to environmental product attributes, it should be noted that the overall difference between male and female ratings was not large. The average aggregate rating provided by males was 2.80: the equivalent rating provided by females was 2.97 (see Table 9-14). To assess the strength of the primary data, two-sample t-tests were completed. The P-values calculated from these t-tests are detailed in Table 9-15.

Table 9-15

P-values for Environmental Product Attributes by Gender

Attribute	P-value ^a
Retailer's Environmental Image	0.21
Environmental Impact	0.17
Certified as Coming from a Sustainably Managed Forest	0.92

^a P-values were calculated from primary/raw data, with $\alpha = 0.05$.

From the P-values observed, we can conclude that, statistically, our primary data does not provide strong evidence against the null hypothesis ($H_0: \mu_1 = \mu_2$). Our data does not provide statistically strong evidence of a relationship between gender and the level of importance attributed to environmental product attributes when buying wood products.

9.6.1.2 Willingness to Pay

Our analysis found that a higher proportion of females than males expressed a willingness to pay more in each of the three “pay more” scenarios (Scenarios 2, 3 and 4 in Table 9-16).

Table 9-16

Willingness to Pay More for Certified Wood Products by Gender

Scenario	Percentage of Group who said they would buy Certified Product		P-value ^a
	Male	Female	
1. Certified product same price as non-certified.	94.7%	92.6%	0.49
2. Certified product 5% higher in price.	66.3%	72.2%	0.43
3. Certified product 10% higher in price.	27.6%	31.5%	0.43
4. Certified product more than 10% higher in price.	12.7%	16.7%	0.50

^a P-values were calculated from primary/raw data (not from the percentages detailed in the above table), with $\alpha = 0.05$.

Statistical tests (two-sample t-tests), were completed to determine the statistical significance of the results. The P-values obtained from the two-sample t-tests ranged from 0.43 to 0.50 for the three “pay more” scenarios (see Table 9-16). From these results, we can conclude that our data does not provide statistically strong evidence of a relationship between gender and willingness to pay more for certified wood products.

9.6.1.3 Frequency with which Environmental Impact is Considered

To assess the frequency with which interviewees considered environmental impact, we asked the question:

When buying wood products, how often do you consider their impact on the environment?

Interviewees were asked to respond by choosing one of the following five options: 1. always; 2. often; 3. sometimes; 4. rarely; or 5. never. The distribution of interviewees' responses, according to gender, are detailed in Table 9-17.

Table 9-17

Frequency with which Environmental Impact is Considered by Gender

Frequency	Male	Female
1. Always	10.1%	16.7%
2. Often	27.2%	29.6%
3. Sometimes	32.9%	29.6%
4. Rarely	23.6%	18.5%
5. Never	6.1%	5.6%
Total	100%	100%
Average Rating ^a	2.88	2.67

^a The average rating is based on the five point scale: 1. always, 2. often, 3. sometimes, 4. rarely, and 5. never. The lower the average rating, the more frequently the group considered the environmental impact.

The research found that females (with an average score equal to 2.67) considered environmental impact more frequently than males (average score of 2.88). However, two-sample t-test completed to assess the statistical significance of this outcome provided a P-value of 0.21, indicating that there is a high chance (21% or approximately one in five) of the observed outcome occurring if the null hypothesis was true¹⁴. As a result, we can conclude that our data does not, statistically, provide strong evidence of a relationship between gender and the frequency with which interviewees considered the environmental impact of purchasing a wood product.

9.6.1.4 Boycotting Behaviour

With regard to interviewees' boycotting behaviour, a larger proportion of female interviewees (41% as opposed to 29% for males) reported that they had boycotted or avoided a product, either wood or non-wood, in the last year because of environmental concerns. With regard to wood products, equal proportions of male and female interviewees (9%) reported that they had boycotted a wood product in the last year. The primary data regarding the boycotting of wood products, combined with the results of two-sample t-tests which were completed (see Table 9-18), lead us to conclude that our research does not provide statistically strong evidence of a relationship between gender and boycotting behaviour.

¹⁴ The P-value was calculated from raw data, with $\alpha = 0.05$.

Table 9-18

P-values for Boycotting Behaviour by Gender

	P-value ^a
Boycotting of products (wood or non-wood) in last year	0.11
Boycotting of wood products in last year	0.98

^a P-values were calculated from primary/raw data (not from the percentage figures), with $\alpha = 0.05$.

9.6.1.5 Summary

An analysis of our primary data found that:

1. female interviewees attributed a greater level of importance to environmental product attributes when buying wood products than male interviewees;
2. a larger proportion of female than male interviewees expressed a willingness to pay more for certified wood products;
3. female interviewees considered the environmental impact of buying a wood product more frequently than males; and
4. a greater proportion of female interviewees boycotted home improvement products (non-wood products) in the last year but equal proportions of male and female interviewees claimed to have boycotted wood products in the last year.

Although our primary data indicates that females may be more likely to buy environmentally sound wood products than males, statistical tests show that our data does not provide strong evidence of such a relationship.

9.6.2 Possible Relationship between Age and the Environmentally Conscious Customer

It should be noted that in our analysis of a possible relationship between age and the environmentally conscious customer, we merged the “19 and under” age group with the “20-29” age group. This was done as the number of interviewees in the “19 and under” group was considered to be too small (two interviewees) to justify an analysis of this as a separate group.

9.6.2.1 Importance of Environmental Product Attributes

Our analysis found variations between age groups with regard to the level of importance attributed to environmental product attributes (see Table 9-19).

Table 9-19

Average Ratings for Environmental Product Attributes by Age^a

Attribute	Age Group				
	29 or less	30-39	40-49	50-59	60 or more
Retailer's Environmental Image	2.78	2.58	2.78	2.73	2.61
Environmental Impact	3.00	2.90	3.22	3.06	2.23
Certified as Coming from a Sustainably Managed Forest	2.84	2.79	3.20	2.77	2.61
Aggregate Rating	2.87	2.76	3.07	2.85	2.48

^a Interviewees responded on a five point scale from 1. not at all important, to 3. somewhat important to 5. extremely important. The higher the average rating, the greater the level of importance assigned to that attribute when buying a wood product.

With variations evident, statistical tests (one-way ANOVA) were completed to determine if any statistically significant differences existed between age groups. The P-values are detailed in Table 9-20.

Table 9-20

P-values for Environmental Product Attributes by Age

Attribute	P-value ^a
Retailer's Environmental Image	0.79
Environmental Impact	0.01
Certified as Coming from a Sustainably Managed Forest	0.22

^a P-values were calculated from primary/raw data, with $\alpha = 0.05$.

While the P-value for 'environmental impact' ($P = 0.01$) indicates that a statistically significant differences exist, the P-values for the other two attributes do not provide consistent results.

As a result, we conclude that, statistically, our data does not provide strong evidence of a relationship between age and the level of importance attributed to environmental product attributes when buying wood products.

9.6.2.2 Willingness to Pay

In general, our research found that larger proportions of younger age groups expressed a willingness to pay more for certified wood products than their counterparts in older age groups (see Table 9-21).

Table 9-21

Willingness to Pay More for Certified Wood Products by Age

Scenario	Percentage of Age Group who said they would buy Certified Product				
	29 or less	30-39	40-49	50-59	60 or over
1. Certified product same price as non-certified.	100%	94.2%	93.1%	94.3%	93.8%
2. Certified product 5% higher in price.	70.3%	71.4%	68.9%	69.4%	62.3%
3. Certified product 10% higher in price.	40.5%	30.1%	27.8%	28.3%	15.6%
4. Certified product more than 10% higher in price.	16.2%	12.6%	11.7%	17.0%	9.4%

While our results indicate that some age groups may be more willing to pay more, differences between groups are not substantial. This proposition is supported by the P-values obtained from statistical tests (one-way ANOVA) (see Table 9-22). As can be seen from the figures presented in Table 9-22, the P-values do not provide strong evidence against the null hypothesis. Statistically, our research data does not provide strong evidence of a relationship between age and willingness to pay more for certified wood products.

Table 9-22

P-values for One-way ANOVA for Willingness to Pay Scenarios by Age

Scenario	P-value ^a
1. Certified product same price as non-certified.	0.73
2. Certified product 5% higher in price.	0.93
3. Certified product 10% higher in price.	0.25
4. Certified product more than 10% higher in price.	0.25

^a P-values were calculated from primary/raw data (not from the percentages detailed in Table 9-21), with $\alpha = 0.05$.

9.6.2.3 Frequency with which Environmental Impact is Considered

An analysis of age groups found that, on average, individuals in the “40-49” age group considered the environmental impact of their purchase more frequently than any other age group. Individuals in the “30-39” age group considered the environmental impact the least (see Table 9-23).

Table 9-23

Frequency with which Environmental Impact is Considered by Age

Frequency	Age Group				
	29 or less	30-39	40-49	50-59	60 or over
1. Always	16.2%	9.7%	13.9%	9.4%	9.4%
2. Often	18.9%	25.2%	29.2%	32.1%	31.2%
3. Sometimes	40.5%	32.0%	37.5%	24.5%	28.1%
4. Rarely	18.9%	27.2%	16.7%	24.5%	21.9%
5. Never	5.4%	5.8%	2.8%	9.4%	9.4%
Total	100%	100%	100%	100%	100%
Average Rating ^a	2.78	2.94	2.65	2.92	2.91

^a The average rating is based on the five point scale: 1. always, 2. often, 3. sometimes, 4. rarely, and 5. never. The lower the average rating, the more frequently the group considered the environmental impact.

While variations were found between age groups, the size of variations were not substantial.

In addition, from an analysis of variance (one-way ANOVA) a P-value of 0.47 was calculated.

As a result, we conclude that, statistically, our research data does not provide strong evidence of a relationship between age and the frequency with which environmental impact is considered.

9.6.2.4 Boycotting Behaviour

An analysis of primary data found that larger proportions of younger age groups said they had boycotted a product, either wood or non-wood, in the last year because of environmental concerns. As detailed in Table 9-24, more than half (54.1%) of all interviewees in the age group “29 or under” reported they had boycotted a product in the last year. Approximately one-third of interviewees in the “30-39” and “40-49” age groups boycotted a product, while less than one-fifth of interviewees in the older age groups (“50-59” and “60 or over”) reported they had boycotted a product.

Statistical tests (one-way ANOVA) provided a P-value of 0.009, indicating that the results observed are statistically significant at a level of less than 1%¹⁵. Using Tukey’s multiple comparison procedure, it was determined that differences were statistically significant in only two cases: 1. between the “29 and under” and “50-59” age groups; and 2. between the “29 and under” and “60 and over” age groups.

¹⁵ The P-value was calculated from raw data, with $\alpha = 0.05$.

Table 9-24

Boycotting Behaviour of Interviewees by Age

Age Group	Percentage of Group who had Boycotted Product in Last Year	
	Wood or Non-wood Product	Wood Product
29 or Under	54.1%	8.1%
30-39	33.0%	7.8%
40-49	36.1%	12.5%
50-59	17.0%	9.4%
60 or Over	18.8%	9.4%

With regard to wood products, no substantial differences were observed in the proportions of age groups who reported they had boycotted wood products in the last year. The proportion of each group boycotting wood products because of environmental concerns ranged from 7.8% to 12.5% (see Table 9-24). From an analysis of variance (one-way ANOVA), a P-value of 0.88 was calculated, indicating that our data does not provide strong evidence against the null hypothesis.

While there is strong evidence that a relationship exists between some age groups and boycotting behaviour of non-wood products, statistically, our research does not provide strong evidence of a relationship between age and the boycotting of wood products.

9.6.2.5 Summary

Overall, with all indicators failing to provide statistically strong evidence against the null hypothesis, we conclude that our research does not provide strong evidence of a relationship between age and the likelihood of customers buying environmentally sound wood products.

9.6.3 Possible Relationship between Income and the Environmentally Conscious Customer

In this section we assess whether or not our primary data provides evidence of a relationship between income and the likelihood of customers buying environmentally sound wood products. Are customers who earn higher incomes more likely to buy environmentally sound wood products than customers who earn lower incomes or vice versa?

9.6.3.1 Importance of Environmental Product Attributes

Table 9-25 contains details of the average ratings attributed to the three environmental product attributes by different income groups. In addition, aggregate ratings for the three attributes are detailed. From the aggregate ratings, we can see that individuals in the “CDN\$40,000-CDN\$59,999” income group attributed the highest level of importance to environmental attributes. Interviewees in the “CDN\$60,000-CDN\$79,999” income group attributed the least amount of importance to the environmental product attributes.

Table 9-25

Average Ratings for Environmental Product Attributes by Income^a

Attribute	Income Group (CDN\$000) ^b					
	20 or less	20-39	40-59	60-79	80-99	100 or more
Retailer's Environmental Image	2.55	2.79	2.78	2.49	2.65	2.22
Environmental Impact	3.21	2.95	3.05	2.73	2.83	3.33
Certified as Coming from a Sustainably Managed Forest	2.87	2.92	3.03	2.75	2.91	2.67
Aggregate Rating	2.88	2.88	2.95	2.66	2.80	2.74

^a Interviewees responded on a five point scale from 1. not at all important, to 3. somewhat important to 5. extremely important. The higher the average rating, the greater the level of importance assigned to that attribute when buying a wood product.

^b All income figures represent annual personal income before taxes.

Overall, however, there is little difference between the level of importance attributed to environmental product attributes by each income group. This, coupled with the P-values derived from statistical tests (see Table 9-26) lead us to conclude that our primary data does not, statistically, provide strong evidence of a relationship between income and the level of importance customers attribute to environmental product attributes.

Table 9-26

P-values for Environmental Product Attributes by Income

Attribute	P-value ^a
Retailer's Environmental Image	0.57
Environmental Impact	0.58
Certified as Coming from a Sustainably Managed Forest	0.90

^a P-values were calculated from primary/raw data, with $\alpha = 0.05$.

9.6.3.2 Willingness to Pay

An analysis of income groups found that while variations were evident between groups, no income group consistently led in terms of expressing a willingness to pay more (see Table 9-27).

Table 9-27

Willingness to Pay More for Certified Wood Products by Income

Scenario	Percentage of Income Group (CDN\$000) who said they would buy Certified Product					
	20 or less	20-39	40-59	60-79	80-99	100 or over
1. Certified product same price as non-certified.	100.0%	98.4%	91.1%	94.0%	91.7%	100.0%
2. Certified product 5% higher in price.	55.0%	77.0%	68.4%	68.0%	75.0%	60.0%
3. Certified product 10% higher in price.	25.0%	39.4%	20.3%	26.0%	41.7%	30.0%
4. Certified product more than 10% higher in price.	15.0%	14.8%	11.4%	14.0%	16.7%	20.0%

Statistical tests (one-way ANOVA) were completed to determine if any statistically significant differences existed between income groups. The P-values are detailed in Table 9-28.

Table 9-28

P-values for One-way ANOVA for Willingness to Pay Scenarios by Age

Scenario	P-value ^a
1. Certified product same price as non-certified.	0.59
2. Certified product 5% higher in price.	0.49
3. Certified product 10% higher in price.	0.10
4. Certified product more than 10% higher in price.	0.96

^a P-values were calculated from primary/raw data (not from the percentages detailed in Table 9-27), with $\alpha = 0.05$.

As can be seen from the P-values detailed in Table 9-28, the observed results of the three “pay more” scenarios (Scenarios 2, 3 and 4 in Table 9-28) do not provide statistically strong evidence that a relationship exists. As a result, we conclude that, statistically, our data does not provide strong evidence of a relationship between income and willingness to pay more for certified wood products.

9.6.3.3 Frequency with which Environmental Impact is Considered

As with the previous two indicators, when interviewees responses were assessed in terms of income, our data provided no statistically strong evidence of a relationship between income and the frequency with which the environmental impact was considered. As can be seen from

the average ratings detailed in Table 9-29, our results are somewhat mixed, with no overall relationship apparent.

Table 9-29

Frequency with which Environmental Impact is Considered by Income

Frequency	Income Group (CDN\$000)					
	20 or less	20-39	40-59	60-79	80-99	100 or over
1. Always	10.0%	11.5%	12.7%	8.0%	4.2%	0.0%
2. Often	40.0%	26.2%	31.6%	26.0%	37.5%	10.0%
3. Sometimes	25.0%	42.6%	26.6%	36.0%	16.7%	60.0%
4. Rarely	25.0%	14.8%	24.1%	18.0%	41.7%	30.0%
5. Never	0.0%	4.9%	5.1%	12.0%	0.0%	0.0%
Total	100%	100%	100%	100%	100%	100%
Average Rating ^a	2.65	2.75	2.77	3.00	2.96	3.20

^a The average rating is based on the five point scale: 1. always, 2. often, 3. sometimes, 4. rarely, and 5. never. The lower the average rating, the more frequently the group considered the environmental impact.

While no overall relationship is apparent, there appears to be a difference in the average ratings provided by the lower three income groups (ratings from 2.65 to 2.77) and the three higher income groups (ratings from 2.96 to 3.20). An analysis of variance (one-way ANOVA), however, provided a P-value of 0.55, enabling us to conclude that, statistically, our

data does not provide strong evidence of a relationship between income and the frequency with which environmental impact is considered¹⁶.

9.6.3.4 Boycotting Behaviour

From an analysis of our primary data we found variations between income groups in terms of boycotting behaviour. Almost half of the interviewees (47.5%) in the “CDN\$20,000-CDN\$39,999” income group reported that they had boycotted a product, either wood or non-wood, in the last year due to environmental concerns. By comparison, less than one-fifth of interviewees (16.7%) in the “CDN\$80,000-CDN\$99,999” income group reported they had boycotted a product. While such variations are evident, there appears to be no overall relationship between income and the boycotting behaviour of interviewees (see Table 9-30).

¹⁶ The P-value was calculated from raw data, with $\alpha = 0.05$.

Table 9-30

Boycotting Behaviour of Interviewees by Income^a

Income Group	Percentage of Group who had Boycotted Product in Last Year	
	Wood or Non-wood Product	Wood Product
Under CDN\$20,000	30.0%	0.0%
CDN\$20,000-39,999	47.5%	16.4%
CDN\$40,000-59,999	32.9%	6.3%
CDN\$60,000-79,999	30.0%	6.3%
CDN\$80,000-99,999	16.7%	4.2%
CDN\$100,000 or more	20.0%	20.0%

While it is proposed that no overall relationship exists, if we exclude the first and last income groups (“under CDN\$20,000” and “CDN\$100,000 or more”), it appears that a relationship may exist. As we move from the second income group (“CDN\$20,000-CDN\$39,999”) to the fifth income group (“CDN\$80,000-CDN\$99,999”) we can see a general trend, with a decreasing proportion of higher income groups reporting that they had boycotted a product in the last year (see Table 9-30). This applies in both cases: wood or non-wood products and wood products. An analysis of variance (one-way ANOVA) was completed to assess the statistical significance of the observed results (see Table 9-31).

Table 9-31

P-values for One-way ANOVA for Boycotting Behaviour by Income

	P-value ^a
Boycotting of products (wood and non-wood) in last year	0.085
Boycotting of wood products in last year	0.130

^a P-values were calculated from primary/raw data (not from the percentages detailed Table 9-30), with $\alpha = 0.05$.

The P-values for boycotting behaviour (see Table 9-31) indicate that, statistically, our data does not provide strong evidence of a relationship between income and the boycotting of products. Without statistically strong evidence of a relationship between income and the boycotting behaviour of interviewees, we are unable to reject the null hypothesis.

9.6.3.5 Summary

With none of the four indicators providing statistically strong evidence against the null hypothesis, we conclude that our data does not provide strong evidence of a relationship between income and the likelihood of customers buying environmentally sound wood products.

9.6.4 Possible Relationship between Place of Residence and the Environmentally Conscious Customer

To assess the possibility of a relationship between place of residence (urban versus rural) and the likelihood of customers buying environmentally sound wood products, interviewees were categorised according to where they were interviewed. Those interviewed in Vancouver were categorised as urban, while those interviewed in Kelowna and Prince George were categorised as rural.

9.6.4.1 Importance of Environmental Product Attributes

From an analysis of our primary data we found that urban interviewees attributed a higher level of importance to all three environmental attributes than their counterparts in rural areas (see Table 9-32).

Table 9-32

Average Ratings for Environmental Product Attributes by Place of Residence^a

Attribute	Urban	Rural
Retailer's Environmental Image	3.43	2.64
Environmental Impact	3.68	2.90
Certified as Coming from a Sustainably Managed Forest	3.86	2.76
Aggregate Rating	3.66	2.77

^a Interviewees responded on a five point scale from 1. not at all important, to 3. somewhat important to 5. extremely important. The higher the average rating, the greater the level of importance assigned to that attribute when buying a wood product.

To establish the statistical significance of the research results, two-sample t-tests were completed (see Table 9-33).

Table 9-33

P-values for Environmental Product Attributes by Place of Residence

Attribute	P-value ^a
Retailer's Environmental Image	0.34
Environmental Impact	0.37
Certified as Coming from a Sustainably Managed Forest	0.057

^a P-values were calculated from primary/raw data, with $\alpha = 0.05$.

Two of the P-values derived from the t-tests (for “retailer’s environmental image” and “environmental impact”) did not provide strong evidence against the null hypothesis. The P-value associated with the third environmental attribute, however, indicated that a relationship may exist between place of residence and the importance attributed to the certification attribute. The P-value for this attribute ($P = 0.057$), indicates that the observed results would occur only 5.7% of the time if the null hypothesis was true. While this may be viewed as strong evidence, the results associated with the other two environmental attributes provide no consistency. Therefore, we conclude that, overall, our data does not provide statistically strong evidence of a relationship between place of residence and the importance customers attribute to environmental product attributes.

9.6.4.2 Willingness to Pay

With regard to willingness to pay, a larger proportion of urban interviewees reported that they would pay more for certified wood products in all three “pay more” scenarios (Scenarios 2, 3 and 4 in Table 9-34).

Table 9-34

Willingness to Pay More for Certified Wood Products by Place of Residence

Scenario	Percentage of Group who said they would buy Certified Product		P-value ^a
	Urban	Rural	
1. Certified product same price as non-certified.	96.0%	93.5%	0.22
2. Certified product 5% higher in price.	76.0%	63.0%	0.025
3. Certified product 10% higher in price.	30.0%	27.5%	0.72
4. Certified product more than 10% higher in price	19.0%	10.5%	0.85

^a P-values were calculated from primary/raw data (not from the percentages detailed in the above table), with $\alpha = 0.05$.

While the proportion of urban interviewees willing to pay more was consistently higher, the P-values for two of the three “pay more” scenarios (Scenarios 3 and 4), indicate that our results do not provide statistically strong evidence against the null hypothesis. The P-value for Scenario 2, however, ($P = 0.025$) provides strong evidence against the null hypothesis.

According to the two-sample t-test, the observed result would only occur 2.5% of the time if the null hypothesis was true. While this provides statistically strong evidence of a relationship, without consistent results from either of the other two “pay more” scenarios, we are unable to conclude that a relationship does exist. Overall, our research does not, statistically, provide strong evidence of a relationship between place of residence and willingness to pay.

9.6.4.3 Frequency with which Environmental Impact is Considered

According to our research, there is little difference with regard to the frequency with which interviewees in urban and rural areas consider the environmental impact of the product when purchasing a wood product (see Table 9-35).

Table 9-35

Frequency with which Environmental Impact is Considered by Place of Residence

Frequency	Urban	Rural
1. Always	13.0%	10.5%
2. Often	22.0%	30.5%
3. Sometimes	35.0%	31.0%
4. Rarely	26.0%	21.0%
5. Never	4.0%	7.0%
Total	100%	100%
Average Rating ^a	2.86	2.84

^a The average rating is based on the five point scale: 1. always, 2. often, 3. sometimes, 4. rarely, and 5. never. The lower the average rating, the more frequently the group considered the environmental impact.

As can be seen from the figures presented in Table 9-35, urban interviewees, on average, scored 2.86, while their rural counterparts scored 2.84. In addition, a two-way t-test provided a P-value of 0.85. From these results we can conclude that our data does not provide

statistically strong evidence of a relationship between place of residence and the frequency with which interviewees consider the environmental impact of purchasing a wood product.

9.6.4.4 Boycotting Behaviour

Our study found that a larger proportion of urban interviewees (42% as opposed to 25% for rural interviewees) said they had boycotted or avoided a product, either wood or non-wood, in the last year because of environmental concerns. In addition, a larger proportion of urban interviewees reported that they had boycotted a wood products in the last year - 19% compared to 4.5% for rural interviewees. Two-sample t-tests were completed to establish the statistical significance of these results (see Table 9-36).

Table 9-36

P-values for Boycotting Behaviour by Place of Residence

	P-value ^a
Boycotting of products (wood and non-wood) in last year	0.0053
Boycotting of wood products in last year	0.0008

^a P-values were calculated from primary/raw data (not from percentage figures), with $\alpha = 0.05$.

Both t-tests provided strong evidence against the null hypothesis, indicating that the observed results would occur less than 1% of the time if the null hypothesis was true. As a result, we

conclude that, statistically, our data provides strong evidence of a relationship between place of residence (urban versus rural) and customers boycotting behaviour. According to our results, urban home improvement shoppers are more likely to boycott products due to environmental concerns than their counterparts in rural areas.

9.6.4.5 Summary

From an analysis of our primary data we found that:

1. urban interviewees attributed a greater level of importance to environmental product attributes when buying wood products than their rural counterparts;
2. a greater proportion of urban interviewees expressed a willingness to pay more for certified wood products;
3. there was no substantial difference between groups with regard to the frequency with which they considered the environmental impact of buying a wood product; and
4. a greater proportion of urban than rural interviewees boycotted home improvement products (both wood and non-wood) in the last year.

While three out of the four criteria indicate that urban interviewees are more likely buyers of environmentally sound wood products, only one of our indicators (boycotting behaviour) was statistically significant at a level of 5% or less. As a result, we conclude that, statistically, our research provides some but not consistently strong evidence against the null hypothesis.

Overall, our research does not provide statistically strong evidence of a relationship between

place of residence and the likelihood of customers buying environmentally sound wood products.

9.6.4.6 Differences between the Rural Communities - Kelowna and Prince George

As noted in Chapter 2 (section 2.5), two rural communities of a different nature (Kelowna and Prince George) were chosen as research areas, in addition to the urban area of Vancouver. While we were primarily interested in any relationship/difference with regard to the responses of urban and rural interviewees, we also wanted to analyse potential differences between the responses of interviewees of the two rural locations.

To determine if any differences existed between the responses of interviewees in Kelowna and Prince George comparisons of data were made and statistical tests (two-way t-tests) were completed. As with all other relationships, the four indicators were assessed. The analysis which was completed showed no major differences between the two groups of interviewees and none of the two-way t-tests provided a P-value of 0.05 or less¹⁷. Overall, we can conclude that, statistically, our data does not provide strong evidence of a difference in the responses of interviewees in the two rural communities.

¹⁷ P-values were calculated from raw data, with $\alpha = 0.05$.

9.6.5 Possible Relationship between Market Segment and the Environmentally Conscious Customer

In this section we explore whether or not our primary data indicates that there is a relationship between market segment and the likelihood of customers buying environmentally sound wood products. Are customers who mainly buy wood products for their own use more likely to buy environmentally sound wood products than those who mainly buy for contractual work or vice versa?

9.6.5.1 Importance of Environmental Product Attributes

On average, interviewees who bought wood products mainly for contractual work (the professional segment) attributed a higher level of importance to two of the three environmental attributes (“retailer’s environmental image” and the fact that the product is “certified as coming from a sustainably managed forest”) than interviewees who bought wood products mainly for their own use (the consumer segment). Interviewees who mainly bought wood products for their own use, however, attributed a higher level of importance to the “environmental impact” (see Table 9-37).

Table 9-37

Average Ratings for Environmental Product Attributes by Market Segment^a

Attribute	Consumer	Professional
Retailer's Environmental Image	2.74	2.64
Environmental Impact	2.89	3.17
Certified as Coming from a Sustainably Managed Forest	2.83	3.00
Aggregate Rating	2.82	2.94

^a Interviewees responded on a five point scale from 1. not at all important, to 3. somewhat important to 5. extremely important. The higher the average rating, the greater the level of importance assigned to that attribute when buying a wood product.

To assess the statistical significance of the research data, two-sample t-tests were completed.

The P-values of these tests are detailed in Table 9-38.

Table 9-38

P-values for Environmental Product Attributes by Market Segment

Attribute	P-value ^a
Retailer's environmental image	0.73
Environmental impact	0.10
Certified as coming from a sustainably managed forest	0.41

^a P-values were calculated from primary/raw data, with $\alpha = 0.05$.

As can be seen from the P-values detailed in Table 9-38, our data does not provide statistically strong evidence against the null hypothesis. As a result, we conclude that, statistically, our data does not provide strong evidence of a relationship between market segment and the level of importance attributed to environmental product attributes.

9.6.5.2 Willingness to Pay

A larger proportion of interviewees in the consumer segment than the professional segment expressed a willingness to pay more for certified wood products in each of the three “pay more” scenarios (Scenarios 2, 3 and 4 in Table 9-39).

Table 9-39

Willingness to Pay More for Certified Wood Products by Market Segment

Scenario	Percentage of Segment who said they would buy Certified Product		P-value ^a
	Consumer	Professional	
1. Certified product same price as non-certified.	93.2%	98.4%	0.18
2. Certified product 5% higher in price.	68.3%	62.5%	0.33
3. Certified product 10% higher in price.	31.4%	17.2%	0.034
4. Certified product more than 10% higher in price.	13.6%	12.5%	0.75

^a P-values were calculated from primary/raw data (not from the percentages detailed in the above table), with $\alpha = 0.05$.

As can be seen from the figures presented in Table 9-39, the difference between the proportions of interviewees in each segment expressing a willingness to pay more is not substantially large, with the exception of Scenario 3. In Scenario 3, 31.4% of interviewees in the consumer segment said they would pay 10% more for certified wood products, while 17.2% of interviewees in the professional segment said they would pay 10% more. To determine the statistical significance of our observations, two-sample t-tests were completed (see Table 9-39 for P-values). The P-value for Scenario 3 ($P = 0.034$) indicates that our data does provide statistically strong evidence against the null hypothesis. While this is proposed, without consistency in Scenarios 2 and 4, it is reasonable to conclude that, overall, our data does not provide statistically strong evidence of a relationship between market segment and willingness to pay more for certified wood products.

9.6.5.3 Frequency with which Environmental Impact is Considered

An analysis of the primary data found that interviewees in the professional segment thought more frequently about the environmental impact of purchasing a wood product than their counterparts in the consumer segment (Table 9-40).

Table 9-40

Frequency with which Environmental Impact is Considered by Market Segment

Frequency	Consumer	Professional
1. Always	11.0%	12.5%
2. Often	25.4%	35.9%
3. Sometimes	33.5%	21.9%
4. Rarely	23.7%	18.8%
5. Never	6.4%	4.7%
Total	100%	100%
Average Rating ^a	2.89	2.67

^a The average rating is based on the five point scale: 1. always, 2. often, 3. sometimes, 4. rarely, and 5. never. The lower the average rating, the more frequently the group considered the environmental impact.

The two-sample t-test completed to assess the statistical significance of the observed results provided a P-value of 0.15 - statistically, our data does not provide strong evidence that a relationship exists between market segment and the frequency with which interviewees considered the environmental impact.

9.6.5.4 Boycotting Behaviour

In terms of boycotting behaviour, a larger proportion of interviewees in the professional segment reported that they had boycotted or avoided buying a product, either wood or non-

wood, in the last year because of environmental concerns - 35.9% of interviewees in the professional segment said they had boycotted, while 29.2% of interviewees in the consumer segment said they had. In addition, with regard to wood products, a greater proportion of interviewees in the professional segment reported they had boycotted a wood product in the last year - 15.6% as opposed to 6.0% for the consumer segment. Two-sample t-tests were completed to assess the statistical significance of these results (see Table 9-41). As can be seen from the P-values presented in Table 9-41, our primary data does not provide statistically strong evidence of a relationship between market segment and boycotting behaviour.

Table 9-41

P-values for Boycotting Behaviour by Market Segment

	P-value ^a
Boycotting of products (wood and non-wood) in last year	0.23
Boycotting of wood products in last year	0.11

^a P-values were calculated from primary/raw data (not from percentage figures), with $\alpha = 0.05$.

9.6.5.5 Summary

With all four indicators failing to show statistically strong evidence of a relationship, we conclude that our primary data does not provide strong evidence of a relationship between market segment and the likelihood of customers buying environmentally sound wood products.

As with all the possible relationships tested in preceding sections, we failed to reject the null hypothesis. Overall, our primary data does not provide statistically strong evidence of a relationship between interviewees' characteristics (demographic characteristics, place of residence and market segment) and the likelihood of them buying environmentally sound wood products.

9.6.6 Market Segments for Environmentally Sound Wood Products

In addition to the analysis of possible relationships using predetermined groups (for example, income groups), a cluster analysis was undertaken to identify groups (market segments) within our sample who are the most likely buyers of environmentally sound wood products. As with the relationships tested in previous sections, four indicators were used to help classify observations:

1. the importance attributed to environmental product attributes when buying wood products;
2. interviewees' willingness to pay more for certified wood products;
3. the frequency with which the environmental impact of making a wood product purchase was considered; and
4. interviewees' boycotting behaviour.

It should be noted that only those interviewee records which were complete in all the necessary fields were used in the cluster analysis¹⁸. Of the three hundred interviewee records, 210 were complete in the necessary fields.

Using the statistical software package Minitab, two, three, four, five and six cluster solutions were considered. In accordance with Minitab (11-21) guidelines on how to determine the final grouping of clusters, a four cluster solution was chosen¹⁹. From the quantitative information generated in the cluster analysis, qualitative rankings for each of the four clusters, according to each of the four indicators, were developed (see Table 9-42).

¹⁸ Areas in which interviewees' records needed to be complete were: responses to questions which allowed the four indicators to be assessed (questions three, four, six, seven and eight in the research instrument; see Appendix 1) and responses to questions regarding interviewees' characteristics (questions nine, ten, eleven and twelve in the research instrument).

¹⁹ The four cluster solution was chosen by assessing the pattern of change in the values for "similarity level" and "distance level". These values changed abruptly after the four cluster clustering step.

Table 9-42

Cluster Analysis Results

Indicator	Cluster 1 (n=62) ^a	Cluster 2 (n=71)	Cluster 3 (n=56)	Cluster 4 (n=21)
Importance of Environmental Attributes	Second Highest	Lowest	Second Lowest	Highest
Willingness to Pay	Second Highest	Lowest	Second Lowest	Highest
Frequency with which Environmental Impact was Considered	Second Highest	Lowest	Second Lowest	Highest
Boycotting Behaviour	Highest	Second Highest	Second Lowest	Lowest

^a The letter 'n' represents the number of interviewees in the cluster.

As can be seen from the results presented in Table 9-42, Clusters 1 and 4 are the most likely buyers of environmentally sound wood products. Cluster 1 ranked the highest for one of the indicators (boycotting behaviour) and second highest with regard to the remaining three indicators. Table 9-43 below provides a profile of Cluster 1 in terms of the four indicators. Using the results presented in Table 9-43, we can describe interviewees in Cluster 1 as 'boycotters, expressing a willingness to pay more for environmentally sound wood products,

who consider environmental attributes to be somewhat important in their buying decision and who often consider the environmental impact of their purchases’.

Table 9-43

Clusters Compared on Environmental Indicators

Indicator	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Aggregate Rating Given to Environmental Product Attributes ^a	3.38	2.07	2.65	4.17
Willingness to Pay:				
5% more	85% ^b	34% ^b	88% ^b	76% ^b
10% more	44% ^b	11% ^b	21% ^b	48% ^b
More than 10%	29% ^b	4% ^b	5% ^b	43% ^b
Frequency with which Environmental Impact was Considered ^c	3.84	2.42	3.09	4.14
Boycotting Behaviour ^d :				
Any Product	100%	7%	4%	0%
Wood Products	32%	1%	0%	0%

^a Ratings are based the five point scale from 1. not at all important, to 3. somewhat important to 5. extremely important.

^b Percentage figures represent the proportion of each cluster who said they would pay more at each price/premium.

^c Rating are based on the five point scale: 1. never, to 3. sometimes, to 5. always.

^d Percentage figures represent the proportion of the cluster reporting that they had boycotted a product in the last year due to environmental concerns.

Cluster 4 ranked the highest in three of the four indicators. Cluster 4 interviewees attributed the highest level of importance to environmental attributes when buying wood products, expressed the highest level of willingness to pay more for certified wood products and considered the environmental impact of their purchases more frequently. Unlike Cluster 1 interviewees, however, they did not boycott products (see Tale 9-43). Cluster 4 interviewees may be described as 'non-boycotters, expressing a willingness to pay more for environmentally sound wood products, who consider environmental attributes to be very important in their buying decisions and who, more than often, consider the environmental impact of their purchase'.

Combined, Clusters 1 and 4 contain eighty-three interviewees, equivalent to 40% of all interviewees included in the cluster analysis. Cluster 1 is the larger of the two clusters and contains sixty-two interviewees, equivalent to 30% of all interviewees included in the cluster analysis. By comparison, Cluster 4 contains twenty-one interviewees, equivalent to 10% of all interviewees included in the cluster analysis.

From our cluster analysis, we have determined the most likely buyers of environmentally sound wood products within our sample - Clusters 1 and 4 - and calculated their importance in terms of the proportion of total interviewees for which they account. There is a need, however, to profile clusters to establish whether or not there are any characteristics by which they can be readily identified. In order to profile clusters, they were assessed according to the following characteristics: 1. age; 2. gender; 3. income; 4. market segment (consumer versus

professional); and 5. place of residence (urban versus rural). Table 9-44 contains details of these characteristics for each cluster.

Table 9-44

Clusters Compared on Selected Characteristics

Characteristic	Cluster 1 (n=62)	Cluster 2 (n=71)	Cluster 3 (n=56)	Cluster 4 (n=21)
Average Age (years) ^a	38.8	42.5	41.5	45.4
Gender (proportion female)	22.6%	16.9%	14.3%	19.0%
Average Income (CDN\$) ^a	46,089	52,739	53,411	61,429
Market Segment (proportion professional)	30.6%	21.1%	12.5%	28.6%
Place of Residence (proportion urban)	46.8%	26.8%	26.8%	38.1%

^a Average values were calculated assuming that interviewees within the predetermined age and income groups could be attributed the median value of the group. For example, interviewees in the age group "30-39" were attributed an age of 34.5 years.

From the information detailed in Table 9-44, we are able to profile clusters in relation to each other. When compared to other clusters, Cluster 1 can be described as relatively young (average age of approximately thirty-nine), consisting of a high proportion of female interviewees (22.6%), having the lowest average income (CDN\$46,089) of any cluster, and having a high proportion of interviewees from the professional market segment (30.6%). In addition, Cluster 1 contains the highest proportion of urban interviewees (46.8%).

Similar to Cluster 1, Cluster 4 consists of a relatively high proportion of interviewees who were interviewed in an urban area (38.1%). In addition, and again similar to Cluster 1, Cluster 4 consists of a relatively high proportion of female interviewees (19.0%) and has a high proportion of interviewees from the professional market segment (28.6%). In contrast to Cluster 1 and the other two clusters, Cluster 4 can be described as relatively old (approximate age of forty-five), with a high average income (CDN\$61,429). While the most likely buyers of environmentally sound wood products (Clusters 1 and 4) have similar characteristics in terms of gender (proportion of cluster accounted for by females), market segment (proportion of cluster accounted for by customers from the professional market segment) and place of residence (proportion of interviewees interviewed in an urban area), they are in contrast in terms of age and income. When compared to Cluster 1 and the other two clusters, Cluster 4 interviewees are, on average, older with higher incomes.

Although the information presented in Table 9-44 enables us to describe clusters in relation to each other, statistical testing is necessary to establish the statistical significance of our observations. The purpose of the statistical tests are to determine whether or not our data provides sufficiently strong evidence to enable us to differentiate clusters from each other on the basis of the characteristics assessed: age, income, gender, market segment and place of residence. Statistical tests were completed between all clusters and, in common with previous statistical tests, we were seeking a statistical significance level of 5% or less ($P \leq 0.05$).

With regard to age, an analysis of variance (one-way ANOVA) resulted in a P-value of 0.094. From the P-value calculated, we can conclude that our data does not provide statistically strong evidence against the null hypothesis (that is, that the means of the clusters are the same). As a result, we conclude that we cannot readily identify members of different clusters on the basis of age. Consequently, we are unable to identify the most likely buyers of environmentally sound wood products (Clusters 1 and 4) from the least likely buyers (Clusters 2 and 3) according to age.

In terms of income, a P-value of 0.047 was calculated, indicating that our data provides statistically strong evidence that some clusters can be differentiated from each other on the basis of income. Using Tukey's multiple comparison procedure, we were able to determine that a statistically significant difference existed only between Clusters 1 and 4 and not across all four clusters. While this means that Clusters 1 and 4 can be differentiated from each other on the basis of income (Cluster 1 containing relatively low earners, while Cluster 4 contains high earners), neither of these clusters can be differentiated from either of the other two clusters according to income. As a result, statistically, our results do not provide strong enough evidence to enable us to differentiate the most likely buyers of environmentally sound wood products (Clusters 1 and 4) from the least likely buyers (Clusters 2 and 3) on the basis of income.

With regard to gender, market segment and place of residence, z-tests, incorporating Bonferroni's adjustment procedure, were used to assess the statistical significance of the

observed results. From these statistical tests, it was found that our data was not statistically significant at a level of 5% or less, across all four clusters, in terms of: gender (proportion of female interviewees); market segment (proportion of interviewees from the professional market segment); or place of residence (proportion of interviewees interviewed in an urban area).

According to our analysis, a statistically significant difference existed in only one case - between Clusters 1 and 2 in terms of place of residence ($P = 0.0082$). From this, we can conclude that Cluster 1 interviewees (likely buyers of environmentally sound wood products) are more likely to be urban than their counterparts in Cluster 2 (less likely buyers of environmentally sound wood products). Overall, we can conclude that, statistically, our research provides some but not consistently strong evidence that the more likely buyers of environmentally sound wood products will tend to be urban.

In summary, from our sample, we identified two groups/clusters which are the most likely buyers of environmentally sound wood products - Clusters 1 and 4. These two clusters are similar with regard to three of the five characteristics which were assessed. Both clusters contained: 1. a relatively high proportion of female interviewees; 2. a high proportion of interviewees from the professional market segment; and 3. a high proportion of urban interviewees (see Table 9-44). While this is the case, our data was not found to provide sufficiently strong evidence against the null hypothesis to enable us to reach firm conclusions regarding these characteristics and the likelihood of customers buying environmentally sound

wood products. As a result, we conclude that the most likely buyers of environmentally sound wood products cannot be readily identified by a set of common characteristics. While this is the case, our results may be viewed to provide an indication of possible relationships (between gender, place of residence, market segment and the likelihood of customers buying environmentally sound wood products) and additional, more extensive research would be beneficial in this area.

10. CONCLUSIONS AND RECOMMENDATIONS

It is generally agreed that environmental concern has increased in recent years, causing environmental issues to become increasingly important in the wood products sector. There is less agreement, however, regarding the significance of this increase and whether or not it is leading to a change in customers' attitudes and subsequently affecting customers' buying decisions as well as the profitability of wood products companies.

This study aimed to gauge customers' attitudes towards environmentally sound wood products in the home improvement market. The following conclusions and recommendations are based on the results of three hundred customer interviews which were completed outside three home improvement retail outlets in British Columbia, Canada.

10.1 Conclusions

10.1.1 Customers' Attitudes Towards Environmental Product Attributes

When buying wood products, customers first shop for quality and then price. Environmental attributes are less important than price, quality and many other attributes (appearance, strength, location and size of knots, species and grain pattern). While less important than many other attributes, environmental product attributes are still "somewhat important" in customers buying decisions. For some customers (approximately one-third of our sample), some environmental attributes are viewed as either "very" or "extremely important" in their buying decision.

In the future, environmental product attributes may become more important in customers' buying decisions, should product labels provide additional environmental information, as requested by some customers.

10.1.2 Customers' Attitudes Towards Pricing

From our data, we can conclude that customers are expressing a willingness to pay more for environmentally sound wood products. The majority of interviewees (55%) agreed that "Having to pay more for environmentally sound wood products is acceptable" and approximately two-thirds (67.3%) reported that they would pay 5% more for certified wood products. Should certified wood products be priced at a 10% premium, however, the majority of customers reported they would not buy them, provided that substitutes exist.

10.1.3 Who are the most likely Environmentally Conscious Customers?

Within our sample, four distinct clusters/groups were identified, two of which can be described as likely buyers of environmentally sound wood products. Combined, these two groups accounted for 40% of all interviewees assessed in our cluster analysis. Both groups were found to: 1. attribute a relatively high level of importance to environmental product attributes when buying wood products; 2. express a high degree of willingness to pay more for certified wood products; and 3. consider the environmental impact of their purchases relatively frequently. They differed in terms of their boycotting behaviour. All members of the first and largest group (Cluster 1) reported that they had boycotted a product in the last

year due to environmental concerns. By comparison, none of the interviewees in the second group (Cluster 4) reported that they had boycotted a product in the last year.

With regard to interviewee's characteristics (age, income, gender, place of residence and market segment), the four clusters were analysed to determine whether or not clusters could be differentiated from each other according to certain characteristics. From this analysis, we can conclude that our data does not provide statistically strong evidence to enable us to differentiate clusters from each other on the basis of the characteristics assessed. As a result, we can also conclude that, statistically, our data does not provide strong evidence that the most likely buyers of environmentally sound wood products (Clusters 1 and 4) can be readily identified by a set of common characteristics. While this is the case, our research does suggest that environmentally conscious customers may share some common characteristics. In terms of common characteristics amongst interviewees in the two groups which are considered to be the most likely buyers of environmentally sound wood products (Clusters 1 and 4), both groups contained: 1. a relatively high proportion of female interviewees; 2. a high proportion of interviewees from the professional market segment; and 3. a high proportion of urban interviewees. Interviewees in the two groups (Clusters 1 and 4) differed from each other and the other two clusters in terms of income and age. While interviewees in the first group (Cluster 1) are relatively young (average age of thirty-nine) with a relatively low average income (CDN\$46,089), interviewees in the second group (Cluster 4) are relatively old (average age of forty-five) with a relatively high income (CDN\$61,429). While these

similarities and differences were determined, it should be noted that our data was not found to be statistically significant at a level of 5%.

10.2 Recommendations

With customers reporting that environmental product attributes are “somewhat important” in their buying decisions and with a majority claiming that they would pay 5% more for certified wood products, there is thought to be a need to assess customers’ actual behaviour. Due to possible differences between what customers say they will do and what they actually do, test marketing is recommended.

Test marketing would enable companies to gauge whether or not, in reality, environmental product attributes are important in customers’ buying decisions. In addition, customers’ actual willingness to pay price premiums could be assessed, with certified wood products being sold at different price premiums at different store locations. The results of these tests would enable companies to assess alternative pricing strategies and plan with a greater degree of confidence, should they decide to market environmentally sound wood products on a larger scale in the future.

With our data suggesting, but not providing statistically strong evidence, that environmentally conscious customers may share some common characteristics, it is recommended that additional, more extensive research be completed. Such research could be undertaken as part of a test marketing exercise. The details of customers (for example, place of residence) who

purchase environmentally sound wood products during the test marketing period could be gathered using customer accounts (where store accounts are used) or through pre-paid response cards enclosed with environmentally sound wood products.

Overall, test marketing would enable the key issues assessed in this study to be explored more thoroughly and, more importantly, it would enable companies to assess customers' actual behaviour.

It should be noted that the conclusions and recommendations presented above are based on our primary research, which has several limitations (see section 2.6). Caution should be used when interpreting the results of this study. All conclusions are limited to our sample only.

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²⁰ Article was received as photocopy from The Home Depot. Date of publication was not detailed.

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APPENDIX 1: RESEARCH INSTRUMENT

WOOD PRODUCTS SURVEY

1. Approximately how often do you shop at home improvement retail outlets?

- 1 ONCE A YEAR
- 2 2 OR 3 TIMES A YEAR
- 3 ONCE A MONTH
- 4 2 OR 3 TIMES A MONTH
- 5 ONCE A WEEK OR MORE

2. Approximately how often do you buy wood products?

- 1 ONCE A YEAR OR LESS
- 2 2 OR 3 TIMES A YEAR
- 3 ONCE A MONTH
- 4 2 OR 3 TIMES A MONTH
- 5 ONCE A WEEK OR MORE

3. When buying a wood product from a home improvement retailer, how important are the following product features?

	<i>NOT AT ALL IMPORTANT</i>	<i>NOT VERY IMPORTANT</i>	<i>SOMEWHAT IMPORTANT</i>	<i>VERY IMPORTANT</i>	<i>EXTREMELY IMPORTANT</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
GRAIN PATTERN	1	2	3	4	5
LOCATION & SIZE OF KNOTS	1	2	3	4	5
SPECIES	1	2	3	4	5
QUALITY	1	2	3	4	5
APPEARANCE	1	2	3	4	5
STRENGTH	1	2	3	4	5
BRAND NAME	1	2	3	4	5
PRICE	1	2	3	4	5
RETAILER'S ENVIRONMENTAL IMAGE	1	2	3	4	5
ENVIRONMENTAL IMPACT	1	2	3	4	5
CERTIFIED AS COMING FROM A SUSTAINABLY MGD. FOREST	1	2	3	4	5

4. Please indicate whether you would buy the certified or non-certified wood product in each of the following four situations?

	CERTIFIED PROD.	PRICE OF CERTIFIED PROD. IN RELATION TO NON-CERTIFIED PROD.	NON-CERTIFIED PROD.
1	<input type="checkbox"/>	<i>SAME PRICE</i>	<input type="checkbox"/>
2	<input type="checkbox"/>	<i>5% HIGHER</i>	<input type="checkbox"/>
3	<input type="checkbox"/>	<i>10% HIGHER</i>	<input type="checkbox"/>
4	<input type="checkbox"/>	<i>10%+ HIGHER</i>	<input type="checkbox"/>

5. For each of the following statements please indicate your level of agreement:

	<i>STRONGLY DISAGREE</i>	<i>DISAGREE</i>	<i>NO OPINION</i>	<i>AGREE</i>	<i>STRONGLY AGREE</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
a) Customers should pay more for environmentally sound wood products.	1	2	3	4	5
b) Having to pay more for environmentally sound wood products is acceptable.	1	2	3	4	5
c) The forest products industry should pay for any increased costs of environmentally sound wood products.	1	2	3	4	5

6. When buying wood products, how often do you consider their impact on the environment?

- 1 ALWAYS
- 2 OFTEN
- 3 SOMETIMES
- 4 RARELY
- 5 NEVER

7. In the last year, have you boycotted or avoided buying any product (either wood or non-wood) because of environmental concerns?

- 1 YES
- 2 NO

8. In the last year, have you boycotted or avoided buying a wood product because of environmental concerns?

- 1 YES
- 2 NO

9. Are the wood products that you buy from a home improvement retailer:

- 1 MAINLY FOR YOUR OWN USE, OR
- 2 MAINLY FOR CONTRACTUAL WORK

10. Which of the following age groups do you fall into? (optional)

- 1 19 OR UNDER
- 2 20-29
- 3 30-39
- 4 40-49
- 5 50-59
- 6 60 OR OVER
- 7 PREFER NOT TO ANSWER

11. What is your approximate annual personal income before taxes²¹? (optional)

- 1 UNDER \$20,000
- 2 \$20,000-\$39,999
- 3 \$40,000-\$59,999
- 4 \$60,000-\$79,999
- 5 \$80,000-\$99,999
- 6 \$100,000 OR OVER
- 7 PREFER NOT TO ANSWER

²¹ All interviews were completed in British Columbia, Canada. As a result, all income figures are in Canadian dollars (CDN\$).

12. Please indicate your gender?

- 1 MALE
- 2 FEMALE

13. Do you have any further comments which you would like to make?

APPENDIX 2: DEMOGRAPHIC SUMMARIES FOR RESEARCH AREAS

1. INTRODUCTION

The information detailed in this appendix aims to provide the reader with background information on the three locations in which the primary research was undertaken: Kelowna, Prince George and Vancouver, British Columbia, Canada.

It should be noted that the statistics provided in this appendix are sourced from the 1991 national census (Statistics Canada, 1992a and 1992b), except where otherwise stated. It should also be noted that average income figures represent the average income of those who are fifteen years or over who have an income. Average income figures do not represent the average per capita income for the areas described.

2. KELOWNA

2.1 Population

Located in the centre of the southern interior of British Columbia, Kelowna has a population of approximately 75,900 (1991). Approximately 52% of the population is male. In 1991, 24.5% of the population were sixty or more. By comparison, the figures for British Columbia and Canada were 15% and 15.9% respectively. The comparatively high figure for Kelowna is mainly due to the attractiveness of the area as a retirement community. Table 2-1 contains details of the age distribution of Kelowna in relation to British Columbia and Canada for 1991.

Table 2-1
Age Distribution for Kelowna, British Columbia and Canada (1991)

	British Columbia	Canada	Kelowna
19 or Under	27.4%	27.7%	24.3%
20-29	15.4%	15.9%	13.7%
30-39	18.0%	17.5%	14.7%
40-49	14.5%	13.7%	12.9%
50-59	9.7%	9.3%	10.0%
60 or Over	15.0%	15.9%	24.5%
Total	100%	100%	100%

Source: Statistics Canada. Profile Of Census Divisions And Subdivisions In British Columbia Part B: 1991. (Ottawa: Statistics Canada, 1992).

2.2 Income

The average income for males in Kelowna in 1991 was CDN\$27,990, while females earned an average of CDN\$16,114. The average family income in 1991 was CDN\$45,754. When compared to provincial and national averages, the average family income in Kelowna was

approximately CDN\$6,000 less in 1991 (see Table 2-2). This is thought to be primarily due to the relatively high proportion of older, retired residents in the city.

Table 2-2
Kelowna: Average Income (1991)

	Kelowna	British Columbia	Canada
	Average Annual Income (CDN\$)		
Males	27,990	31,443	30,205
Females	16,114	17,761	17,577
Family Income	45,754	52,403	51,342

Source: Statistics Canada. Profile Of Census Divisions And Subdivisions In British Columbia Part B: 1991. (Ottawa: Statistics Canada, 1992).

2.3 Further Information

According to the Kelowna Chamber of Commerce, Kelowna's industrial base is diversified. Industries include: agriculture, forestry, secondary manufacturing, trade and services. Kelowna is not dependent on any one industry. Tourism is extremely important to the area, as is agriculture, including fruit growing.

3. PRINCE GEORGE

3.1 Population

Located in the northern interior of British Columbia, Prince George has a population of approximately 69,650 (1991). Approximately 51% of the population is male. In comparison to British Columbia and Canada, the population of the city is relatively young with just over 50% of Prince George's residents under thirty (1991). Approximately 43% of the British Columbian and Canadian residents were under thirty in 1991. Table 3-1 contains details of the age distribution of Prince George in relation to British Columbia and Canada.

Table 3-1

Age Distribution for Prince George, British Columbia and Canada (1991)

	British Columbia	Canada	Prince George
19 or Under	27.4%	27.7%	33.4%
20-29	15.4%	15.9%	16.9%
30-39	18.0%	17.5%	19.0%
40-49	14.5%	13.7%	14.2%
50-59	9.7%	9.3%	8.3%
60 or Over	15.0%	15.9%	8.1%
Total	100%	100%	100%

Source: Statistics Canada. Profile Of Census Divisions And Subdivisions In British Columbia Part B: 1991. (Ottawa: Statistics Canada, 1992).

3.2 Income

In terms of income, the average income in 1991 for males was CDN\$33,504 and for females it was CDN\$16,599. Family income in 1991 averaged CDN\$52,785. The average income level for males in Prince George in 1991 was approximately CDN\$3,000 greater than the national average and CDN\$2,000 greater than the provincial average. On average, females in Prince George earned less than the national and provincial average in 1991. The average family income in the city was approximately the same as the average national and provincial family income (see Table 3-2).

Table 3-2

Prince George: Average Income (1991)

	Prince George	British Columbia	Canada
	Average Annual Income (CDN\$)		
Males	33,504	31,443	30,205
Females	16,599	17,761	17,577
Family Income	52,785	52,403	51,342

Source: Statistics Canada. Profile Of Census Divisions And Subdivisions In British Columbia Part B: 1991. (Ottawa: Statistics Canada, 1992).

3.3 Further Information

As noted by the Prince George Regional Development Corporation "Forestry and mining are British Columbia's most prominent industries and nowhere are they more prominent than in Prince George" (4). The forest industry is viewed as the economic base of Prince George and employs the largest percentage of the labour force - approximately 18%.

4. VANCOUVER

4.1 Population

Located on the coast in the south-west of British Columbia, the Greater Vancouver area has population of approximately 1.54 million (1991). This is equivalent to almost 50% of the province's total population (3.2 million in 1991). According to the 1991 census, the area officially designated as the city of Vancouver had a population of approximately 472,000, equivalent to around 30% of the population of the Greater Vancouver Area. In terms of age distribution, the Greater Vancouver area closely mirrors the provincial and national age distribution (see Table 4-1).

Table 4-1
Age Distribution for Greater Vancouver, British Columbia and Canada (1991)

	British Columbia	Canada	Greater Van.
19 or Under	27.4%	27.7%	24.5%
20-29	15.4%	15.9%	16.8%
30-39	18.0%	17.5%	18.2%
40-49	14.5%	13.7%	14.6%
50-59	9.7%	9.3%	9.4%
60 or Over	15.0%	15.9%	16.5%
Total	100%	100%	100%

Source: Statistics Canada. Profile Of Census Divisions And Subdivisions In British Columbia Part B: 1991. (Ottawa: Statistics Canada, 1992).

4.2 Income

The average income for males in the Greater Vancouver area in 1991 was CDN\$32,828 and for females it was CDN\$19,574. The average family income in Greater Vancouver in that year was CDN\$50,610. On average, individuals in Greater Vancouver earned approximately CDN\$2,000 more than the national average in 1991. Within the city of Vancouver (as opposed to the Greater Vancouver area), the average income of individuals was substantially higher than the provincial and national averages in 1991. Individual's income in Vancouver city was approximately double the provincial and national averages (see Table 4-2).

Table 4-2
Greater Vancouver And Vancouver City: Average Income (1991)

	Greater Vancouver	Vancouver	British Columbia	Canada
Average Annual Income (CDN\$)				
Males	32,828	62,211	31,443	30,205
Females	19,574	27,231	17,761	17,577
Family Income	50,610	102,415	52,403	51,342

Source: Statistics Canada. Profile Of Census Divisions And Subdivisions In British Columbia Part B: 1991. (Ottawa: Statistics Canada, 1992).

APPENDIX 3: ENVIRONMENTALLY SOUND WOOD PRODUCTS

The information in this appendix aims to provide the reader with an indication of the range of environmentally sound wood products which are available. The list has been compiled from a wide range of sources which are referenced. It should be noted that the list is merely a compilation of products which have been seen to be marketed as environmentally sound or proposed by other researchers to be environmentally sound. The list does not represent any form of recommendation for the products contained herein.

Product(s) (Source)	Company
“Environmentally friendly building supplies”. (Environmental Home Center).	Environmental Home Center 1724 4th Ave S. Seattle WA 98134 USA T: (800) 281 9785 (Retailer)
Recycled building supplies, including salvaged lumber and wooden doors and windows. (Happy Harry’s Recycled Building Materials).	Happy Harry’s Recycled Building Materials 1311 Ellis St & 130-1135 Stevens Kelowna T: (250) 762 6622 (Retailer)
Doors (interior, exterior, louvre and cabinet), pine laminated boards, door knobs and handles, wooden flooring, joinery products, coat rails, beading from certified forests. (“FSC Endorsed Products And Timber Available From 1995+ Group Members.”).	B&Q UK (Retailer)
Doors (interior, exterior, louvre), pine laminated boards, flooring, work benches, joinery products, handles, door knobs, coat rails, beading from certified forests. (“FSC Endorsed Products And Timber Available From 1995+ Group Members.”).	Do It All UK (Retailer)
Flooring, door knobs and handles from certified forests. (“FSC Endorsed Products And Timber Available From 1995+ Group Members.”).	Wickes UK (Retailer)

Cedar Closet Lining which is "Earth Friendly", "Reforested Naturally" and "Environmentally Safe". (The Home Depot).	George C. Burns (Supplier) The Home Depot 900 Terminal Avenue Vancouver Tel: (604) 608 1423 (Retailer)
Curtain fittings, paint brushes, charcoal, mouldings, doors, wooden floor tiles, spatula sets, meat mallets, kitchen utensils, handles, door knobs, coat rails, chopping boards from certified forests. ("FSC Endorsed Products And Timber Available From 1995+ Group Members.").	Homebase UK (Retailer)
Recycled/salvaged lumber. (Lavendel 15).	Jonathan Orpin Shortville New York USA (Contractor)
Timber studding for house construction. ("FSC Endorsed Products And Timber Available From 1995+ Group Members.").	Laing Homes Ltd UK (Builder/Contractor)
Garden gates from certified forests. ("FSC Endorsed Products And Timber Available From 1995+ Group Members.").	Premium Timber Products Ltd UK (Timber Merchant)
Chipboard made from shredded discarded drinks cartons. (Peattie 204).	Tetrapak Germany (Manufacturer)
Flooring for intermodal transportation made from waste paper, biosolids, wood processing residues and under-utilised trees. ("Marketing Residuals Into Construction Industry.").	Enviro-Comp Charleston South Carolina USA (Manufacturer)
"Hardwood products from certified 'well managed' forests". (EcoTimber).	EcoTimber USA T: (510) 549 3000 (Manufacturer)
Strong, lightweight, honeycomb panel made from recycled fibres or agricultural fibres. ("Marketing Residuals Into Construction Industry.").	Gridcore Systems Long Beach California USA (Manufacturer)

<p>Environ - composite material which has the appearance of marble and works like wood. Made from waste newspaper and soybean meal. Marketed as replacement for hardboard. ("Marketing Residuals Into Construction Industry.").</p>	<p>Phoenix Biocomposites Mankato Minnesota USA (Manufacturer)</p>
<p>Certified wood pine shelving. (Lober and Eisen 40).</p>	<p>Collins USA (Manufacturer)</p>
<p>Simulated wood surface doors - made to look like doors made from rainforest woods. (Lober and Eisen 40).</p>	<p>Premwood Interior Doors (Manufacturer)</p>
<p>Furniture made from certified wood. (Mater 37).</p>	<p>Knoll Group (Manufacturer)</p>
<p>Furniture made from reclaimed barnwood. (Wildfield Studios).</p>	<p>Wildfield Studios P.O. Box 365 Branford CT 06405 USA T: (203) 481 1837</p>
<p>Homasote boards which are used for wall panelling, carpet underlay and other purposes. Manufactured from 100% post consumer wastepaper. (Mater 36).</p>	

**APPENDIX 4: EXAMPLES OF ENVIRONMENTALLY SOUND WOOD
PRODUCTS WHICH HAVE OBTAINED PREMIUM PRICES**

Company	Product Description
Collins Pine	"Contrary to Mr Waffle's [International Wood Products Association] understanding that a particular retailer (The Home Depot) is offering a certified product (Collins Shelving) at a discount, this product is actually receiving between a 15 and 16 percent premium over competing products" (Brown and Hammel 10).
Yankee Windows	"Lawrence Brendt of Yankee Windows/YWI has stated, 'The current benefits of participating in certification can be seen in the added premiums we have been receiving on every unit we sell'" (Brown and Hammel 10).
Jonathan Orpin	"Because the practice is in its infancy, using recycled wood can wind up being more costly than using virgin timber. But Orpin finds that his clients are willing to pay more" (Lavendel 15).
Buchner Panel Manufacturing	President of Buchner Panel Manufacturing, Lewis Bucher, "said he pays between 5 and 10 percent more for green certified flitches used in his architectural-grade EcoPanels" ("Green Certification: Setting The Stage" 95).
Seven Islands Land Co.	"Seven Islands did not expect any initial price return on its certified lumber.... However, Seven Islands found that due to a strong commitment by its customers to support improved forest management, it immediately received a 10% premium on logs." (Hammel and Ward 166).
Dartington Estate Woodlands	"The hardwood sold to date has only amounted to 18 m ³ , but was purchased by a local craftsman specifically because it was certified. His offer was 825 [pounds sterling] higher than the next highest offer and he has stated subsequently that his price reflected the fact that he could pass that premium on to his customers" (Lonsdale).
Universal Office Supplies	Universal Office Supplies developed a shorthand notebook as part of a range of thirty green products. The product was launched at more than double the conventional price. Sales rapidly reached 25% of those for conventional pads, despite the general cost competitiveness of the market (Peattie 286).
Mellitta Coffee Filters	"Despite a 15% price premium in some markets, 1991 US sales of Mellitta's [unbleached] filters have increased 41% over 1990 and now [1992] account for 26% of Mellitta's US cone filter business." (Ottman 111).