ECHO BOOMER DEMOGRAPHICS: 
HOUSING IN JAPAN AND ENVIRONMENTAL 
PERCEPTIONS OF CONSUMERS

by

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Abstract

Demographic trends and population density drastically affect many aspects of a country’s economy and social structure. In Japan, the trend is one of population decline, with large cohorts of citizens in two main segments termed the ‘baby boomer’ and the ‘echo boomer’ generations.

The purpose of this research is to explore opportunities for imported wood products and to assess perceptions towards environmental issues pertaining to the residential housing market among the demographic segment in Japan known as the baby boomer echo cohort. This cohort is made up of the children of the baby boomers who are now between 26 and 41 years of age and currently comprise 13% of the Japanese population.

Many of these consumers are currently entering the residential housing market and are looking to create and live in urban homes with their newly formed families. This major step by a large cohort is important for Canadian wood producers as Japan is the primary off shore market for its wood products, the primary construction materials for homes in Japan. It is critical to observe the behaviours of this sizeable segment in order to predict future trends for housing trends in urban Japan.
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CO-AUTHORSHIP STATEMENT

I am the primary author of all materials contained in this thesis. The manuscript Chapters (3, 4) were collaborative efforts with members of my thesis committee. With guidance from this committee, I designed the research program, conducted research activities, and preformed all data analysis.

Sarah Saddler – August 2007
1. **Echo Boomer Demographics, Housing in Japan and Environmental Perceptions of Echo Boomers Consumers**

1.1. **Introduction**

Demographics play an important role in any culture and society. In Japan, the trend is one of population decline, with large cohorts of citizens in two generational segments termed the ‘baby boomers’ and the ‘echo boomers’.

With young Japanese couples waiting longer to get married, lower birth rates, and the increasing number of elderly, there are dramatic changes to the typical Japanese household composition underway. Each demographic change has a direct impact on housing, both in terms of new housing starts as well as design, style, and construction methods.

Housing for the baby boomer cohort has been studied in detail due to their preferences and growing requirements for barrier free design and assisted living. Their children, the echo boomers, comprise the other major population bulge in Japan. This cohort includes those born from 1971-1974, although when expanded to encapsulate the tail ends of the boom from 1965-1980, it includes nearly 13% of the Japanese population (National Institute of Population and Social Security Research 2002). While there have been many studies on the Japanese market focusing on the baby boomers, few have addressed the demographic trends and behaviours among Japanese residential home buyers in the echo boomer age group.

In terms of housing in Japan, 45% of houses are currently made from wood products (JLJ 2007). Japan is North America’s number one export market for wood products, and is critical for both Canadian and United States wood products manufacturers exporting from the Pacific Rim. In 2004, the Japan export market for wood and wood products accounted for over $2.1 billion dollars in sales for the United States and $1.7 billion
dollars for Canada (Industry Canada 2005) (Center for International Trade in Forest Products 2006).

In order to better understand what North American manufacturers can do to retain their current market position in Japan, the segment of the echo boomer Japanese population has recently been targeted and there is a need to better understand their preferences for future housing. This research collects preliminary information from these Japanese echo boomer consumers for use in helping to predict the changing housing trends in Japan.
2. Background and Objectives

Before presenting information on demographic housing patterns in Japan, a brief background on Japan’s economic and population profiles is provided. The housing situation is discussed next, followed by information on Japan’s house building industry.

This study examines the echo consumer cohort to better understand the perceptions of echo boomers and opportunities for imported building materials and products given the current competition. The three main research objectives aim to: categorize those areas in a house that this cohort is willing to pay premiums for more “custom” products; determine the perceptions of this cohort towards imported building products and; identify the importance of environmental and other sustainability issues related to wood products to this cohort.

2.1. Background on Japan

2.1.1. The Japanese Economy

Once envied around the world for a booming industrial sector, an intense work ethic, and guaranteed employment for life, the Japanese economy has yet to recover its status following the staggering 1990s recession which crippled the country as a result of the Asian market financial crisis (Market Research Centre of Canada, Department of Foreign Affairs and International Trade 2003). Since 1991, the economy has spent 11 years sliding in and out of recession and has only recently been showing meaningful signs of recovering to its former power (Jeeves 2007). Despite its traumas, Japan still continues to be a major economic power as the third largest economy in the world after the United States and China. It also has some of the highest average income levels and standards of living in the world (Urban Land Institute 2005).

The country’s successful economy is primarily based on exporting high quality technology and consumer goods around the world, as well as importing raw materials,
primarily from North America, and to some extent, China and other Asian countries. The domestic manufacturing and service industry is important for the economy and is heavily dependent on its imports of raw materials and fuels to keep it operating. The current trend for Japanese companies is to send manufacturing work off shore to other Asian countries as a means of optimizing labour and raw material costs (Economist Intelligence Unit 2007).

After struggling through the 1990s and into early 2000, Japan’s GDP is back in the controlled growth range level of 2 to 3% as shown in Figure 2.1. Nonetheless, the healthy economic growth in Japan pales in comparison to the current manufacturing expansion in China and India (Urban Land Institute 2005).

Figure 2.1 has been removed due to copyright restrictions.
The information removed is a graph which represents the key economic indicators (Prime Rate, GDP and CPI) of Japan from 2002-2005. The figure can be found in the following source: Taylor R. and Associates. 2006. B.C. Wood Products: Trend Analysis in Export Markets 3rd Quarter 2005 Report pp 87

Figure 2.1: Key Economic Indicators of Japan

Japan's huge government debt, which totals 170% of GDP, and the continued aging of the population are two major long-run problems for the economy. Some investors fear that a rise in taxes could endanger the current economic recovery and cause further economic problems (CIA 2006). In terms of the personal finances of average Japanese consumers, many citizens are carrying significant debts from the recessions and savings rates have fallen to 6.9% below that of France and Germany (Cohen and Kozak 2001).
As Japan continues to emerge from its economic recessions, the government has recently announced that they will implement a consumption tax increase in late 2007 (Taylor and Associates 2006). When a similar tax rate hike tax was implemented in 1997, it initiated a prolonged economic recession and asset deflation in Japan. During this period, residential investment dwindled and only recently recovered in 2004 and 2005 (Shinohara 2005). A number of industry players warn that this proposed consumption tax hike could cause significant problems in the residential housing sector once again (Shinohara 2005; Center for International Trade in Forest Products 2006). The proposed hike conflicts with previous government initiatives concerning long-term planning for housing which attempted to change the current housing environment to deliver assistance to the aging population (Shinohara 2005).

2.1.2. Geography and Urbanization

During the twentieth century, Japan was transformed from a poor, primarily rural country, into one of the world’s largest industrial powers and most highly urbanized countries. In the early 1970’s, urbanization was rampant in Japan as the need for a large labour force was required to support the booming industrial sector, mostly surrounding the cities of Tokyo, Osaka, and Yokohama (Economist Intelligence Unit 2007). Japan’s port cities were mostly favoured due to the heavy port traffic, and many cities sprawled with up to a 100 km radius. Due to Japan’s strong land ownership rights and weak land development control regulations, there was very little urban planning for the cities in Japan during this economic boom (Sorensen 2004).

Presently, the Japanese population has completed its urbanization movement and the majority of its citizens now reside in urban or suburban areas, with many rural areas much less inhabited (Foreign Press Center Japan 2006). The main movement concerns the younger generations, moving either for university, or first time jobs which are mostly found in the major urban centres.
The key dilemma facing most Japanese cities is the continuing need to accommodate enormous numbers of people on small areas of land close to city centres. The extent of Japanese urbanization is evident in the vast urban industrial belt along the pacific coastline of the main island of Honshu, where two-thirds of the population lives on only 23% of the country’s land (Sorensen 2004). Additionally, it has been identified that many Japanese consumers continue to be extremely wary of buying land too far away from central cities as a result of the market collapse in the early 1990s (Fackler 2005). When property prices drastically dropped at that time, many homeowners found themselves with loans far larger than the value of their suburban and rural real estate. As a result, many consumers were stuck with houses that they bought for very inflated prices, but almost two hours away from the city centre (Hirayama 2005). These consumers were also left with houses that were generally badly built and were trapped in debt since the residential properties had virtually no resale value. Now that Tokyo has become more affordable with lower land prices, fewer consumers in Tokyo and Osaka are considering purchasing land in the surrounding suburbs (Hirayama 2005).

2.2. The Housing Sector in Japan

2.2.1. Japanese Housing

Japan’s overall housing sector is diverse and, in the urban centres, is one of the most sophisticated and intricate industrialized housing sectors in the world (Market Research Centre of Canada, Department of Foreign Affairs and International Trade 2003). The 1990s financial crisis contributed to a dramatic reduction in annual housing starts and a much more price sensitive consumer (Cohen 2005). Housing and land costs dropped approximately 40% in 10 years which, although devastating for many consumers, sparked a large upsurge in the construction of new homes (Cohen and Gaston 2005). Housing starts in Japan have been steadily increasing for the past three years. The continued growth makes it one of the largest housing and building products markets, second only to the United States. (Taylor and Associates 2006)
While wood framed housing still maintains a strong reputation in Japan for detached dwellings due to its traditional usage, overall demand for housing and resulting housing starts are expected to decline over the long term due to the Japanese demographic trends, including negative population growth and a rapidly aging population (to be discussed later in this section) (Japan Statistics Bureau 2007). Although housing starts are not rapidly declining as yet, the wood and building materials market is facing oversupply, causing a price slump for many products and stimulating competition from other lower cost suppliers such as China and Vietnam (JLJ 2007).

2.2.2. Housing Types

Currently, wood framed housing accounts for 45% of all housing starts in Japan (JLJ 2007). This proportion of housing is comprised primarily of the Japanese traditional post and beam style construction, with privately owned homes influencing the wood and building materials demand the most. In the last 10 years, however, the North American introduced 2 by 4 system has made significant inroads. Housing growth has helped the 2 by 4 platform housing system gain record high housing starts in 2006, up 9.3% from 2005 and extending its 17-month consecutive growth record (JLJ 2007). However, the relative size of the 2 by 4 industry (which almost reached 100,000 units in 2005) still pales in comparison to that of the traditional post and beam system as shown in Figure 2.2. (Hayashi 2006)
Figure 2.2 has been removed due to copyright restrictions. The information removed is a graph which represents the composition of Japanese housing starts (2 x4, Pre-Fabricated and Post and Beam) in Japan from 2002-2005. The figure can be found in the following source: Taylor R. and Associates. 2006. B.C. Wood Products: Trend Analysis in Export Markets 3rd Quarter 2005 Report pp 89

![Figure 2.2: Composition of Japanese Housing Starts](source: Wood Markets (Taylor and Associates 2006))

### 2.2.3. The Housing Market

Japanese housing construction starts reached 1.29 million for 2006, continuing a period of consecutive growth for four years in a row (JLJ 2007). A break down of housing starts for 2006 is shown in Table 2.1.

<table>
<thead>
<tr>
<th>Structure</th>
<th>Owner/Occupant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wooden</td>
<td>Owner Occupied</td>
</tr>
<tr>
<td>Non-Wooden</td>
<td>559,201</td>
</tr>
</tbody>
</table>

* COH= Company owned houses to be rented to their employees, etc.

The resale market of homes in Japan is limited compared to North America, where some homes may go through a large number of homeowners before final demolition (Lampert and Ikehata 2000). The large volume of demolitions in Japan is primarily due to the high
land values in major cities and the large numbers of poorly-constructed dwellings initially built to meet the urgent housing shortages following the rapid urbanization of Japan’s city centres, and having short 25-30 year life cycles (Forrest, Kennett and Izuhara 2003). Resale houses in Japan represent less than 10% of all home purchases, while in the United States, it comprises double the amount of new housing starts or 70% of all house purchases (U.S. Census Bureau 2006).

Durability and safety of homes have long been important in Japan because of susceptibility to earthquakes, and because consumers in the past have been disappointed with defective housing as a result of poor quality control in construction methods. Recent housing trends include barrier free design in response to Japan’s aging society, as well as the emergence of the preference of North American home designs. Smaller niches for developers have also been successful for houses marketed as ‘healthy homes’ and energy efficient. (Cohen and Kozak 2001)

2.2.4. British Columbian Wood Products for Housing in Japan

Currently, Japan is Canada’s most important off shore wood products market in terms of value and volume of exports, and second to the United States in terms of total exports (Center for International Trade in Forest Products 2006). British Columbia (B.C.) exports the majority of Canada’s wood products to Japan, with most products being softwood lumber, as well as raw softwood logs, cabinets, flooring, and structural members. Japanese importers continually demand spruce, pine, and fir (SPF) species of wood from British Columbia, and also import a significant amount of secondary wood products (Taylor and Associates 2006).

After the Japanese recession, the B.C. ‘coastal’ area experienced significant market erosion and subsequent new competitors caused government and industry stakeholders to combine resources to regain their market presence in 1997. The result was significant funding put behind promotional and market outreach programs for the marketing of coastal post and beam hemlock products. Programs, such as ‘BC Market Outreach’ and
‘Canada Tsuga’, focused on targeting Japanese producers through differentiating British Columbian wood products from American competitors through trade and business-to-business marketing (Cohen and Gaston 2005).

Despite these major marketing endeavours, the B.C. coastal products market sector in Japan continues to decline in sales (Kennedy 2006). At present, B.C. continues to focus on promotional and marketing initiatives to Japan. However, the majority of new programs focus on growing markets, such as China and Russia, and fending off the resultant competition (Market Research Centre of Canada, Department of Foreign Affairs and International Trade 2003).

Currently, the B.C. ‘interior’ area is focusing its marketing efforts on Spruce-Pine-Fir (SPF) product exports for 2 by 4 construction in Japan. SPF products are promoted by similar market outreach groups, such as COFI (Council of Forest Industries) and ‘Canada Wood’. These organizations attempt to promote B.C. interior products and the benefits of 2 by 4 construction methods for residential housing in Japan to builders and end-users. (Industry Canada 2005)

The shifting of demographics has significant effects on housing trends in Japan. The next section examines how demographics impacts housing in Japan today and into the future.

### 2.3. Demographics and the Housing Industry

#### 2.3.1. Age Structure

The age structure of Japan’s population has changed dramatically in recent decades (Cohen et al. 2003). Japan leads all G8\(^1\) countries with the most rapidly aging population. Major factors affecting this trend are Japan’s strict immigration policies, low birth rates, 

\(^1\) The G-8 consists of the world’s seven largest industrial market economies: the United States, Japan, Germany, France, the United Kingdom, Italy, Russia, and Canada.
and long life expectancies. The population is beginning to decline and the two largest segments remain the baby boomers and the echo boomer cohorts (National Institute of Population and Social Security Research 2002). The Japanese Ministry of Health, Labour and Welfare statistics bureau report describes these cohorts as follows:

- First baby boom period (1948-49), currently 56-58 years old
- Second baby boom period (1971-1974), currently 31 to 34 years

As shown below in the population pyramids of Figures 2.3 and 2.4, the Japanese demographic distribution is very distinctive and is projected to be top-heavy in only fifteen years.

![Population Pyramid](image)

**Figure 2.3: Japanese Population Distribution 2005**
Source: UN Population Division
The size of Japan’s aging population is growing at a rate greater than other advanced Western European countries or the United States. Although the population of the elderly in Japan accounted for only 7.1% of the total population in 1970, 24 years later in 1994, it had almost doubled to 14.1%. The dependency ratio\(^2\) has climbed from 8.5 in 1970 to 3.2 in 2005, and is projected to reach 2.3 by 2015. (National Institute of Population and Social Security Research 2002)

Longer life spans are changing generational interactions, with fewer offspring to support the growing aging population. This situation is placing more pressure on the government to take responsibility and alter its policies to aid the strain on the younger generations.

The baby boom in Japan after the Second World War was more intense and shorter than either in Europe or North America. The population grew by over 8% in just four years from 1947-1950, and by 1950, over one-third of the population was less than 15 years old (Cohen 2000). This dramatic bulge in births had, and continues to have, a significant impact on all aspects of life in Japan.

\(^2\) Details the number workers (aged 15 – 64) supporting 65+ year old members of the population.
Many of Japan's first generation of baby boomers, born between 1947 and 1949, will retire in 2007 (Japan Statistics Bureau 2007). In the coming years, the Japanese government will have to focus on finding ways to cope with increasing density in urban areas and supporting an aging population with increasingly limited resources (Japan Ministry of Internal Affairs and Communication 2007).

Much like the baby boomers, members of the echo boom cohort were born in a very short period between 1971-1974. However, the population bulge can be extended to encapsulate the front and back end of the boom which includes those adults born between 1965-1980 as shown in Figure 2.3.

2.3.2. Population Density

Japan is ranked considerably highly on a world scale in terms of population density (Japan Statistics Bureau 2007). Consequently, Japan has extremely high land prices, as it precariously balances a large population with a relatively small land mass for a country. With over 128 million people currently living in Japan, many families have a difficult time affording housing within commuting distance of urban centres and, subsequently, the sprawl of major centres such as Tokyo and Osaka is immense (Japan Ministry of Internal Affairs and Communication 2007).

Population densities are especially high in the urban corridor between Tokyo and Kobe, where 45% of the country’s population is packed into only 17% of its land area (Japan Statistics Bureau 2007). The Japanese government has invested significant funding and research to create efficient means of transportation and infrastructure in these areas. However, the carrying capacity of Japanese urban centres has been pushed to the limit in the past 10 years (Sorensen 2004).
2.3.3. Relocation

Historically, most Japanese people worked and lived in rural farmlands across the country. Now, most of the population lives in urban centres and about seven million relocate each year. Rapid urbanization occurred mostly during the 1960's. However, many young people are still flooding cities, either for university or to access the urban job market (Sorensen 2004).

2.3.4. Generational Living Patterns

The generational living pattern of the typical Japanese family has seen some significant changes in the last century. However, at this point the household structure is very homogenous throughout Japan compared to other developed countries. In the 1950's, the older, traditional ‘extended’ Japanese family merged with the ‘nuclear’ family to create ‘expanded’ family housing (Cohen 2000). Even after marriage, young couples often live in the same house as one set of their parents; however, there are generally separate facilities for the two adult generations for cooking (kitchens) and hygiene (bathrooms) (Cohen 2000). Additionally, a significant proportion of the senior population continues to live with their children well past retirement age rather than being put into homes for the elderly.

The Japanese government and press have been concerned with the phenomenon of almost 13 million young adults still living with their parents well into adulthood. This group, termed ‘parasitic singles’ by the media, includes nearly 60% of single Japanese men and 80% of single women between the ages of 20 and 34 (Tran 2006). This new trend is being attributed to many couples waiting longer to get married, as well as the many young adults who are balking at the traditional ‘salary man’ jobs expected of them straight out of high school or university (Brooke 2001).
2.3.5. Demographics and Home Buyer Characteristics

Over the past two decades, there has been a significant reduction in the ownership rate among Japanese households in the younger age groups, specifically those under the age of 45. In a Canadian Mortgage and Housing Corporation (CMHC) survey, it was noted that the average age of new home purchasers in Japan was 48 years for owner-built homes and 43 years for developer-built homes in 2000 (Lampert and Ikehata 2000). The low ownership rates among younger Japanese is primarily due to a wariness of consumers regarding real estate investment reliability, as well as a disparity between low median wages and high housing costs (Lampert and Ikehata 2000).

First time home buyers are finding it difficult to purchase homes within their means, and prefer to rent or remain living in their parents homes until forced to move (Brooke 2001). Since there is a relatively small resale housing market, there is little to no opportunity for young home buyers to purchase more inexpensive resale houses which is typical of many North American first time home buyers. Recently, there have been a large number of house building companies offering houses at bargain prices which, when combined with low mortgage rates (2.6 %), are allowing some young couples to purchase residences at the same cost as renting (Cohen and Gaston 2005). Specifically, for the echo boomer cohort, the higher housing prices and lower wages seem to be dramatically restricting the affordability of housing among the first-time home buyers.

2.4. Residential Housing and the Environment

Japanese consumers have many concerns when deciding what type of house to purchase, as well as what types of building products to use in residential construction. There is a growing concern for the environmental impact of housing, often driven by concerns for personal health, as well as the bigger picture concerning the effects of climate change and other environmental issues (Barrett et al 2002).
Anxiety for personal health among the Japanese public relates to how the health of occupants is impacted due to living in a house. These concerns are specifically focused on indoor air quality, formaldehyde emissions, and other pollutants that directly impact the health of the inhabitants (Barrett et al 2002).

Another environmental impact issue relates to the impact on the world's environment of the design, material selection, construction, and use of houses (Cohen 2000). To date, there has been little in the way of research studying the attitudes of Japanese consumers towards these broader issues.

2.5. Environmental Concerns and their Impacts on Trade

The growing concern among the developed world regarding the environment has both directly and indirectly spilled over on to trade, particularly international trade (Grossman 2000). This is primarily due to the fact that many environmental issues are not constrained by traditional country borders, and instead affect huge areas of the world not governed by a single institution. This reality will affect trade partnerships since government policy, and potential trade restrictions, will undoubtedly create difficulty for industry relationships around the world (Grossman 2000).

Growing environmental concerns have increased awareness of the forestry sector among the global public and policy-makers (Jackson 2002). Currently, the general perception is that forests have significant positive environmental benefits, and many forestry extraction activities are perceived as potentially or actually damaging to the environment (Ribe 2006). One of the fundamental issues will be whether consumers are concerned enough to make the purchase decision in favour of the environment by making more sustainable purchases.
2.6. Research Statement and Objectives

This study will examine the echo boom consumer cohort to better understand their perceptions and identify opportunities for imported building materials and products. The key objective is to uncover the best opportunities for imported wood building materials from North America.

This study will collect data on the echo boomer cohort in Japan regarding their preferences for housing attributes and products. Results will be based on a survey conducted in Japan on an echo boomer sample population, secondary sources, and exploratory interviews with house builders in Japan. The sample cohort focuses on the baby boom echo (born between 1965-1980) who are the children of the original baby boomers (born 1947-1966) (Japan Statistics Bureau 2007). The ages considered in this study included those born between the years of 1965-1980.

The specific objectives of this exploratory research are:

- to categorize those areas in a house that the echo boomer cohort is willing to pay premiums for “custom” wood products which could be supplied by North America and specifically British Columbia;

- to determine the perceptions of the echo boomer cohort towards imported building products produced from competing regions of the world; and

- to identify the importance of environmental impact and other sustainability issues of wood products to echo boomer consumers.

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3 In Japan, there is little differentiation among consumers between Canadian and U.S. wood products or between products from different provinces (Cohen and Gaston 2005)
2.7. Justification for Research

2.7.1. Strategic Marketing to the Japanese Consumer

This research ties together background information on the changing demographics of consumers in Japan, as well as the changing conditions of the Japanese home building industry. This information can be used to aid the marketing strategies of forest products manufacturers exporting to Japan. The potentially largest contribution is on how to specifically target the echo boomer cohort which holds increasing purchasing power in terms of housing consumers in Japan at this point in time.

Echo boomers are a reflection of the sweeping changes in Japanese life over the past 20 years. They are the first to grow up with significant technological aspects in their life, but at the same time, they grew up amidst repeated recessions and many are wary of making large purchases such as mortgages and homes (Brooke 2001).

By identifying the echo boomer consumers’ unique purchasing preferences, and the gaps in knowledge that this generation may have, the potential to develop better marketing strategies targeted at this group increases (Japan External Trade Organization 2006).

2.7.2. Environmental Concerns of Japanese Consumers

As well as determining the perceptions of echo boomers towards imported wood building products and their preferences for customization, it is important to determine the knowledge level and inclination of this market segment in Japan towards environmental issues. In industrialized countries, there has been evidence that middle and upper class consumers are changing their purchasing decisions based on environmental issues and the resulting marketing initiatives (Follows 2000) (Kollmuss and Agyeman 2002) (Prakash 2002).
By first asking consumers about their background knowledge on environmental and certification issues, we will be able to determine the extent of their knowledge on this topic in the marketplace. If consumers are uninformed about how their purchasing choices can directly affect the environment and forest practices, then the information gap is one that needs to be addressed in order to affectively target this demographic. By analyzing this issue, manufacturers will be able to better determine if certification will differentiate their products in the marketplace, allowing them to obtain a premium or earn a greater market share. Ultimately, the success of environmental marketing programs depends on the communication strategy of the producer to the consumer either through product labelling or a branding approach (Kaiser, Wolfing and Fuhrer 1999).

If this market exists among echo boomers in Japan, it is a unique market segment that North American manufacturers should look to take advantage of in future marketing programs. One study of Japanese consumers attitudes towards specific housing attributes identified that, on the whole, Japanese consumers strongly agreed that preserving the environment is of the utmost importance (Cohen and Kozak 2001). In order to determine whether the echo boomer cohort are making their decisions based on loosely held ideals or on accurate environmental information, it is of utmost importance to ascertain the knowledge base of this cohort regarding environmental issues.
2.8. References


Market Research Centre of Canada Department of Foreign Affairs and International Trade. 2003. The Building Products Market in Japan. Ottawa, Canada


3. Methods

To meet the objectives of this research, a written consumer survey was developed to collect primary data for the study from Japanese consumers. The data was collected during November and December 2006 in Tokyo and Osaka. The questionnaire was developed and reviewed by both English and Japanese speaking researchers to ensure clarity, accuracy, and correct translation.

3.1. Survey Population

The population for the consumer survey consisted of all potential or current home buyers in Japan who were between 21-46 years of age and lived in Tokyo or Osaka. The survey population was restricted to this age group since it represents the cohort termed the ‘echo boomers’, the highest proportion of first time home buyers in Japan (National Institute of Population and Social Security Research 2002). This cohort encompasses specifically those born between 1971-1975; however, in order to properly represent the population bulge identifiable in Figure 2.3, those aged 26-41 in 2006 (born 1965-1980) were also surveyed.

The sample consisted of 100 respondents from Tokyo and its environs and 100 respondents from Osaka and its environs. Tokyo and Osaka represent the largest metropolitan areas in Japan, representing almost 40% of Japan’s population as shown in Table 3.1.
Table 3.1: Populations of Tokyo and Osaka
Areas within 50 kilometre radius from each municipal office (as of October 1, 2000)
Source: Statistical Bureau of Japan

<table>
<thead>
<tr>
<th>Areas</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>126,926</td>
</tr>
<tr>
<td>Tokyo Metropolitan area</td>
<td>30,724</td>
</tr>
<tr>
<td>Osaka Metropolitan area</td>
<td>16,567</td>
</tr>
<tr>
<td>Total of two major metropolitan areas</td>
<td>47,291</td>
</tr>
<tr>
<td>Percentage of total population</td>
<td>37.3%</td>
</tr>
</tbody>
</table>

Population density measures 4,028 persons per square kilometre in the Tokyo area and 2,209 in the Osaka area, the highest of any cities in Japan and both significantly higher than the national average level of 340 per square kilometre (Japan Statistics Bureau 2007).

3.2. Survey Questionnaire

The survey was developed in English and translated into Japanese by Cinq Inc. and then checked for accuracy by additional translators. The questions in the questionnaire covered the following categories:

- Current Housing Information of Consumers
- Customized Housing Attributes
  - Areas in a house that echo boomers are willing to pay premiums for more "custom" products.
- Imported Wood Products Preferences
  - Perceptions of echo boomers towards imported building products produced from competing regions of the world
- The Environment and Sustainability
- Recent/Future Home Purchasing
- Background Information of Respondents
Different styles of questions were used throughout this survey to collect varying types of information. The questionnaire consisted of 36 questions. The question and scale types were used to meet the objectives of developing an idea of the preferences of the echo boomer consumer regarding wood products and environmental trends in residential housing.

Five questions were open-ended questions. These questions were used for a more exploratory form of research in order not to limit responses. Some of the initial questions for background information of the respondents were dichotomous questions that asked for a Yes/No or True/False response. Other forms of questions and scales used in the survey included rank order, continuous interval scale and Likert scale questions.

A series of seven-point scales were used in a variety of forms to assess the respondents' evaluation of different concepts. The end points for these questions ranged from not important to very important, very useful to not at all useful, important to customize to not important to customize, never use wood to always use wood and finally, very knowledgeable to not at all knowledgeable.

The questionnaires were reviewed and approved by the Behavioural Research Ethics Board of The University of British Columbia in November 2006. A full copy of the English version of the survey is found in the Appendix A.

3.3. Survey Implementation

A Japanese marketing research firm personally administered the written surveys to ensure that respondents' answers were not influenced by the research sponsors and that all questions were properly understood. The research firm used a panel of respondents to ensure that the geographical, age, and gender mix met the study requirements, as well as
to ensure that the results were an accurate reflection of the echo boom population in large urban centres in Japan such as Tokyo and Osaka.

Respondents were contacted by Cinq Inc. and asked to either complete the survey over the phone, or attend a survey interview held at Cinq Inc. In each case, the interviewer followed a written questionnaire, ensuring that the same questions were asked of each respondent. In December 2006, all surveys were completed and results were translated into English using the data collected from each of the 200 respondents. The data was then entered into spreadsheets for further data analysis.

To ensure a better understanding of this study, a written letter was produced to explain the basis for the survey to the respondents which can be found in Appendix B. This letter was attached to the front of the questionnaire. Like a cover letter, this communication introduced the purpose of the study, its organizers, the importance of the study, the rules of voluntary participation, a promise of confidentiality, and ways to contact the investigators.

3.4. Data Process

Data was entered into Microsoft Excel spreadsheets and descriptive and inferential statistical analyses were performed using this software.

Primarily, descriptive statistics were used for analysis for this survey. Graphs and tables were used to summarize the data, as well to visually illustrate trends in the results. In order to distinguish if there were any differences between answers from Tokyo and Osaka prefectures, a series of statistical tests were performed on the differences between the means on key questions (alpha = 0.05). The key questions included those relating to customization, environmental preferences, and recent/future home purchasing preferences. However in each case, the results revealed no noteworthy differences, and thus, all results reported make no distinction between the Tokyo and Osaka respondents.
Some of the rank order questions were examined using evaluation points. For these questions, respondents were asked to rank categories (with 1 being the highest rank), then each ranked category was assigned an arbitrary score. For example, a rank order question from 1 to 3 would assign points in the following manner: categories ranked 1st, 2nd, and 3rd would be assigned weighted point values of 3, 2, and 1, respectively. The resulting sums were used to give a sense of the data, and not to draw conclusions. While somewhat arbitrary for statistical analysis, it gives ranked items a single “evaluation point” for simple comparisons.

Inferential statistics were used for the seven point scale questions by testing the means against the neutral value of four. In all cases, statistical testing was performed at an alpha level of 0.05.
3.5. References


4. Generational Shifts in Housing Preferences of the Japanese Echo Boomer Cohort

4.1. Introduction

Currently, there are many geographical sources of wood products that are used in the residential housing industry of Japan. The first is from domestic production, using both domestic and imported logs and lumber, and the second is from international suppliers, such as Canada, the United States, Germany, Finland, and Russia. Wood manufacturers from North America must compete heavily with these other suppliers and continually seek to gain a substantial market share. Japan is both the United States' and Canada's prime off shore export market for wood products. In 2004, the Japan export market for wood and wood products exports accounted for over $2.1 billion dollars in sales from the United States and $1.7 billion dollars from Canada (Industry Canada 2005; Center for International Trade in Forest Products 2006).

In order to better understand what North American manufacturers can do to hold on to their current market share, a key segment of the Japanese population has been targeted to better recognize their needs and wants for future housing. This population segment, termed the echo boomers, make up almost 13% of the Japanese population and are critical to observe in order to predict the future trends for housing trends in urban Japan (Cohen and Kozak 2001). This echo boomer cohort is just entering adulthood, and includes those born from 1971-1974, although it can be expanded, for research purposes, to encapsulate the tail ends of the boom from 1965-1980 (National Institute of Population and Social Security Research 2002). While there have many studies on the Japanese market for wood products, few have addressed the demographic trends among Japanese wood products customers in this age group. As initial research in this field, this project collects preliminary information from potential home buyers in Japan so it can be used in later research and market analyses to predict changing consumer trends in housing in Japan.

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4 A version of this chapter will be submitted for publication.
4.2. Background

4.2.1. Japanese Demographics and the Echo Boomers

Demographic trends and population density drastically effect many aspects of a country’s economy and social structure. In Japan, the trend is one of population decline, with large cohorts of citizens in two main age segments termed the ‘baby boomer’ and the ‘echo boomer’ generations (National Institute of Population and Social Security Research 2002). As shown in the population pyramid (Figure 4.1), the Japanese demographic distribution is very distinctive and is projected to be top-heavy in only fifteen years.

![Japanese Population Distribution](image)

**Figure 4.1: Japanese Population Distribution**
*Source: UN Population Division, 2004*

The declining population in Japan is primarily a result of low birth rates, as well as strict immigration policies and long life expectancies. With lifetime fertility now below 1.3 children per female (the replacement rate being about 2.1), Japan is behind only Russia in terms of projected decreases in population (Anonymous 2006).
The echo boomer cohort was aged 26 - 41 in 2006 and is the next big wave of dominant consumers for home buying in Japan. Many of these consumers are first time home buyers and are looking to build and live in their homes with newly formed families. This major step by a large cohort is an important consideration for North American wood manufacturers as Japan is the number one off shore market for wood products which are the primary construction material for single residence homes in Japan (Center for International Trade in Forest Products 2006).

4.2.2. First Time Home Buying for the Echo Boomer Generation

With these emerging demographic trends in Japan, the two segments that have the greatest influence on current and future housing demand in Japan are the baby boomers and the echo boomer cohort. Echo boomers are currently entering the residential housing market and are one of the driving forces behind built-for-sale wood housing in Japan and the rise of regional builders often referred to as Power Builders around the Tokyo area (Sasatani et al. 2005; JLJ 2005). Power Builders are known in Japan for building large numbers of low cost ‘built-for-sale’ homes which are nearly identical to each other in style and floor plan. These in-fill developments are currently being built throughout urban Tokyo and resemble western styled ‘sub divisions’ and at times reach 300 homes in one area (JLJ 2005). This is a drastically different model from the 1980’s, when houses were targeted towards the baby boomers and most houses were rebuilt on sites where older houses had been demolished (Lampert and Ikehata 2000). Each single new house was designed and built for one owner on their already owned plot of land to their exact customized specifications. The home buying consumer shift from baby boomers to echo boomers coincides with a growing trend of decreasing customization (Iwashita 2001). This trend is important to investigate as it may be transferring buying decisions, in terms of quality and wood use, from the Japanese consumer to the home-builder (Iwashita 2001).

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5 A cohort is a group of humans from a given population — defined by experiencing an event (typically birth) in a particular time span. In this case, it is Japanese citizens aged 26-41 in 2006 born to the baby boomer cohort who came the after-war population boom.
The Japanese population census of 2005 shows that Japan had 48.22 million households in 2005. Of that total, 58.9% were nuclear-family households, and 27.6% were one-person households (Foreign Press Center Japan 2006). The average number of children per household in Japan is much lower than other developed country averages, and is due to the increase in single child families and an increase in the average age of marriage in recent years (Anonymous 2006). This difference may affect home building as many families will need less space for smaller sized families. However, it is still not unusual for three generations of a family to live together in Japan, so space will still be required for echo boomer parents, which would be the other Japanese population mass, the baby boomers (Cohen 2000).

4.2.3. Customized Housing Attributes and Imported Wood Products Preferences

There continues to be significant gaps in knowledge of echo boomers regarding their perceptions of value and product attributes when purchasing a new house (Lampert and Ikehata 2000). In the past, the Japanese market has been characterized as one that scrutinized quality, and consumers were willing to pay a higher price for superior quality products (Barlow, Childerhouse, and Ozaki 2003). With the change to ‘built-for-sale’ housing, it has been found that the quality level of housing is significantly lower and structural components do not have to be aesthetically pleasing as well as structurally sufficient (Cohen and Gaston 2005). Thus, builders are using lower quality products without degrading performance in order to save costs (Iwashita 2001). This trend may be a new development from the emerging consumers who are more wary of spending large amounts of money on housing, and instead favour lower cost options.

4.3. Research Statement and Objectives

This study will examine the echo boom consumer cohort to better understand their perceptions of customized and imported wood products used for residential housing.
The specific objectives of this exploratory research are: to categorize those areas in a house that the echo boomer cohort is willing to pay premiums for “custom” wood products which could be supplied by North America; and to determine the perceptions of the echo boomer cohort towards imported building products manufactured in competing regions of the world.

4.4. Methods

This study was conducted using a written survey designed in September and October 2006, with data being collected in Japan during November and December 2006. The questionnaire was developed and reviewed by both English and Japanese speaking researchers to ensure clarity, accuracy, and correct translation.

The population of interest consisted of all potential or current home buyers in Japan who were between 21 – 46 years of age and lived in the Tokyo or Osaka regions. The survey population was restricted to this age group since it represents the cohort termed the ‘echo boomers’, the highest proportion of first time home buyers (National Institute of Population and Social Security Research 2002). There are no exact definitions in Japanese demographics literature of the age range of the echo boomer cohort; however, the Japanese Ministry of Health, Labour and Welfare Statistics Bureau report states that this cohort should encompass those born between 1971-1975 (National Institute of Population and Social Security Research 2002). The other instances state the cohort as being those children born to the baby boomers (Cohen et al. 2003, Forrest et al. 2003). Thus, for this survey in order to properly represent the population bulge identifiable in Figure 4.1, those aged 26-41 (born 1965-1980) were also surveyed.

The survey population consisted of 100 respondents from Tokyo and its environs and an additional 100 respondents from Osaka and its environs. Tokyo and Osaka represent the largest metropolitan areas in Japan, representing almost 40% of the population (Table 4.1). Population density measures 4,028 persons per square kilometre in the Tokyo area, and 2,209 in the Osaka area, the highest of any cities in Japan and both significantly
higher than the national average level of 340 per square kilometre (Japan Statistics Bureau 2007).

Table 4.1: Population of Two Largest Major Metropolitan Areas in Japan  
(As of October 1, 2000; areas within 50 kilometre radius from each municipal office)  
Source: Statistical Bureau of Japan

<table>
<thead>
<tr>
<th>Areas</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>126,926</td>
</tr>
<tr>
<td>Tokyo metropolitan area</td>
<td>30,724</td>
</tr>
<tr>
<td>Osaka metropolitan area</td>
<td>16,567</td>
</tr>
<tr>
<td>Total of two major metropolitan areas</td>
<td>47,291</td>
</tr>
<tr>
<td>Percentage of total population</td>
<td>37.3%</td>
</tr>
</tbody>
</table>

A Japanese marketing research firm, listed as one of the B.C. governments’ approved Japanese research firms, personally administered the written surveys to ensure that respondents’ answers were not influenced by the research sponsors and that all questions were properly understood. The research firm used a panel of respondents to ensure that the geographical, age, and gender mix met the study constraints, as well as to ensure the results were an accurate reflection of the echo boom population in large urban centres in Japan such as Tokyo and Osaka. In each case, the interviewer followed a written questionnaire ensuring that the same questions were asked of each respondent. In December 2006, all surveys were completed and translated, and data was collected from 200 consumers. The data was then entered into Microsoft Excel spreadsheets for further analysis.

This survey was conducted using 200 respondents from our sample. Primarily, descriptive statistics were use for analysis for this survey. Graphs and tables were used to summarize the data, as well as to visually illustrate data trends. Inferential statistical methods were also used to test the means (alpha = 0.05) against the neutral value of four on a series of seven point scales.
Some of the rank order questions were examined using evaluation points. For these questions, respondents were asked to rank categories (with 1 being the highest rank), then each ranked category was assigned an arbitrary score. For example, a rank order question from 1 to 3 would assign points in the following manner: categories ranked 1st, 2nd, and 3rd would be assigned weighted point values of 3, 2, and 1, respectively and then summed. While somewhat arbitrary for statistical analyses, it does allow for simple comparisons between ranked comparisons.

4.5. Results

4.5.1. Demographic Profile of Survey Respondents

The ages of the 200 echo boomers surveyed in Tokyo and Osaka ranged from 26-41 years, with the average age being 34. Two-thirds of respondents were married, most with children and 28% reported living with their parents. Most respondents (45%) had finished college, and 3% reported finishing graduate school.

4.5.2. Socio-economic Class and Income

As shown in Table 4.2, the average annual income for the survey respondents is between ¥6 million – ¥7,999,999, which at the time of the survey was equivalent to between $US 60,000 and 80,000 per year. It was determined that the survey question had income brackets that didn’t accurately encapsulate a broad spectrum of respondents’ incomes and therefore a large amount of respondents reported less than average incomes. In retrospect, this question should have had income brackets that were on a much lower scale.
Table 4.2: Annual Income Groups of Respondents

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than ¥ 6 million</td>
<td>43%</td>
</tr>
<tr>
<td>¥6 million – ¥ 7,999,999</td>
<td>20%</td>
</tr>
<tr>
<td>¥8 million – ¥ 9,999,999</td>
<td>18%</td>
</tr>
<tr>
<td>¥10 million – ¥11,999,999</td>
<td>12%</td>
</tr>
<tr>
<td>¥12 million - ¥13,999,999</td>
<td>6%</td>
</tr>
<tr>
<td>¥14 million - ¥15,999,999</td>
<td>2%</td>
</tr>
<tr>
<td>¥16,000,000 and over</td>
<td>2%</td>
</tr>
</tbody>
</table>

4.5.3. Composition of Japanese Home Buyers/Owners

The respondents from the Tokyo region were from the following Prefectures: Kanagawa, Saitama, and Chiba. Respondents from the Osaka region were from: Kyoto, Nara, Hyogo, and Wakayama. Of these respondents, over one-quarter still lived with their parents and are likely purchasers of their own houses over the next ten years and the majority were couples who have children. In terms of home ownership in Japan, 82% of respondents did not currently own their home. Figure 4.2 summarizes the proportion of respondents in each category. The current type of dwelling for the respondents respectively was 48% living in residential apartments, and 38% living in detached residences.
Figure 4.2: Current Habitation Arrangements

4.5.4. New Home Customization Preferences

In this section, respondents were asked about their preferences regarding the customized features of their homes. Areas of the house were broken down into sections to better illustrate what kind of products would fare better with the customizable options.

Consumers indicated their affinity for customization for specific features when buying a new house. The respondents were asked to rate the products from not important to customize (1) to important to customize (7). The highest rated features for customization were flooring, exterior doors, and wall paneling (Table 4.3).

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6 The totals do not add up to 100% due to rounding errors.
Table 4.3: Relative Importance of Features to Customize
(* = not significantly different from a neutral value of 4 at alpha = 0.05)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Average Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flooring</td>
<td>4.48</td>
</tr>
<tr>
<td>Exterior Doors</td>
<td>4.31</td>
</tr>
<tr>
<td>Wall Paneling</td>
<td>4.29</td>
</tr>
<tr>
<td>Interior Doors*</td>
<td>4.00</td>
</tr>
<tr>
<td>Kitchen Cabinet Doors*</td>
<td>3.73</td>
</tr>
<tr>
<td>Moulding</td>
<td>3.68</td>
</tr>
</tbody>
</table>

Respondents were asked to identify when wood should be used in each product. The scale used went from wood should never be used (1) to wood should always be used (7). The preference for wood use did not vary far from the neutral midpoint (Figure 4.3). The finished products with the highest for preference levels for wood use were flooring, interior doors, and mouldings.

---

![Figure 4.3: Best Location for Wood Use](image)

(* = not significantly different from a neutral value of 4 at alpha = 0.05)
4.5.5. **Imported Wood Products Preferences**

Echo boomer consumers identified the areas of their homes that they would be interested in paying a premium for imported wood products by ranking the top three locations out of a list of nine options. The top two areas ranked were the living room area, followed closely by the kitchen area (Figure 4.4). The areas which received less preference for imported wood products included the bathroom and bedroom areas.

![Figure 4.4: Evaluation Points for Locations in House for the Use of Imported Wood](image)

To further clarify imported wood products purchasing decisions, selected products were identified and consumers were asked to rank the top three products that they would favour purchasing from imported sources. As shown by the evaluation points in Figure 4.5, the most preferred products to purchase from imported sources were kitchen cabinets and flooring.
The last question on this topic was an open ended question which asked respondents if they preferred a specific region in the world as a source for wood products, and if so, where and why. Overall, domestic Japanese products and Canadian products were noted far more frequently than other regions.

Respondents reported the top reasons for selecting their regions of choice as being high quality, followed by to protect Japanese forestry and closeness to building site (Figure 4.6). The least noted reasons were sustainable forestry, local production for local consumption, and preferred species.
4.5.6. Information Sources

Respondents were asked to rate the usefulness of nine different types of advertising methods for finding information about builders when purchasing a new house on a scale from *not useful at all* (1) to *very useful* (7). Based on the means, echo boomer respondents cited personal recommendations, model houses, the Internet, and Newspapers as the most useful sources of information.
4.6. Discussion

4.6.1. Changes in Home Ownership

Compared to the overall Japanese population, there is a higher percentage of renters in the echo boomer age group which may be a result of home ownership wariness due to the market bubble collapse of the early 1990s (which includes the formative years of this age cohort). It also may be due to low savings combined with lower salaries for young temporary workers. In the space of a year, land prices dropped to nearly half of their original inflated worth. In many cases, millions of homebuyers took significant financial losses on the largest purchases of their lives. Current citizens appear to be saving funds for their first house purchase and/or waiting for land and housing prices to stabilize and long term price erosions and declines to turn around in Japan.

Rental housing is attracting younger generations in Japan with lower wage rates and less secure employment (due to the erosion of lifetime employment for new hires) and many residents are facing a lifetime of renting their residences, instead of buying them.

As this cohort ages and forms families, they will move from apartments to detached housing, making them an attractive target for new housing and increasing the demand for wood structural products. This is further supported with 38% of the sample population reportedly living in a detached dwelling compared to the national average (2003) of 56.5% (Japan Ministry of Internal Affairs and Communication January 2007). Likewise, 48% of respondents reported living in a residential apartment complex which mirrors the national average in 2003 of 40% (Japan Ministry of Internal Affairs and Communication January 2007).

4.6.2. Residential Customization

To date, there is little information about the housing customization preferences for this cohort of echo boomers. From the initial results in Table 4.2, many of the values hovered
around neutral, which may show that consumers are not that interested in customization for their first home purchase. This parallels the current trend for 'cookie-cutter' homes that feature low customization as a necessity for the lower costs associated with mass produced houses. This differs considerably from their baby boomer parents who valued the customization of finished products (Cohen et al. 2003).

The survey results illustrate that the finished products with the highest preference for wood use were flooring, interior doors, and mouldings. When comparing interior and exterior doors, exterior doors were rated as less preferable to be made out of wood as many structures have codes and regulations stating that exterior doors must be reinforced with steel composites for safety as well as for combustibility reasons. It seems that respondents prefer wood for interior finishing, but not the customization of these products. This suggests opportunities for standardized, lower cost, wood-finished products that could potentially be produced by North American secondary manufacturers.

4.6.3. Imported Wood Preferences

It is always difficult for manufacturers to predict which products will have success in foreign markets, especially when competing with other low cost suppliers. In the case of imported wood products, North American manufacturers compete directly with China and Europe, which respectively focus on low price and high design. Through determining the areas in the home in which imported products are preferred, North American manufacturers can focus on these identified markets.

The areas which received less preference for imported wood products included the bathroom and bedroom areas. It is clear that the respondents are willing to pay premiums for imported wood products in certain areas. Another way of looking at the data suggests that public places, such as living rooms, kitchens, hallways, and the entrance area, are preferred for using imported wood, while private areas like bedrooms and bathrooms are less preferred. In this light, there could be opportunities for Cedar and
other ‘outdoor’ imported woods from the moderately high ranking for usage of imported wood in outdoor areas.

It was surprising that there was no preference shown for imported structural materials in Figure 4.5. However, this may be a result of this cohort purchasing built-for-sale houses where the structural material often remains unknown to them.

4.6.4. Recommendations

Given that the surveyed echo boomer consumers seem to appreciate the structural strength and quality of Canadian wood products and wanted to protect Japanese forestry, a possible compromise could be hybrid products that would combine Japanese species with high quality Canadian products for strength. This combination may have an advantage over European imports currently threatening North American market share. It seems that rather than try to compete with domestic suppliers, manufacturers can utilize a marketing strategy which would combine the benefits from both suppliers and would help to circumvent other direct competitors.

Some examples would be to mix Hemlock and Sugi laminate stock for beams, using the Sugi for the weaker parts of the beam and the stronger Hemlock for areas where additional strength is needed. This could provide a lower priced alternative to European laminated beams, and even those made in China. Marketing strategies and supplier endeavors of this nature will take a significant amount of collaboration and effort; however, creating the foundation of such a project can lead to other collaboration efforts.

Typically, high quality has always been of utmost importance for Japanese consumers; however, it has been questioned for this cohort because of their penchant for lower prices. In this case, when selecting their region of choice, quality is paramount for them. For the built-for-sale market, unless builders can ensure quality products combined with competitive prices, then consumers will not be satisfied.
By combining the results from the imported preferences with the preferred locations in the house, it is clear that at least three opportunities are present for Canadian and BC:

- Wood flooring for the living room, hallway, and entrance are favoured products and locations for the use of imported wood products.
- Wood kitchen cabinets and doors that are both interior and exterior follow this.
- Outdoor areas, which are often very small in these starter homes, have the third highest potential.

4.7. Conclusions

The demographic and population patterns in Japan are unmistakable, and when combined with these survey results, it is evident that the echo boomer cohort will drive starter home purchases in Japan for the next decade.

Through interpreting this data and taking stock of industry background data, North American manufacturers can look to develop new programs to help solidify their market share in Japan. Foremost, opportunities lie in the development of current products to match the distinctive preferences of the echo boomer consumers. For example, by combining Japanese and Canadian species to produce high quality hybrid products, and marketing them as a fusion of North American styling with Japanese standards, manufacturers can look to better compete with European imports in the future. This is an area which could spur further exploration into Japanese markets and may provide new opportunities for increased and innovative Canadian exports.

Finally, with further research and market observation, wood products manufacturers and builders can continue to identify the best opportunities for imported building materials bound for Japan from North America.
4.8. References


5. Echo Boom Consumers in Japan and Their Environmental Awareness and Preferences for Urban Housing

5.1. Introduction

Environmentally friendly products and practices are increasingly spreading among the developed, urbanized world (Tanaka 2004). The strong ethics of the environmentally savvy consumer make hybrid cars, compact fluorescent light bulbs, and rechargeable batteries the new gold standards in their respective product categories. Additionally, our affinity for recycling has created new markets for recycled building products, packaging, stationary, and even clothing. The general industry response to these new market opportunities has mostly been focused on differentiating products using environmentally friendly attributes. The wood products industry is certainly no exception to this trend, as more and more companies are looking to profit from the environmental and sustainability movements in the global market.

Concerns for environmental issues are at an all time high around the world. In Japan, for example, the demographic masses of baby boomers and echo boomers are faced with changing their lifestyles in order to combat growing environmental threats like climate change. In particular, the younger echo boomer segment (so named for being the children of the baby boomers and creating an 'echo' population mass) face many environmental challenges. Making up almost 13% of the Japanese population (See Figure 5.1), it is critical to observe their environmental behaviours as they will hold much of the buying power in Japan over the next few decades (Cohen et al. 2003). This is particularly true in the case of housing choices, which arguably have some of the widest reaching environmental consequences of all their purchase decisions.

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7 A version of this chapter will be submitted for publication.
While there have been many studies conducted on the Japanese markets, few have addressed the demographic trends among Japanese residential home buyers in this echo boomer age group in terms of environmental behaviours. In order to identify the importance of environmental impact and other sustainability issues to this group of consumers, a survey was conducted in urban Japan in December 2006. As initial research in this field, this exploratory study collected preliminary information from Japan echo boomers regarding their knowledge, opinions, and expected actions regarding their housing decisions and the environment.

Specifically, this study explores young (echo boomer) Japanese urban consumers’ attitudes and knowledge about various environmental issues related to residential wood-framed housing. Understanding their knowledge of environmental issues and the application towards purchasing products utilized in home construction provides a lens on the future of environmental decision making in Japan.
5.2. Background

5.2.1. Impact of Housing on the Environment

Wood-framed residential housing is very important in Japan with just under half of all single family dwellings made with wood construction materials (Japan Statistics Bureau 2007). There also is an emerging understanding that a more sustainable approach to our environment is required and that, correspondingly, the way in which houses are built, located, and maintained can have a profound impact on the environment.

A report by the Intergovernmental Panel on Climate Change, “Fourth Assessment Report on Climate Change 2007: Mitigation of Climate Change”, concluded that “Residential and commercial buildings have the largest share of cost-effective opportunities for GHG (green house gas) mitigation among the other examined sectors such as agriculture, waste management and forestry”. Additionally, the report also states that “Energy efficiency options for new and existing buildings could considerably reduce CO₂ emissions with net economic benefit. Many barriers exist against tapping this potential, but there are also large co-benefits” (Intergovernmental Panel on Climate Change 2007 19-21)

Through analyzing environmental choices among echo boomers in Japan with respect to wood housing, wider conclusions can be drawn regarding their environmental preferences.

5.2.2. Environmentalism in Japan

The general quality of the Japanese environment has significantly improved since the late 1960’s when Japan was accurately described as the most polluted industrial nation in the world (Vogel 1992). However, domestic industrial emissions and poor waste disposal practices continue to present a number of important threats to public health. While there has recently been a resurgence of interest in environmental issues in Japan, the Japanese public's level of environmental awareness remains significantly below that of their counterparts in both Europe and the United States (Nakamura, Takahashi and Vertinsky
In sharp contrast to the situation in both Western Europe and North America, environmental organizations have not played a significant role in Japanese policies since the mid-1970’s (Vogel 1992).

A recent study looking at youth aged 15-25 years and the environment suggests that environmentalism in Japan may be shifting away from narrow concerns related to pollution and nature to reflect the broader beliefs and values of the new environmentalism (Barrett, Osamu, Harako, and Ishikawa 2002). However, it seems as if this perception has not transcended the slightly older generation of the echo baby boomers, who generally still only give lip-service to environmental issues (Japan Environment Association 2007). Nevertheless, the youth of Japan is becoming increasingly familiar with concepts commonly used in the international community, such as global warming or the ozone layer (Japan Environment Association 2007).

Evidence from a 2002 survey of young people in Japan shows that expectations about the future quality of the environment are mixed with feelings that better environmental management requires changes in lifestyles, values, and human behaviours. They also appear to be very supportive of environmental issues in their answers, ranking the importance of environmental protection above economic growth. (Barrett, Osamu, Harako, and Ishikawa 2002)

There has been increased media focus on environmental issues, including global warming, the rapid depletion of resources, and a general concern for the short and long term future of our environment. It is logical to assume that many young adults would be well informed and knowledgeable about environmental problems and solutions. However, environmental apprehension has only produced a 'veneer of environmentalism', where the majority of young adults in Japan declare their concerns for the environment, but are not prepared to change their buying habits and consumption patterns (Japan Environment Association 2007). Although this paradox is found in many developed countries and in many different demographic segments, the young adults of Japan are of
interest because of their ever growing consumption patterns and their place as Japan’s second largest group of power-wielding adult consumers (Brooke 2001).

5.2.3. Housing in Japan and Associated Environmental Concerns

Demographic trends influence almost every facet of the residential construction market. Changing social and demographic patterns, and the need to replace over 4 million housing units destroyed during World War II, required the development of an efficient housing supply system for Japan (Lampert and Ikehata 2000). The rapid migration of a significant portion of the population from rural areas to the cities in search of employment further compounded the housing problem. This led to an emphasis on the quantity, rather than quality, of housing (Cohen et al. 2003).

Partially as a response to the massive housing damage resulting from the 1995 Kobe earthquake the theme of the Japanese governmental housing policy, in the recent past, addressed quality issues, such as the need for earthquake and fire resistant facilities and the increased use of stronger, more resilient building materials. Recent changes to the Building Standards Law (BSL) and the Housing Quality Assurance Law (HQAL) have focused on physical performance and have not addressed environmental issues other than for indoor air quality (Cohen and Gaston 2005).

While the structural integrity and quality of a house continue to be important factors for Japanese consumers, exploratory research has indicated that some consumers value environmental attributes highly when purchasing a new home (Cohen and Kozak 2001) (Cohen et al. 2003). Interestingly, many customers were not willing to pay a premium for these attributes, but rather expected these as standard performance characteristics. Thus, developing a knowledge base of the environmental preferences for housing of certain demographic segments (like the echo boomers) will be helpful in forecasting the future trends of residential housing in Japan.
5.2.4. Forest Certification Schemes and the Japanese Consumer

In terms of creating tangible qualities to determine environmental attributes of housing, forest certification schemes are an example of actionable environmental knowledge. Forest certification and environmental labelling efforts have expanded internationally, targeting producers and consumers to promote sustainable logging initiatives and reduce the amount of illegal logging (Upton and Bass 1995) (Cashore 2003).

In a global market, where a customer can potentially be thousands of miles away, providing evidence of well-managed forests is increasingly being done through independent, third-party “certification”. Forest certification is designed to send a market signal to buyers that the wood products that they purchase are derived from forests that are managed to particular environmental and social standards (Rametsteiner and Simula 2003).

5.3. Methods

This study was conducted using a written survey, with data collected in Japan during November and December 2006. The questionnaire was developed and reviewed by both English and Japanese speaking researchers to ensure clarity, accuracy, and correct translation.

The population of interest consisted of all potential or current home buyers in Japan who were between 21-46 years of age and lived in the Tokyo or Osaka regions. The survey population was restricted to this age group since it represents the cohort termed the ‘echo boomers’, the highest proportion of first time home buyers (National Institute of Population and Social Security Research 2002). There are no exact definitions in Japanese demographics literature of the age range of the echo boomer cohort; however the Japanese Ministry of Health, Labour and Welfare statistics bureau report states that this cohort should encompass those born between 1971-1975 (National Institute of Population and Social Security Research 2002). The other instances state the cohort as
being those children born to the baby boomers. Thus, for this survey in order to properly represent the population bulge identifiable in Figure 5.1, only those aged 26-41 (born 1965-1980) were surveyed.

The survey population consisted of 100 respondents from Tokyo and its environs and an additional 100 respondents from Osaka and its environs. Tokyo and Osaka represent the largest metropolitan areas in Japan, representing almost 40% of Japan’s population as shown in Table 5.1.

Population density measures 4,028 persons per square kilometre in the Tokyo area, and 2,209 in the Osaka area, the highest of any cities in Japan and both significantly higher than the national average level of 340 per square kilometre (Japan Statistics Bureau 2007).

Table 5.1 Population of Two Largest Major Metropolitan Areas in Japan
(As of October 1, 2000; areas within 50 kilometre radius from each municipal office)
Source: Statistical Bureau of Japan

<table>
<thead>
<tr>
<th>Areas</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>126,926</td>
</tr>
<tr>
<td>Tokyo metropolitan area</td>
<td>30,724</td>
</tr>
<tr>
<td>Osaka metropolitan area</td>
<td>16,567</td>
</tr>
<tr>
<td>Total of two major metropolitan areas</td>
<td>47,291</td>
</tr>
<tr>
<td>Percentage of total population</td>
<td>37.3%</td>
</tr>
</tbody>
</table>

A Japanese marketing research firm personally administered the written surveys to ensure that respondents’ answers were not influenced by the research sponsors and that all questions were properly understood. The research firm used a panel of respondents to ensure the geographical, age, and gender mix met the study requirements, as well as to ensure that the results were an accurate reflection of the echo boom population in large urban centres in Japan such as Tokyo and Osaka.
In each case, the interviewer followed a written questionnaire, ensuring that the same questions were asked of each respondent. In December 2006, all surveys were completed and translated, and data was collected from 200 respondents. The data was then entered into spreadsheets for further analysis.

The questionnaires were reviewed and approved by the Behavioural Research Ethics Board of The University of British Columbia in November 2006.

5.3.1. Data Process

Descriptive statistical analyses in the form of plotted means were conducted using Microsoft Excel. Inferential statistics were used by testing the means (alpha 0.05) against the neutral value of four (on a seven point scale). In order to distinguish if there were any differences between answers from Tokyo and Osaka prefectures, a series of statistical tests were performed on the differences between the means on key questions (alpha = 0.05). The key questions included those relating to customization, and recent/future home purchasing preferences. However in each case, the results revealed no noteworthy differences, and thus, all results reported make no distinction between the Tokyo and Osaka respondents.

5.4. Results

5.4.1. Demographic Profile of Survey Respondents

The ages of the 200 echo boomers surveyed in Tokyo and Osaka ranged from 26 – 41, with the average age being 34. Two-thirds of respondents were married, 55% had children, and 28% reportedly lived with their parents. Most respondents (45%) had finished college, and 3% reported finishing graduate school.
5.4.2. Composition of Japanese Home Buyers/Owners

The respondents from the Tokyo region were from the following Prefectures: Kanagawa, Saitama, and Chiba. Respondents from the Osaka region were from Kyoto, Nara, Hyogo and Wakayama. Of these respondents over one-quarter still lived with their parents while 55% were couples with children. In terms of home ownership in Japan, 82% of respondents did not own their home at the time of the survey. Many of the respondents, especially those who still lived with their parents, are likely to purchase new homes in the coming decade.

5.4.3. Echo Boomers Environmental Level of Knowledge

To better understand respondents' levels of knowledge regarding some basic forestry environmental terms, they were asked to rate their level of knowledge from not knowledgeable at all (1) to very knowledgeable (7). The terms chosen are commonly used to describe environmentally acceptable wood from well managed forests. Most were derived from the literature on forest certification (Upton and Bass 1995; Gulbrandsen 2004). The mean responses shown in Figure 5.2 indicate that almost all participants felt they had very little knowledge of environmental forestry terms such as certification and sustainability. Each mean was tested against a neutral value of four, and all were determined to be statistically significant.
5.4.4. Importance of Wood Related Environmental Issues

Respondents were asked to rate the importance of wood related environmental issues on a seven point scale from *not at all important* (1) to *very important* (7). The most important issues to the Japanese customer as reported in the results in Figure 5.3 are product quality and that the wood products bear an environmental mark. The four main questions pertaining to environmental issues, relating to certification marks, sustainably managed forests, third party certification, and sustainably sourced materials, were all within a close range of importance. The least important issue was reported to be that the wood products be low cost. All results were statistically significant.
The wood that I use is the highest quality
Wood products bear an environmental mark
Wood comes from a sustainable managed forest
Wood products are certified by third party
The non wood materials come from sustainable sources
The wood is the lowest cost

Figure 5.3: Importance of Wood Related Issues
(Light grey shaded bars represent environmentally related issues)

5.4.5. Importance of Environmental Issues

Respondents were asked to rate the importance of generic environmental issues on a seven point scale from not at all important (1) to very important (7). While all environmental issues were reported as important to respondents, global warming was the most important and bioregionalism was the least (Figure 5.4). All topics but bioregionalism scored more than 6 on a 7 point scale. Each mean was tested against a neutral value of four, and all were determined as being statistically significant.
Figure 5.4: Relative Importance of Environmental Issues

5.4.6. Knowledge of Forest Certification Schemes

Six of the major forest certification schemes (five international schemes and one Japanese scheme) were listed and respondents were asked to rate their knowledge of each from not knowledgeable at all (1) to very knowledgeable (7). On average, the majority of respondents cited their knowledge as not knowledgeable at all for every certification scheme shown in Table 2. Overall, the difference between each certification scheme was negligible. Each mean was tested against a neutral value of four, and all were determined as being statistically significant.

Table 5.2: Certification Schemes Considered

<table>
<thead>
<tr>
<th>Certification Schemes Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest Stewardship Council</td>
</tr>
<tr>
<td>Sustainable Green Ecosystem Council (Japanese based)</td>
</tr>
<tr>
<td>Canadian Standards Association</td>
</tr>
<tr>
<td>Sustainable Forest Initiative</td>
</tr>
<tr>
<td>Programme for the Endorsement of Forest Certification</td>
</tr>
</tbody>
</table>
5.4.7. Perceived Importance of Wood Products Attributes

Survey respondents evaluated the importance of a number of criteria often associated with environmentally labeled wood products and other indicators for purchasing decisions. Respondents were asked to rate their knowledge of each from not important at all (1) to very important (7) and means of each criterion were computed and plotted (Figure 5.5). The most important criteria identified for wood products in the home were high structural strength followed by high quality. The least important indicator was obtaining the lowest price possible, followed by the product being derived from certified forests. Each mean was tested against a neutral value of four, and all were determined as being statistically significant.

![Figure 5.5: Perceived Importance of Various Wood Product Attributes](image)

(Light grey shaded bars represent environmentally related issues)
5.5. Discussion

5.5.1. Perceptions on Environment and Sustainability

On the whole, the analysis of environmental perceptions showed that knowledge of sustainable and legal wood issues was very low among echo boomers in Japan. While this cohort indicated that environmental issues were more important than price (but less so than quality), these results are suspect since “environmental intention” often does not result in action particularly when it comes to purchase decisions (Archer, Kozak and Balsillie 2005; Prakash 2002; Follows 2000).

When asked to rate the importance of general environmental issues, global warming was considered the most important issue and bioregional design and construction was rated the least. The respondents rated all environmental issues as important. However, when combined with the other responses from the forest certification schemes section which identified limited knowledge regarding certification and sustainability issues, it is difficult to link these consumers concerns with behaviour. The lack of behaviour modification due to environmental concern is supported by the Japan Environment Association report indicating that many Japanese consumers “place a higher priority on economic growth at the expense of environmental preservation” and are not willing to change purchasing habits to more eco-friendly options (Japan Environment Association 2007). This may be a case of respondents indicating what they think is the “right” answer, but only if it has no impact on their life styles (Archer, Kozak and Balsillie 2005; Prakash 2002; Follows 2000).

Recent reports indicate that environmental credentials remain highly consequential to a core group of Japanese wood products customers, with 31% rating environmental attributes as the most important criterion in deciding which structural products to purchase (Kennedy 2006). However, respondents in the echo boomer survey stated that their overall level of knowledge for a number of key environmental issues was very low,
meaning that, although customers may rate environmental issues as important, they generally lack the critical knowledge that can sway their behaviour.

While the results of the “Wood Related Environmental Issues” questions show that, although environmental issues are important, this may not transfer to behaviours and purchase decisions of consumers. However, the very high concern with environmental issues indicates that it may start to impact behaviour in the future and sustainability information may become increasingly important to consumer behaviour. The homogeneity of responses may indicate that this population may shift together, from concern to action and behavioural impacts. This suggests that stakeholders may want to engage now to influence future purchasing impacts should this cohort move en masse to action. At a minimum stakeholders need to continue to monitor both intentions and behaviour of this cohort, in terms of housing materials and product selection.

In terms of specific wood products issues, the most important topic identified was a concern for the quality of the wood used. This issue was more important than other environmental topics such as certification, sustainability, and third party regulations. Obtaining wood products for the lowest cost possible was identified as the least important issue. This makes these results intriguing since price has been found to be a key concern for Japanese consumers in previous research (Forrest, Kennett and Izuhara 2003).

### 5.5.2. Knowledge of Forest Certification Schemes

Overall, results indicate that consumer knowledge of forest certification schemes is extremely low. Any future attempts to increase demand for certified products by consumers will require an increased understanding regarding the basic premise of certified wood products. The area of certified forests is increasing in Japan. However, the international standards for forest certification are not as easily applied to Japan’s forests, since there is a relatively high percentage (45%) of planted forests and the timber industry is not globally competitive (Food and Agricultural Organization 2003). For
example, Japan has only 155 thousand hectares under FSC certification, amounting to just 0.6% of the country's total forest area (Bean 2000). This lower level of domestic adoption of certification programs could explain why the respondents' knowledge was very limited when questioned about certification schemes.

5.5.3. Perceived Importance of Wood Product Attributes

It was found that the softer environmental considerations, such as 'preserves the environment', were more important than more rigorous measures like 'comes from certified forests'. This suggests that the environmental concerns are generic and ambiguous and have not yet become important enough to influence behaviour, such as purchasing materials from certified forests. The knowledge of sustainable and legal wood issues was very low so there is potentially an opportunity to help better frame these concepts for this cohort.

Failure to respond constructively to the trends of environmental behaviour in consumers has been shown to compound customer distrust of the wood products industry and reinforces tendencies to shift purchasing to alternative products such as steel or concrete (Market Research Centre of Canada, Department of Foreign Affairs and International Trade 2003). However, there is clearly an opportunity to build a stronger relationship with the customer by working together to address the complex problem of sustainably responsible wood products.

5.6. Conclusion

This study represents an attempt to investigate the preferences of the echo boomer cohort in Japan towards environmental and sustainability issues relating to wood products for residential housing. In the next ten years, more and more echo boomer consumers will be entering into the residential housing market and driving housing starts. Some companies will capitalize on these environmental trends, while others may compete only on low costs and quality.
The findings provide some evidence of attitudes that support environmentally friendly practices and products. However, the knowledge level regarding specific environmental topics of the respondents was very low. The majority of respondents were identified as being very concerned about the environment, as well as acknowledging the importance of environmental certification. Although respondents listed environmental issues as important, it is still unknown if consumers will allow their concerns to affect their buying behaviour.

Consistent with other research, results also indicate that consumer awareness of certification is extremely low, and that any attempt to increase sales of certified products will require fostering an increased understanding among end-users. Companies should look to educate and inform rather than focusing on promoting specific products or schemes. Collaboration among certification schemes may also be an appropriate solution to avoid the confusion of attempting to decipher the differences, rather than understanding the common themes. Consumers require information to make more informed choices, and given their stated concern for the environment and interest in certification, it would seem that a concerted effort is necessary and worthwhile to empower consumers and create a demand pull within the market.

Like any new regulation or adjustment of a product, there will be significant obstacles for forest product companies to convince consumers of the merit of environmentally certified products. This age-cohort is a potential target market for manufacturers and retailers that support forest certification and are interested in developing environmentally sound business opportunities as they hold the buying power for the future years. At this point, though, echo boomers in Japan need convincing and information in order to begin to change their buying habits.
5.7. References


http://www.springerlink.com/content/x172435h6k38747q/ Accessed 04/15/2007


6. Discussion and Conclusion

6.1. Overview

This research project has focused on describing the preferences of a specific demographic cohort of consumers for the Japanese housing market based on the results of a survey. This echo boomer cohort is just entering adulthood, and includes those born from 1971-1974, although when expanded to encapsulate the tail ends of the boom from 1965-1980, it includes nearly 13% of the Japanese population. This research provides detailed information about the perceptions this unique age-group of consumers towards customization and environmental issues of wood products used in housing.

The three specific objectives of this research were

- to categorize those areas in a house that the echo boomer cohort is willing to pay premiums for “custom” wood products which could be supplied by North America and specifically British Columbia;
- to determine the perceptions of the echo boomer cohort towards imported building products produced from competing regions of the world; and
- to identify the importance of environmental impact and other sustainability issues of wood products to echo boomer consumers.

The first manuscript in Chapter 4, ‘Echo boomer Demographics: Generational Shifts in Housing Preferences’, focused on the various aspects of housing in urban Japan that can influence specifications important to wood products manufacturers. The manuscript provides insight on a key segment of the Japanese population with respect to their needs and wants for future housing.

The second manuscript in Chapter 5, ‘Echo Boom Consumers in Japan and their Environmental Awareness and Preferences for Urban Housing’, details attitudes and knowledge about various environmental issues of young (echo boomer) Japanese urban consumers’ related to residential wood-framed housing. This section of the research was
conducted through the same survey used in Chapter 4 of the manuscript. However, the questions used in the analysis focused on environmental and sustainability issues related to wood framed housing and general forestry issues.

6.2. Results and Research implications

6.2.1. Changes in Home Ownership

A key result of the first manuscript, which could affect the future research directions of this topic, is that the echo boomer consumers are just now entering into the housing market; 80% reported not yet owning a home and many are renting homes. This corroborates, to some extent, the relatively low ownership rates among younger Japanese (Lampert and Ikehata 2000). Over the past two decades, there has been a significant reduction in the ownership rate among Japanese households in the age groups less than 45 years (Lampert and Ikehata 2000). The results could also be influenced by the trend of ‘parasitic singles’ which describes the phenomenon of approximately 13 million young adults still living with their parents well into adulthood (Tran 2006). Clearly wood products manufacturers will need to keep monitoring this group as their preferences towards customization and imported wood products may change as they mature and enter the housing market.

It is also important to recognize how quickly the demographics of Japanese society are changing, causing trends to change very quickly as different segments of consumers hold the majority of the disposable income. It is estimated that, after 2010, Japanese housing starts will drop significantly due to population declines resulting from low birth rates and the absence of immigration (Cohen 2000). However, the substantial demand for re-built housing will continue to support high levels of housing activity in Japan for the future (Lampert and Ikehata 2000).
6.2.2. Perceptions towards Customization and Imported Wood Products

The echo boomer respondents repeatedly reported neutral values for customized products which suggests that they do not feel strongly one way or another that a wood product needs to be customized. With the increasing amounts of pre-built, non-customized homes, these results are consistent with the trends for new housing being built in Japan (JLJ 2005). This is interesting because, in the past, Japanese homes were generally built to tight customer specifications and preferences resulting in a high proportion of customization (Lampert and Ikehata 2000).

It is important for wood products manufacturers to meet customer specifications in terms of customization since increasing customization can become expensive for manufactures (Iwashita 2001).

Results indicate that the majority of respondents favour wood in the public areas of their homes, such as flooring and interior doors. However, they are less inclined to use wood in private areas of their homes, such as the bedrooms. This is consistent with research on Japanese culture, which suggests that guests tend to be treated better than occupants in order to maintain respect and dignity (Deshpande, Farley, and Webster 1993). Through emphasizing the high quality and aesthetic nature of interior finished wood products, manufacturers have the potential to accentuate their specified products to this specialized market.

Respondents also reported that they prefer to purchase kitchen cabinet and flooring products from imported sources. They also reported that quality was the primary reason why they would purchase imported products. With these results, wood products manufacturers who import products into Japan can look to either continue producing these products, or else attempt to develop products for this area of the market.

Overall, this information is useful to North American wood manufacturers through the provision of timely and relevant market information on an important and dynamic
segment of the Japanese marketplace. The manuscript recommendations highlight that the North American wood product manufacturers must continue to observe this cohort as they will hold the buying power for wood housing in the future. Furthermore, they show signs of having very different preferences to those of their parents, the baby boomer generation.

### 6.2.3. Perceptions towards Environmental and Sustainability Issues

The results of the environmentally focused research illustrated that the levels of knowledge of the echo boomer cohort was generally very low when questioned about environmental issues. Paradoxically, when asked if environmental issues were important, the majority of the respondents agreed. These results are interesting as previously it was reported that this cohort generally are not as concerned about environmental issues (Japan Environment Association 2007). However, these results show the emergence of a general concern, which could evolve into changes in behaviour over time. Marketing of environmental products requires that the customers are willing to make an informed change rather than just on a whim, since these products usually come with a price increase (Cashore 2003). Future research needs should focus on the provision of baseline educational requirements for environmental marketing.

The results regarding environmental certification schemes indicate that consumer awareness of forest certification is extremely low. This segment of Japanese consumers requires further information to make more informed environmental choices, and given their stated concern for the environment, it would seem that a concerted effort is necessary and worthwhile to inform consumers of the benefits of forest certification.

The literature review highlighted that the introduction of new building regulations which promote more energy-efficient and healthy housing designs will provide increased opportunities for companies with environmental expertise in these areas (Nakamura, Takahashi, and Vertinsky 2001). Builders specializing in traditional Japanese houses are
not generally familiar with these concepts, which presents opportunities for North American manufacturers to develop the market for both 2 by 4 housing and traditional post and beam wood housing (Nakamura, Takahashi, and Vertinsky 2001).

In this section on environmental issues, it was noted that the results were very homogenous, making it difficult to perform statistical tests commonly used in survey research. Homogenous results suggest that the majority of consumers feel the same way about a given topic, thus it will be important to monitor any changes since they are likely to affect the homogenous population at approximately the same time.

The overall conclusions of the research on environmental issues and housing suggest that, although environmental knowledge is low amongst echo boomers, they deem these issues important. This bodes well for future behavioural changes.

6.3. **Research Strengths and Limitations**

This research project primarily utilized survey data analysis methods to analyze research findings. The strengths and weaknesses of this approach and the results obtained are summarized below. In future studies, this data could be considered inferential and statistical tests such as cross tabs and t-tests could be employed to obtain future resolution on data trends among the Japanese echo boomer cohort.

The first strength of the research is that it is one of the first studies of its kind, since this age cohort in Japan has rarely been studied in terms of housing preferences and environmental inclinations. By providing background research on this cohort, manufacturers can focus on more tailored products aimed at a significant and increasingly important segment of the Japanese population.

The second strength involves the thoroughness of the survey collection method. Conducting the survey using the interview method enabled the interviewers to ensure that
each respondent answered the entire survey. Interviewers also ensured that all questions were completed thoroughly and to the best of the respondent’s knowledge.

The last strength related to the research approach since all survey interviews were conducted in Japanese and then translated. This enabled us to get a clear idea of the respondents’ opinions with a small margin of error. Additionally, through using this format, it will be very straightforward to continue to measure changing intentions or behaviours at a later date, by re-administering the survey with minor changes.

A limitation that was encountered with the results of this research involved the homogeneity of answers from the respondents. Due to the consistency of the results, it was difficult to perform many statistical analyses to further exploit the data. Although the homogeneity made it much easier to analyze information descriptively, statistically significant results were difficult to obtain.

Other limitations include the lack of ability to infer to a broader population, and the bias inherent in asking about behaviours versus practices. The latter was most evident when asking consumers about environmental preferences. In many cases, they seemed concerned about environmental practices and certification, but without any knowledge of tangible buying patterns, it is difficult to predict if the respondents would actually alter their purchasing habits.

6.4. Conclusions

This research will be mostly significant to North American wood products exporters, primarily those based in British Columbia. With Japan being the Pacific Northwest’s primary export destination, it is crucial to keep current with the consumer trends emerging within various demographic segments. Faced with a rapidly declining population and decreased housing starts, a greater importance will be put on the echo boomer cohort to take care of the aging population and the struggling economy. For new
and current competitors in the housing industry, the first steps for anticipating these changes will be to monitor the preferences of this group of consumers to better meet their market needs and outperform competitors.

In the future, it will be very important to watch this segment of consumers closely in terms of their environmental buying behaviours since our results showed significant homogeneity among consumers. This homogeneity may mean that their behaviours will shift at once; however, there is also a chance that this group of consumers might collectively never become “environmentally friendly”. The potential for change can be better identified by continuing to observe this specific cohort, especially in terms of what it would take the customers to shift their concerns to behaviours.

Research and development of new product areas will be critical to fend off competitor attempts at taking away market share from North American manufacturers and to maintain current market segments. Incorporating environmental attributes as part of product definitions may assist exporters of wood products to Japan. Thus, by improving and solidifying an identifiable presence with quality, competitive pricing, and environmental stewardship, North American products can more readily compete with existing and new entrants.
6.5. References


Appendix A

Japan's Echo Boomer Cohort Consumer Housing Preferences Survey

Section 1: Current Housing Information

Please answer the following questions for the home you currently live in.

1. Where is your current primary residence located?
   - City/town: 
   - Prefecture: 

2. Who lives in your house with you? (Check all that apply):
   - 1. No one
   - 2. A roommate
   - 3. My spouse/partner
   - 4. My parents
   - 5. My child/children (number of children: )
   - 6. Other - please specify

3. What is your current home ownership status? (Please check only one box)
   - 1. Renting
   - 2. Owned by myself
   - 3. Living with parents
   - 4. Own with someone else
   - 5. Other - please specify

4. What type of dwelling do you currently live in? (Please check only one box)
   - 1. A detached house
   - 2. An apartment in a residential complex
   - 3. An apartment above a commercial enterprise
   - 4. A townhouse (adjacent houses, but with individual entrances)
   - 5. Other - please specify

5. To the best of your knowledge, what is the construction system used in your current dwelling? (Please check only one box)
   - Wooden
     - Traditional Post and Beam
     - North American style 2x4
     - Pre-fabricated
   - Non-Wooden
     - Steel Frame construction
     - Reinforced concrete
     - Not sure/don't know

6a. Please indicate your region of preference for wood structural building materials in a traditional Post and Beam frame home:
   - Canada
   - Europe
   - USA
   - Japan
   - Don't know/Don't care
   - Other specify

6b. Please indicate your region of preference for wood structural building materials in a 2x4 frame home:
   - Canada
   - Europe
   - USA
   - Japan
   - Don't know/Don't care
   - Other specify
Section 2: Customized Housing Attributes

<table>
<thead>
<tr>
<th>Importance to Customize</th>
<th>Neutral</th>
<th>Not Important to Customize</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kitchen Cabinet Doors</strong></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td><strong>Flooring</strong></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td><strong>Interior Doors</strong></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td><strong>Exterior Doors</strong></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td><strong>Wall Panelling</strong></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td><strong>Moulding</strong></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td><strong>Other - specify</strong></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

2. For each of the following products, indicate how much wood should be used. For each product, check only one response.

<table>
<thead>
<tr>
<th>Wood should never be used</th>
<th>Neutral</th>
<th>Wood should always be used</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kitchen Cabinet Doors</strong></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td><strong>Flooring</strong></td>
<td>1 2 3 4 5 6 7</td>
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<tr>
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<td>1 2 3 4 5 6 7</td>
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<tr>
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<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td><strong>Other - specify</strong></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
### Section 3: Imported Wood Products Preferences

<table>
<thead>
<tr>
<th>Rank</th>
<th>Location</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kitchen</td>
<td>Hallway area</td>
</tr>
<tr>
<td></td>
<td>Master bedroom</td>
<td>Secondary bedroom</td>
</tr>
<tr>
<td></td>
<td>Bathroom</td>
<td>Living room</td>
</tr>
<tr>
<td></td>
<td>Entrance area</td>
<td>Stairs</td>
</tr>
<tr>
<td></td>
<td>Outdoor area</td>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

#### Rank the top 3 wood products that you would consider purchasing from imported sources. (Rank from 1 to 3, with 1 being the most important product)

<table>
<thead>
<tr>
<th>Wood Product</th>
<th>Wood Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen cabinets</td>
<td>Wood wall paneling</td>
</tr>
<tr>
<td>Flooring</td>
<td>Roof trusses</td>
</tr>
<tr>
<td>Mouldings</td>
<td>Wainscoting</td>
</tr>
<tr>
<td>Windows</td>
<td>Wood for tatami room</td>
</tr>
<tr>
<td>Interior doors</td>
<td>Wood structural members</td>
</tr>
<tr>
<td>Exterior doors</td>
<td>Other</td>
</tr>
</tbody>
</table>

#### Do you prefer a specific region in the world as a source for wood products? If so where and why?

#### Rank the top 3 interior wood products for which you believe North America has a very good reputation. (Rank from 1 to 3, with 1 being the most important interior wood product)

<table>
<thead>
<tr>
<th>Interior Wood Product</th>
<th>Interior Wood Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen cabinet</td>
<td>Wood wall paneling</td>
</tr>
<tr>
<td>Flooring</td>
<td>Roof trusses</td>
</tr>
<tr>
<td>Moulding</td>
<td>Wainscoting</td>
</tr>
<tr>
<td>Window</td>
<td>Wood for tatami room</td>
</tr>
<tr>
<td>Interior door</td>
<td>Wood structural members</td>
</tr>
<tr>
<td>Exterior door</td>
<td>Other</td>
</tr>
</tbody>
</table>
What words come to mind when you think of the following wood products from British Columbia?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Structural wood products</td>
</tr>
<tr>
<td>b.</td>
<td>Interior finished wood products</td>
</tr>
</tbody>
</table>
### Section 4: Environment and Sustainability

#### 1. Please rate level of knowledge of the following:

<table>
<thead>
<tr>
<th></th>
<th>Very Knowledgeable</th>
<th>Neutral</th>
<th>Not Knowledgeable at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certified wood products</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal wood products</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental certification</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chain of custody certification</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest sustainability</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 2. How important are the following issues?

<table>
<thead>
<tr>
<th></th>
<th>Very Important</th>
<th>Neutral</th>
<th>Not Important at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>The wood that I use comes from a forest managed in a sustainable manner</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The non wood materials that I use come from sustainable sources</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood products are certified by a third party source</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood products bear a mark ensuring environmental certification</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The wood that I use is the lowest cost possible</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The wood that I use is the highest quality possible</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 3. Rate the importance of the following environmental issues:

<table>
<thead>
<tr>
<th></th>
<th>Very Important</th>
<th>Neutral</th>
<th>Not Important at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global warming</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest sustainability</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy: efficiency, use of renewable sources, etc.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioregionalism of design &amp; construction</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh water conservation</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil conservation</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection of the oceans</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 4. How knowledgeable are you regarding current forest certification schemes?

<table>
<thead>
<tr>
<th></th>
<th>Very Knowledgeable</th>
<th>Neutral</th>
<th>Not Knowledgeable at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGEC Sustainable Green Ecosystem Council</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SFI Sustainable Forest Initiative</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEFC Programme for the Endorsement of Forest Certification</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSC Forest Stewardship Council</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSA Canadian Standards Association</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

81
5. How important is it to you that the wood products in your home meet the following criteria?

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Very Important</th>
<th>Neutral</th>
<th>Not Important at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has a low environmental impact where they are logged</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Preserves the environment</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Has high structural strength</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has low environmental impact in terms of transporting the product to me</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Has high quality</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Has a minimal social impact on the source country</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowest price possible</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Has a low environmental impact on where I live</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Good value for money paid</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comes from certified forests</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 5: Recent/Future Home Purchasing

Please indicate if you are answering the following questions for:

- The last house you have purchased or
- The one you plan to purchase

<table>
<thead>
<tr>
<th>1</th>
<th>The house is/will be (Please check only one box):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>An apartment (adjacent units, with a common entrance)</td>
</tr>
<tr>
<td></td>
<td>A detached house</td>
</tr>
<tr>
<td></td>
<td>A townhouse (adjacent houses, but with individual entrances)</td>
</tr>
<tr>
<td></td>
<td>Other - please specify:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2</th>
<th>Your preferred main structural material is (check only one box):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wood</td>
</tr>
<tr>
<td></td>
<td>Steel</td>
</tr>
<tr>
<td></td>
<td>Concrete</td>
</tr>
<tr>
<td></td>
<td>Don't care</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>Your preferred location is (Please check only one box):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Downtown</td>
</tr>
<tr>
<td></td>
<td>Suburban</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>The expected price range is (Please check only one box):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Below ¥ 10 million</td>
</tr>
<tr>
<td></td>
<td>Between ¥ 10.1 million and ¥ 20 million</td>
</tr>
<tr>
<td></td>
<td>Between ¥ 20.1 million and ¥ 30 million</td>
</tr>
<tr>
<td></td>
<td>Between ¥ 30.1 and ¥ 40 million</td>
</tr>
<tr>
<td></td>
<td>More than ¥ 40 million</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5</th>
<th>The land for your house was or will be (check only one box):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Purchased along with the house</td>
</tr>
<tr>
<td></td>
<td>Don't need it, because you are buying an apartment</td>
</tr>
<tr>
<td></td>
<td>Purchased separately to be built on</td>
</tr>
<tr>
<td></td>
<td>Owned by family already</td>
</tr>
<tr>
<td></td>
<td>Purchased and then built on</td>
</tr>
<tr>
<td></td>
<td>Other - please specify:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6</th>
<th>How old were you when you bought your first home, or when do you plan to buy your first home?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age:</td>
</tr>
<tr>
<td></td>
<td>Reason for buying at this age:</td>
</tr>
</tbody>
</table>
7. How important is it that your new house be close to the following?

<table>
<thead>
<tr>
<th></th>
<th>Very Important</th>
<th>Neutral</th>
<th>Not Important at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subway/Train station</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entertainment centres</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supermarket</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safe neighbourhood</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main road</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. How useful are the following methods for finding information about builders when purchasing a new house. For each method, check only one response.

<table>
<thead>
<tr>
<th></th>
<th>Very Useful</th>
<th>Neutral</th>
<th>Not at all Useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local poster advertisement</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subway/Train advertisement</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newspaper advertisement or flyer</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advice from friends or relatives</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flyer advertisement (hand out)</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magazines</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Television advertisement</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model houses at housing exhibits</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other: _____________________________</td>
<td>1   2   3   4   5   6   7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. What percent of your new house purchase will you finance by each of the following means? Total should equal 100% (ex. Method A 50%).

- Mortgage/ Bank Borrowing
- Family Loans
- House Building Company
- Savings
- Government and Housing Loan Corporation
- Other ____________________________
Section 6: Background Information

The following background information questions are included only to help us interpret your responses to other questions. Your responses here and throughout the questionnaire will be held strictly confidential.

1. What is your current marital status? (Please check only one box)
   - Never married
   - Married
   - Widowed
   - Divorced

2. What is your current age?
   - [ ] Years

3. What is your gender? (Please check only one box)
   - [ ] Male
   - [ ] Female

4. How many children do you have and what are their ages?
   - 

5. What is the highest level of formal education you have completed? (Please check only one box)
   - [ ] Elementary school
   - [ ] At least one year of college
   - [ ] Junior high school
   - [ ] Graduated college (4 years)
   - [ ] High school
   - [ ] Attended or completed graduate school
   - [ ] Technical school

6. If you were asked to use one of the following terms to describe your social class, which one would you choose? (Please check only one box)
   - [ ] Lower class
   - [ ] Upper-middle class
   - [ ] Lower-middle class
   - [ ] Upper class
   - [ ] Middle class
What was your total household income in 2005 from all sources before taxes? (Please include here all income received by anyone in your household) (Please check only one box)

<table>
<thead>
<tr>
<th>Income Range</th>
<th>12 million - 13,999,999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than ¥ 6 million</td>
<td></td>
</tr>
<tr>
<td>¥6 million - ¥ 7,999,999</td>
<td></td>
</tr>
<tr>
<td>¥8 million - ¥ 9,999,999</td>
<td></td>
</tr>
<tr>
<td>¥10 million - ¥11,999,999</td>
<td></td>
</tr>
<tr>
<td>¥12 million - ¥ 13,999,999</td>
<td></td>
</tr>
<tr>
<td>¥14 million - ¥15,999,999</td>
<td></td>
</tr>
<tr>
<td>¥16,000,000 and over</td>
<td></td>
</tr>
</tbody>
</table>
CERTIFICATE OF APPROVAL - MINIMAL RISK

<table>
<thead>
<tr>
<th>INSTITUTION / DEPARTMENT:</th>
<th>UBC BREB NUMBER:</th>
</tr>
</thead>
<tbody>
<tr>
<td>UBC/Forestry/Wood Science</td>
<td>H06-03543</td>
</tr>
</tbody>
</table>

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Other locations where the research will be conducted:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

CO-INVESTIGATOR(S):

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarah Saddler</td>
</tr>
</tbody>
</table>

SPONSORING AGENCIES:

<table>
<thead>
<tr>
<th>Agency Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forestry Innovation Investment Ltd. - &quot;Japan Echo Boomers and Housing&quot;</td>
</tr>
<tr>
<td>International Environmental Institute - &quot;Japan Echo Boomers and Housing&quot;</td>
</tr>
</tbody>
</table>

PROJECT TITLE:

To determine the consumer perceptions of the echo boomer segment (26-41 years of age) of Japan towards imported wood products and environmental issues in the residential housing market.

CERTIFICATE EXPIRY DATE: December 12, 2007

DOCUMENTS INCLUDED IN THIS APPROVAL:

<table>
<thead>
<tr>
<th>Document Name</th>
<th>Version</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protocol:</td>
<td>1</td>
<td>November 3, 2006</td>
</tr>
<tr>
<td>Research Proposal Japan Echo Boomers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questionnaire, Questionnaire Cover Letter, Tests:</td>
<td>N/A</td>
<td>November 6, 2006</td>
</tr>
<tr>
<td>Cover Letter</td>
<td>N/A</td>
<td>November 6, 2006</td>
</tr>
<tr>
<td>Survey for Echo Boomers in Japan</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The application for ethical review and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.

Approval is issued on behalf of the Behavioural Research Ethics Board and signed electronically by one of the following:

Dr. Peter Suedfeld, Chair
Dr. Jim Rupert, Associate Chair
Dr. Arminee Kazanjian, Associate Chair
Dr. M. Judith Lynam, Associate Chair