



GREEN MARKETING OF SAWN TIMBER AND WOOD BASED PANELS IN FINLAND AND SWEDEN

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ABSTRACT

Finnish and Swedish sawmill and wood based panel companies were surveyed for the purpose of evaluating the environmental emphasis and the role of timber certification in their marketing planning. The industries in both countries are relatively well prepared for integrating environmental issues into business and marketing management. Findings of the study show that companies have integrated environmental issues equally in their strategic level decisions. The impact of environmental issues in marketing communication is stronger within the Finnish sawmill industry. On the other hand, Swedish companies examine environmental information and invite input from environmental groups much more actively than Finnish companies. Also relationships between marketing strategies and functions were examined. As assumed according to the principles of environmental marketing, marketing functions — e.g. advertising and pricing — are the logical consequences of strategic level decisions. Even though environmental issues are central in marketing strategies, sophistication of integrating environmental issues into marketing planning could be improved and the level of strategic decisions deeper if genuine environmental responsibility is considered important.

Keywords: Environmental marketing, forest products, marketing strategies, sawmill industry, timber certification.



INTRODUCTION

Green Challenges for Marketing Planning

In recent years, marketers have become increasingly aware of the impact that company and consumer activities have on natural resources and the environment in general. The concern is so great that environmentalism has been designated as potentially “the biggest issue of the 1990’s”. This kind of development in society means that environmental and social concerns in society will set new challenges for companies. Environmental or “green” marketing has been

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seen as a one tool for sustainable development and satisfaction of varied stakeholders. (Polonsky & Mintu-Wimsatt, 1995.)

Peattie (1995) defines green marketing as *the holistic management process responsible for identifying, anticipating and satisfying the requirements of customers and society, in a profitable and sustainable way*. According to Ottman (1993), environmental marketing requires new marketing and management strategies that can effectively address key challenges relating to, 'how we define green, how we develop green products that customers will like, and how we communicate our commitment and initiatives with credibility and impact'. Menon & Menon (1997) argue that the more actively and progressively a company pursues environmental performance improvements, the greater is the potential for developing, maintaining and enhancing competitive advantage.

The basic question for green marketing is: *how should environmental and social responsibility be integrated into traditional utilitarian business and marketing planning?* For example, Banerjee (1999) and Wehrmeyer (1999) have analysed the greening of strategic marketing with implications for marketing theory and practice. Recent developments show that a green agenda following holistic principles has now been integrated into mainstream marketing literature (McDonagh & Prothero, 1997). However, it seems that many companies feel uncertain how they should react to green challenges. As Peattie (1999) states, 'Without a greener philosophy and vision of marketing, the greening of marketing practice will be an uphill battle'. It is clear, for example, that communications must be based on facts and credible strategies or companies will be accused of 'greenwashing' (unfounded environmental claims).

Timber Certification as a Potential Marketing Tool for the Forest Industry

Environmental concerns in the forest industry have clearly emphasised sustainable forestry during the 1990's. One example of implementing green marketing relevant for the forest industry is the use of third-party forest certification as a marketing tool to ensure compliance with the principles of sustainable forest management (SFM). Presently the strongest demand for certified forest products comes from

certain customers of forest industry in the UK, the Netherlands and Germany. (Hansen & Juslin, 1999; Rametsteiner et.al, 1999; Steineck, 1999)

Worldwide, a number of timber certification systems exist and yet more are under creation. According to many experts (Ghazali & Simula, 1997), no single certification scheme is expected to gain the monopoly in the market of forest products. Supported by environmental organisations, such as the WWF, the Forest Stewardship Council (FSC) is the best known certification scheme internationally. The Pan-European Forest Certification (PEFC) scheme, developed by European landowners, was introduced during 1999. The PEFC provides a mechanism for mutual recognition among national certification schemes. The Finnish forest certification system, supported by private forest owners and the Finnish forest industry, is linked to PEFC. The first large-scale certifications in Finland took place in the late 1999. Most of the large forest industry companies in Sweden have chosen the FSC system while the private forest owners are likely to join the PEFC. Thus, the supply of certified wood products is expected to increase in the future (Hansen & Juslin, 1999).

In general, companies have experienced positive public relations as a result of becoming involved with forest certification (Vallejo, 1996; Hansen & Juslin, 1999). Still, systematically analysed information concerning the potential of timber certification as a marketing tool appears to be missing. Forest industry marketers may also feel unsure how they should integrate certification, or other environmental issues, into their marketing planning.

Timber Certification and Green Marketing in the Finnish and Swedish Forest Industries

Sweden is often considered the most advanced country in the world in terms of its environmental legislation. Sweden has used fiscal instruments such as pollution taxes as means to influence industry behaviour. This has caused many Swedish firms to develop a proactive response to environmental issues (Chadwick, Garrod & Larsson, 1996). However, some industry sectors have been more active than others. For example, the Swedish mechanical forest industry has been more passive in environmental improvement

work than the chemical industry (Nystöm, Smeder & Mark-Herbert, 1997). However, many analysts assess Swedish forest industry to have gained a better environmental reputation in the environmentally sensitive markets of Central Europe (Repo, 1998). Environmental organisations have criticised the Finnish forest industry more for clear cutting in ecologically valuable areas and for buying round wood from Russia.

Large Swedish forest industry companies, such as Stora (now Stora-Enso) and AssiDomän, have certified their own forests, and are able to deliver FSC certified products. By the end of 1999 the Finnish sawmill and panel industry had not been able to deliver certified products because there was no fully functional certification system in Finland. Finnish environmental organisations regard the Swedish FSC certification criteria and the Swedish forest industry as more environmentally oriented. They feel the Finnish forest industry should follow the Swedish example to embrace the FSC system (Ovaskainen, 1999). The Finnish forest industry has not been ready for this and continues to support the Finnish national certification criteria (Luukkonen, 1999). However, there are signs that some British customers previously committed only to FSC-certification would be ready to also accept the Finnish certification standard linked with PEFC (Palokallio, 1999).

The Swedish forest industry sees timber certification as a potential marketing advantage (Repo, 1998). Since the Swedish companies were among the first to offer FSC-certified products, they have been able to gain marketing advantage in certain market areas. Lennart Ahlgren, the former president and chief executive officer of the Swedish forest products giant AssiDomän once claimed, 'As a result of certification we've increased our sales, we've attracted new customers and have also increased sales with existing customers who are paying a premium price' (Anon., 1998). Jan Rosander (1998), production sales administrator for former Stora, claims that some companies in the Netherlands advertise that they use FSC certified wood products from Stora. The fact that Swedish companies could deliver certified forest products earlier increases the pressure on the Finnish forest industry (Halla, 1998; Nikula, 1998).

OBJECTIVES OF THE STUDY

The purpose of the empirical study is to describe and compare how well environmental issues have been integrated in the marketing planning of the Finnish and Swedish sawmill and panel industries. This will be done by focusing on two hierarchical decision levels of marketing: the strategic level and the functional (implementation) level. Theoretically, the aim is to test Juslin's (1992) integrated model of marketing planning concerning environmental issues in marketing. The specific questions under focus are:

- Are environmental issues integrated into marketing planning, and what is the role of timber certification in marketing? (see proposition P1)
- What are the differences between the Finnish and Swedish sawmill and panel industries regarding the emphasis on environmental issues in their marketing planning? (see proposition P2)
- What are the relationships between marketing strategies and functions? (see proposition P3)

Strategic level decisions are defined as product strategies, customer strategies and competitive advantage strategies. The impact of environmental issues on marketing functions is examined in advertising, communication, market information and pricing. Empirically testing the relationships between marketing strategies and functions allows further development of the theory of environmental marketing.

THEORETICAL FRAME OF REFERENCE

The theoretical framework of the study (Figure 2) is based on concepts used in previous studies where Juslin's (1992) integrated model of marketing planning (Figure 1) was utilised and tested (Niemelä 1993; Niemelä & Smith, 1996; Martikainen, 1994).

Juslin's strategic marketing planning model identifies three hierarchical elements in marketing planning: *strategies* (products, customers, market area and competencies), *structures* (organisation, planning and information systems, contact channels and channels of physical distribution) and *functions* (personal selling, marketing communication, mar-

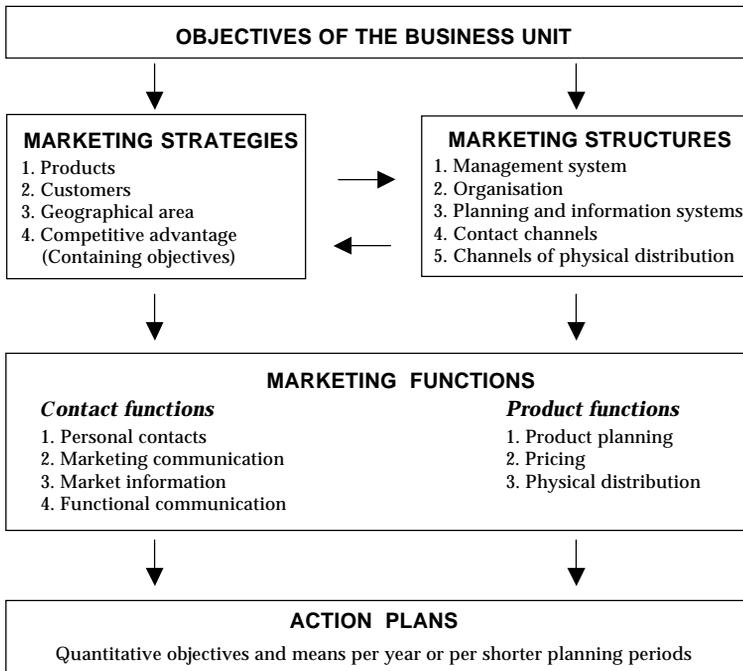


FIGURE 1. THE INTEGRATED MODEL OF MARKETING PLANNING.

ket information, product planning, pricing, physical distribution). Environmental marketing means integrating environmental issues into all these elements and thus broadens the customer-oriented marketing philosophy with clear targets and functions both on the societal and company level (Juslin, 1994; 1995). The core of environmental marketing is the marketing strategy — the strategic decisions in which the environmental issues are emphasised in product decisions, and environmental strengths are used as a competitive advantage. Implementation of the strategies is not possible without structures taking environmental issues into account. For example, environmental management systems (EMS) are the procedures (structures) through which the daily work of the organisation is accomplished. Environmental marketing functions should not be independent but obtain their objectives from marketing strategies (Juslin, 1994; 1995). Interesting interfaces in this hierarchical model of environmental marketing planning can be found also with Banerjee’s (1999) ideas in his framework of corporate environmentalism. However, in order to

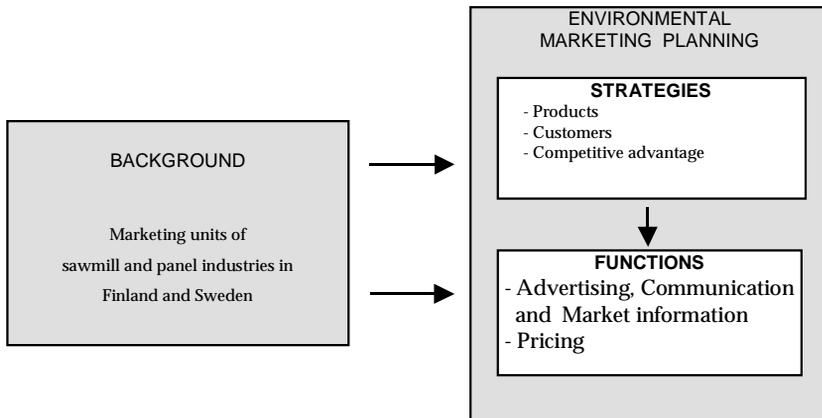


FIGURE 2. THEORETICAL FRAMEWORK OF THE STUDY.

avoid mixed use of the term ‘strategy’, Juslin’s model clearly defines ‘marketing functions’ whereas Banerjee talks about ‘functional strategy’.

The hierarchy of the model is demonstrated in the right part of the theoretical framework of the study (Figure 2). According to this model, environmental marketing functions (e.g. advertising) must be based on genuine strategies emphasising environmental issues. In this study, only the strategic and functional level decisions related to environmental issues are examined. The role of timber certification in this theoretical frame of reference is seen as a potential communication tool (marketing function) of environmental marketing. The left part of the framework (background) refers to the source of empirical data in this study and examining whether environmental marketing differs between sawmill and panel industries in these two countries.

Operationalisation of Environmental Marketing Strategies

In *environmental product decisions*, environmental friendliness is regarded as a product characteristic that is examined throughout the life of the product. In *environmental customer and market area decisions* a company aims to satisfy the needs of environmentally conscious customers, and therefore actively tries to focus on such market segments. If a company does not have any environmental strengths it has no other choice but to try to avoid environmentally

sensitive customers and market areas and focus on other segments instead. *Environmental friendliness as a competitive advantage* is often dependent on the natural circumstances of a company but it also requires goal-oriented work to develop the environmental marketing. (Juslin, 1994, 1995)

Operationalisation of Environmental Marketing Functions

Environmental arguments in *advertising* are perhaps the most visible part of environmental marketing. However, they should not be the main part but rather a logical and credible function of strategic and structural decisions. Environmental marketing will also set new challenges for the *personal communication and contacts* by salespeople. A systematic collection of relevant *market information* regarding environmental concerns in the markets will provide background information to support proactive strategic and structural decisions. Product planning and *pricing* should also reflect strategic decisions. For instance, a pioneer company offering environmentally oriented special or customer products may also achieve price premiums more easily than a company offering commodity products. (Juslin, 1994, 1995)

Propositions to Be Tested

The propositions are based on the theory of environmental marketing described in the previous section and the secondary material analysed in the introduction. Propositions 1 and 2 are based on the secondary material describing environmental debate within the European forest sector. Proposition 3 tests the hierarchy of the model of environmental marketing. Environmental emphasis in the marketing functions (e.g. advertising, communication) should reflect environmentally oriented decisions in the strategic level of marketing (product, customer and competitive advantage decisions).

- P1. As a reaction of increased environmental concerns in society and among customers, the Finnish and Swedish sawmill and panel industries have started the process of integrating environmental issues into their marketing planning.*

- P2. *Compared to Finland, the Swedish sawmill and panel industry emphasises environmental issues more in marketing planning.*
- P3. *The more environmental issues are emphasised in the strategic level of marketing, the more green influence can be seen in marketing functions, e.g. in advertising and communication.*

DATA AND ANALYSIS

Data Collection

The cross-sectional data for the study was collected by using standardised *personal interviews* with a structured quantitative questionnaire. Quota sampling was utilised with the objective of representative data for the strategic business units (SBU) of sawmill and wood based panel industries in Finland and Sweden. The targeted business units marketed their products independently and were accordingly considered independent marketing units (Juslin, 1992). Data collection occurred during the winter of 1997 in Finland and the fall 1998 in Sweden. The person with the highest responsibility in marketing planning within each unit was targeted.

The Finnish survey was conducted in the context of an EC-FAIR research project on SFM-certification (Rametsteiner *et. al.*, 1999). The equivalent data from Sweden was collected in order to make comparisons (Steineck, 1999). Table 1 shows the number of interviews and the estimated coverage of production in both countries. A detailed description of the data collection and the original questionnaire form are available in Rametsteiner *et. al.* (1999) and Steineck (1999).

Analysis

The dependent variables used in the analyses were statements using a five-point Likert scale, e.g. 1=Not important at all to 5=Very important, or from 1=No impact at all to 5=Strong impact (Tables 3 and 6). Frequency of some marketing procedures (Table 6) was measured using a four-point scale (Never—Occasionally—Often—Always). In the concluding univariate statistics, the two choices in the ends of the scale were used when interpreting magnitude of the

TABLE 1. NUMBER OF INTERVIEWS AND ESTIMATED COVERAGE.

Industry Sector	Interviewed		Estimated Coverage of Production	
	Finland	Sweden	Finland	Sweden
Sawmills and wood based panels, n=90	46	44	Sawmills: 70% of the production. Panels: 100% of the production	Sawmills: 65% of the production. Panels: 40% of the production

attitudes. Factor analysis (maximum likelihood) with varimax rotation of the factors was used to examine the dimensions of both strategic and functional level marketing decisions. The original variables describing marketing strategies and functions were condensed by factor analysis into a few interpretable combined factor score variables (Lewis-Beck, 1994). The reliability of the factor solutions was tested using the reliability coefficient Alpha. Indicative significance testing to compare the two countries was used although the sampling was not a purely random sampling, but closer to the total population. Divergence between the countries (independent variable) was analysed either by the χ^2 -test or by comparing the means of factor score coefficients using the t-test. Only statistically significant differences with associated p-values are reported in the results. Finally, correlation (Pearson) was used to analyse the relationships between marketing strategies and functions. (Bagozzi, 1994; Malhotra, 1993)

RESULTS OF THE STUDY

Decisions Concerning Marketing Strategies

Product Strategies

Strategic product decisions involve choosing the products the company will produce. The product characteristics and orientation, e.g. commodity product — special product — custom product, are defined in product strategies. Environmental friendliness may, for instance, be one characteristic that can convert a commodity product to a special product. Environmental friendliness in strategic product decisions is an emphasised product characteristic in both countries.

TABLE 2. RATING OF VARIOUS SOURCES OF ENVIRONMENTAL FRIENDLINESS DURING THE LIFE OF A COMPANY'S MAIN PRODUCTS.

Phase n=86	Mean of Point Allocation	Finland	Sweden	t-test p-value<
Raw materials used (good forest management etc.)	48	53	43	.008
Production technologies (energy, emissions, recycled content etc.)	21	21	21	.985
Consumption of product (safety, recyclability, efficient packaging etc.)	17	16	19	.090
Transport in the course of the life of the product	14	10	17	.001
Total	100	100	100	

About half of the respondents in both countries emphasise environmental friendliness in their strategic product decisions while only 13% do not emphasise it (Item 2 in Table 3). Almost two thirds of the respondents (65%) thought that a timber certification system would support their company's strategic product decisions. However, 13% estimated that it would not support product strategies to any extent (Item 6 in Table 3).

Environmentally friendly product characteristics in the life of wood products could include raw materials used, production technologies, product consumption, or transportation. Respondents were asked to allocate 100 points (percentages) among the four categories that could potentially be a source of environmental friendliness (Table 2).

Respondents clearly see "raw materials used" as the most likely source of environmental friendliness followed by production technologies. Still, there were differences between Finnish and Swedish companies. Some respondents, especially in Finland, commented that during recent years the emphasis on environmental friendliness has moved from production technologies to raw materials. The Finnish sawmill and panel industry places more emphasis on the role of raw materials ($p<.008$), and the Swedish industry on the transport ($p<.001$) and consumption ($p<.090$) of the product as a source of environmental friendliness.

Customer Strategies

Customer strategies typically describe what type of customer groups a company will focus on. On average, customers' environmental awareness had an important role in customer selection for 26% of the respondents while 50% did not consider it important (Item 3 in Table 3). Only a few Swedish companies considered it a very important selection criterion but the differences were not statistically significant.

TABLE 3. DIMENSIONS OF ENVIRONMENTAL MARKETING STRATEGIES IN FINLAND AND SWEDEN.

Dependent Variable, Scale 1-5, n= 85	Mean	Factor I	Factor II	h ²
1 How important is environmental friendliness when planning the competitive emphasis for your most important products and markets? (not important at all — very important)	3.1	.774	.112	.611
2 In your strategic product decisions, how much is the environmental friendliness of the product emphasised? (no emphasis at all —most emphasised characteristic)	3.4	.604	.137	.384
3 When selecting your most important customer group(s) how important is their level of environmental awareness in your decision making? (not important at all — very important)	2.6	.470	.072	.226
4 In your opinion, could good forest management be regarded as a source of competitive advantage? (absolutely not —definitely yes)	4.3	.210	.669	.492
5 Would you try to use certified raw material as a source of competitive advantage? (absolutely not — definitely yes)	3.8	.090	.621	.394
6 Would timber certification support your strategic product decisions? (would not support at all —would support fully)	3.7	.002	.434	.188
Eigenvalue (total = 2.296)		1.237	1.058	
Variance explained % (total = 37.3%)		24.9	12.4	
Reliability coefficient Alpha (of the highlighted variables)		.62	.55	

Competitive Advantage Strategies

Competitive advantage strategies typically define the relative marketing advantages pursued by a company. On average, 38% of the companies in both countries considered environmental friendliness to be important when planning the competitive emphasis for the most important products and markets while 24% of the companies did not consider it to be of importance (Item 1 in Table 3). A clear majority (88%) of respondents thought that good forest management could be regarded as a source of competitive advantage while 3% were slightly sceptical (Item 4 in Table 3). A majority (62%) estimated that they would try to use certified raw material as a source of competitive advantage while 16% of the companies would not try to do so (Item 5 in Table 3).

Dimensions of Marketing Strategies

Factor analysis was used to describe the dimensions of environmental marketing strategies by extracting two factors from the original six variables. These two dimensions of the marketing strategies with factor loadings, communalities and the means of individual variables are described in Table 3. The two factor maximum likelihood solution explains 37.3% of the total variation in this variable set.

In the case of *Factor I*, the heaviest loadings are found with environmental friendliness as competitive emphasis and with strategic product decisions. Thus, it was named "*Environmental emphasis in marketing strategies*". The heaviest loadings for *Factor II* are found in the potential for good forest management and with the use of certified raw material as source for competitive advantage. Thus, it was named "*Good forest management as a competitive advantage*". The divergence between the Finnish and Swedish sawmill and panel industries in these dimensions was studied by comparing the means of the factor scores using the t-test (Table 4).

The environmental emphasis in marketing strategies is nearly equal in both countries. On the other hand, the Swedish industry regards the role of good forest management as competitive advantage as slightly more important, though not statistically significant, compared to the Finnish industry ($p < .115$).

TABLE 4. DIVERGENCE OF ENVIRONMENTAL MARKETING STRATEGIES BETWEEN FINLAND AND SWEDEN.

Country n = 85	Environmental Emphasis in Marketing Strategies (StraFac1)		Good Forest Mngt. as a Competitive Advantage (StraFac2)	
	Mean	p-value<	Mean	p-value<
Finland	.038	.657	-.126	.115
Sweden	-.043		.142	

Decisions Concerning Marketing Functions

Communication and Market Information

According to the theory of integrated marketing planning, communicative marketing functions such as advertising, personal selling and the use of market information should be the logical consequences of strategic decisions (Proposition P3). Over one third (37%) of respondents thought that the impact of environmental issues has been strong both on advertising and on personal contacts/selling (Items 1 and 2 in Table 6). Many respondents said that environmental issues have often come out in informal discussions between supplier and customer rather than in formal business documentation. Two-thirds of the respondents said that they would use timber certification in advertising (Item 5 in Table 6).

The impact of environmental issues on advertising and communication campaigns (χ^2 -Prob<.015) and on personal contacts / selling (χ^2 -Prob<.047) is stronger in Finland. A rather surprising result is that the Finnish companies would clearly be more ready to use certification in advertising (χ^2 -Prob<.019).

On average, more than half the companies (55%) claimed that they often or always consider environmental issues in strategic planning (Item 12 in Table 6). Forty per cent reported to do so occasionally and only 5% never considered environmental issues. Two thirds of the companies reported to rarely or never carry out customer surveys for marketing (Item 4 in Table 6). Over half (56%) of the companies

rarely or never examined environmental information in their business decision making, while the rest did (Item 10 in Table 6). Inviting input from environmental or consumer's groups was not so common. However, a clear majority of the companies invite input from these groups at least occasionally (Items 3 and 11 in Table 6). Swedish companies are clearly more active in examining environmental information in business decision making (χ^2 -*Prob*<.042), as well as in inviting input from environmental groups (χ^2 -*Prob*<.009).

Pricing

In integrated marketing planning, product functions such as pricing should also implement strategic decisions. Up to now, environmental issues have had relatively little effect on pricing in both countries. Sixty per cent of the respondents said that environmental issues have had no impact at all (Item 8 in Table 6). Only a few Swedish companies estimated that they have had a very strong impact on pricing which may indicate individual cases of price premiums for certified products.

About 40% of respondents thought that there are only limited or no possibilities to get higher prices for certified products (Item 9 in Table 6). However, 35% believed that higher prices are possible. Almost half of respondents (42%) believed that environmental friendliness is a factor that could convert a commodity/ordinary product into a special product and that is reflected in the price while 34% did not think so (Item 6 in Table 6). When *purchasing* certified raw materials, respondents were asked to indicate the level of price increase they anticipated (Table 5).

Because the share of certified wood products on the market is very small it is understandably difficult to assess the expected price increase for certified raw materials. On average, 40% of respondents could not give any estimate for it.

For those that provided an answer, 18% believed that no price increase based on certification will occur. This opinion was stronger within the Swedish industry. However, about 40% of respondents who answered the question believed some kind of price increase in the purchasing of certified raw materials would occur. The respondents who

TABLE 5. EXPECTED PRICE INCREASE IN THE PURCHASING OF CERTIFIED WOOD RAW MATERIALS.

Expected Price Increase <i>n</i> =86, χ^2 =11.15, <i>df</i> =4, χ^2 -Prob<.025	%	Finland %	Sweden %
0%	18	9	27
1–5%	31	36	27
6–10%	7	4	10
11–15%	4	0	7
Above 15%	0	0	0
It is not relevant to define the share of timber certification in the price / Impossible to say	40	51	29
Total	100	100	100

believed in a price increase of over 5% were mainly Swedish. The proportion of companies that did not find it relevant to define the price increase or it was impossible to say, was higher in Finland.

Dimensions of Marketing Functions

Through the use of factor analysis, the dimensions of environmental marketing functions can be described by producing three factors from the original twelve variables. These three dimensions of the marketing functions explaining 44.9% of the total variation are described in Table 6.

Factor I gets its heaviest loadings from impact of environmental issues on advertising, communication campaigns and personal contacts / selling. Thus, it can be named “*Impact of environmental issues in communication*“. *Factor II* was labelled “*Belief in a price premium for environmentally friendly products*“ because its heaviest loadings are issues relating to possible price premiums for environmentally friendly or certified products. The heaviest loadings for *Factor III* were on examining environmental information and inviting input from environmental groups. It was therefore named “*Examining environmental information*“.

TABLE 6. DIMENSIONS OF ENVIRONMENTAL MARKETING FUNCTIONS IN FINLAND AND SWEDEN.

Dependent variable, Scale 1-5, n= 78	Mean	Factor I	Factor II	Factor III	h ²
1 What impact have environmental issues had on advertising and communication campaigns? (no impact at all - strong impact)	2.9	.834	.001	.215	.742
2 What impact have environmental issues had on personal contacts / selling? (no impact at all - strong impact)	3.1	.694	-.008	.242	.540
3 How often does your company invite input from consumers groups when making environmental business decisions? (Scale: 1-4: never — occasionally — often — always)	1.8	.475	.324	.115	.344
4 How often does your company carry out customer surveys for marketing planning? (Scale: 1-4: never— occasionally — often — always)	2.3	.464	-.018	.113	.228
5 Would you try to use timber certification in your advertising? (definitely not — definitely yes)	3.6	.444	.121	.063	.216
6 Environmental friendliness can convert an ordinary product into a special product and that reflects the price (completely disagree — completely agree)	3.0	.020	.956	.114	.927
7 Certification leads to a price premium for the product in question (completely disagree — completely agree)	2.9	.212	.703	-.060	.543
8 How strong an impact have environmental issues had on the pricing of your products? (no impact at all — strong impact)	1.7	.233	.279	.198	.171
9 It is not possible to get a higher price for environmentally friendly products (completely disagree—completely agree)	3.1	.047	-.273	-.104	.088
10 How often does your company examine environmental information in business decision making? (Scale: 1-4: never—occasionally—often—always)	2.4	.246	.169	.840	.795
11 How often does your company invite input from environmental groups when making environmental business decisions? (Scale: 1-4: never— occasionally—often—always)	1.8	.110	.202	.603	.417
12 How often does your company consider environmental concerns in strategic planning? (Scale: 1-4: never — occasionally—often—always)	2.6	.254	-.036	.559	.378
Eigenvalue (total = 5.388)		2.054	1.751	1.583	
Variance explained % (total = 44.9%)		18.6	19.0	7.3	
Reliability coefficient Alpha (of the highlighted variables)		.74	.77	.68	

TABLE 7. DIVERGENCE IN ENVIRONMENTAL MARKETING FUNCTIONS BETWEEN FINLAND AND SWEDEN.

Country n = 78	Impact of Env. Issues in Communication (FuncFac1)		Belief in a Price Premium (FuncFac2)		Examining Env. Information (FuncFac3)	
	Mean	p-value<	Mean	p-value<	Mean	p-value<
Finland	.202	.016	-.019	.839	-.298	.0002
Sweden	-.291		.027		.429	

The results of the *t*-test (Table 7) with the means of factor scores indicate that the Finnish industry perceives the impact of environmental issues to be stronger on advertising, communication and personal selling ($p < .016$). Swedish companies examine environmental information and invite input from environmental groups in environmental business decisions to a much greater extent than the Finnish companies ($p < .0002$). Belief in a price premium for environmentally friendly products was equal in both countries.

Testing the Propositions

P1. Finnish and Swedish sawmill and panel industries have started the process of integrating environmental issues into their marketing planning.

The findings of the univariate examination (distributions and means described within the results describing environmental marketing strategies and functions) support P1. This applies at least for the majority of the industries. Impact of environmental issues in marketing planning can be seen on both strategic and functional levels. On the strategic level, environmental issues are most emphasised on product decisions (mean=3.4) and in planning the competitive emphasis (mean=3.1). Within communicative marketing functions, the impact of environmental issues has been strongest on personal contacts/selling (mean=3.1) and in intention to use timber certification in advertising (mean=3.6).

P2. Compared to Finland, the Swedish sawmill and panel industry emphasises environmental issues more in marketing planning.

Determining the level of support for P2 is complicated because of mixed findings. The findings support P2 regarding examination of environmental information (χ^2 -*Prob*<.042), and especially inviting input from environmental groups in business decision making (χ^2 -*Prob*<.009). Swedish companies are clearly more active in that. On the other hand, Finnish companies assessed the impact of environmental issues in communication (advertising, personal selling) to have been stronger than Swedish companies (*p*<.016). Regarding environmental emphasis in marketing strategies, no difference occurred between the two countries (Table 4). The findings support P2 only concerning examination of environmental information and connections with ENGO's (Table 7).

P3. The more environmental issues are emphasised in the strategic level of marketing, the more green influence can be seen in marketing functions, e.g. in advertising and communication.

According to the principles of environmental marketing, marketing functions put strategic level decisions into practice. The greater the emphasis on environmental issues in the strategies, the more clearly it should be reflected in these functions. Timber certification could also be a tool (marketing function) for carrying out the marketing strategies of a company. The correlation among different dimensions of marketing strategies and functions were examined to test proposition P3 (Table 8).

TABLE 8. CORRELATION MATRIX OF FACTOR SCORES FROM ENVIRONMENTAL MARKETING STRATEGIES AND FUNCTIONS (SIGNIFICANT CORRELATIONS (*P*<.05) IN BOLD TYPE).

Env. emphasis in marketing strategies (StraFac1)	1.000				
Good forest mngt. as a comp. adv. (StraFac2)	.113	1.000			
Impact of env. issues in communic. (FuncFac1)	.418	.153	1.000		
Belief in a price premium (FuncFac2)	.098	.401	.002	1.000	
Examining env. information (FuncFac3)	.267	.191	.106	.032	1.000
	StraFac1	StraFac2	FuncFac1	FuncFac2	FuncFac3

The environmental emphasis in marketing strategies can be seen in the use of environmental issues in the marketing communication as well as in the collecting of environmental information. The potential of good forest management as a source of competitive advantage correlates with the belief in a price premium for environmentally friendly products, and the collection of environmental information. These findings support P3 and thus contribute to the development and validation of the model of environmental marketing.

IMPLICATIONS AND CONCLUSIONS

The Finnish and Swedish sawmill and wood-based panel industries have started the process of integrating environmental issues into their business and marketing management. About half of the surveyed companies emphasise environmental issues in their strategic business decisions. They also regard environmental issues as a potential source of competitive advantage. Timber certification would support strategic product decisions in almost two thirds of the companies. Findings suggest that, generally, customer environmental awareness has little effect on customer selection because companies naturally want to maintain their traditional customer base. However, some Swedish companies saw it as an important selection criterion. This is probably a result of increasing demand for certified products and the ability of some Swedish companies to satisfy this customer segment. The potential of good forest management and certification as a source of competitive advantage was clearly accepted in both countries. No divergence between the two countries occurred in the level of integrating environmental issues into strategic level decisions. Even though there was a difference in the time of data collection in the two countries, cautious conclusions regarding the country comparison are relevant because of good coverage of the survey.

It should be noted that at the time of data collection, the debate about a system suitable for Finland was strong while in Sweden many large companies had already incorporated a certification system. This could explain why Finnish companies emphasise more the role of raw materials used as a source of environmental friendliness during the life of

wood-based products. The results of the Swedish survey often showed a very heterogenic pattern with scores gathered around two extremes. This may be explained by the structural difference in the Swedish forest sector. Large companies owning forest resources represent one group and private sawmills, buying their wood raw material outside of the company, represent the other. From a practical view, private sawmill companies in Sweden often felt unable to demand certified raw material from suppliers.

Regarding marketing functions, environmental issues can most clearly be seen in marketing communication. Surprisingly, the impact of environmental issues in communication seems to have been stronger among Finnish companies. Possibly, the integration of environmental issues into marketing functions occurred earlier in Sweden than Finland. This could also explain the finding that Swedish companies examine environmental information and invite input from environmental groups much more actively than Finnish companies. Respondents saw little impact of environmental issues on pricing. However, about 40% in both countries believed in a price premium for environmentally friendly products.

Irrespective from the different time of data collection in the two countries, the results are particularly interesting regarding the development of the theory of environmental marketing. The results of testing proposition P3 support the idea of Juslin's model of environmental marketing suggesting that genuine environmental marketing functions must be based on strategies emphasising environmental issues. Thus, the findings contribute to the validation of Juslin's model and the development of the theory of environmental marketing. Additionally, the model of environmental marketing and its operationalisation used in this study can be applied to any industry sector.

Based on the results presented in this paper, it can be said that environmental issues are central in the marketing strategies of Finnish and Swedish sawmill and panel industries and the companies cannot be blamed for 'greenwashing'. On the other hand, it must be said that they are not the most central issues. Apparently, integrating environmental issues in marketing planning is not a genuine proactive strategic decision. The industry has been forced

to do it by outside pressures. Differences among business units even within the same company may reflect different market segments, but also show that the environmental business philosophy is not uniform across units. Sophistication of integrating environmental issues into marketing planning could be improved and the level of strategic decisions deeper if genuine environmental responsibility is regarded important. The industry should work in this direction to gain more substance behind its environmental marketing functions. This aspect of the study findings is the most important lesson to be learned for marketers in all sectors.

REFERENCES

- Anon., 1998. Forest Certification Brings Advantage in the Market Place. *Timber & Wood Products International*, 26, September 1998.
- Bagozzi, R. P. (ed.), 1994. *Principles of Marketing Research* (Cambridge, Mass.: Basil Blackwell Ltd.).
- Banerjee, S. B., 1999. Corporate Environmentalism and the Greening of Strategic Marketing. In *Greener Marketing — A Global Perspective on Greening Marketing Practice*, edited by M. Charter & M. Polonsky (Sheffield, UK: Greenleaf Publishing), 16–40.
- Chadwick, P., Garrod, B & Larsson, N. 1996. Integrating Environmental Issues into Business Strategy: The Experience of Sweden. *Greener Management International*, 16, 61–75.
- Forest Certification in Finland. Finnish Forest Association. <http://www.smy.fi/certification/eng/index.htm>
- Ghazali, B. & Simula, M., 1997. *Timber Certification: Progress and Issues*. ITTO. October 1997. Kuala Lumpur - Helsinki.
- Halla, T., 1998. Metsä-Serla tarvitsee tapettiin FSC-merkin Isossa-Britanniassa. *Maaseudun Tulevaisuus*, 9.10.1998.
- Hansen, E. & Juslin, H., 1999. *The Status of Forest Certification in the ECE Region*. Geneva timber and Forest Discussion Papers 14. United Nations, New York and Geneva.
- Juslin, H., 1992. Forest Products Marketing: A Theoretical Model and Its' Empirical Application. Case: The Finnish Forest Industry. In *Proceedings of IUFRO ALL Division 5 "Forest Products" Conference. August 23-28, 1992*. Nancy, France., 793–803.
- Juslin, H., 1994. Integrating Ecological Issues in the Strategic Marketing Planning. In *What is Determining International Competitiveness in the Global Pulp and Paper Industry? Proceedings of the*

- Third International Symposium. September 13–14, 1994.* Seattle, Washington. University of Washington College of Forest Resources, Centre for International Trade in Forest Products (CINTRAFOR),. 327–338.
- Juslin, H., 1995. Metsäteollisuustuotteiden ekologinen markkinointi (Ecological Marketing of Forest Products). In *Metsäteollisuuden vihreät markkinat (Green Markets of Forest Industry)*, edited by K. Valtonen, H. Juslin and P. Laine Metsäntutkimuslaitoksen tiedonantoja (Finnish Forest Research Institute, Research Papers), 578, 117–138.
- Lewis-Beck, M.S. (ed.), 1994. *Factor Analysis and Related Techniques* (London: SAGE Publications, Toppan Publishing).
- Luukkonen, I., 1999. Stora Enso hylkäsi FSC-sertifikaatin. *Maaseudun Tulevaisuus*, 25.3.1999.
- Malhotra, N. K., 1993. *Marketing Research. An applied Orientation* (Englewood Cliffs, New Jersey: Prentice-Hall International Editions).
- Martikainen, P., 1994. *Strategic Marketing Planning in the Finnish Forest Industries: A Theoretical Marketing Planning Model and Its Empirical Testing.* University of Helsinki. Department of Forest Economics. Reports 3.
- McDonagh, P. & Prothero, A., 1997. (ed.). *Green Management. A Reader* (London: The Dryden Press).
- Menon. A. & Menon. A., 1997. Enviropreneurial Marketing Strategy: The Emergence of Corporate Environmentalism as Market Strategy. *Journal of Marketing*, 61 (January), 51–67.
- Niemelä, J., 1993. Marketing-oriented Strategy Concept and its Empirical Testing with Large Sawmills. *Acta Forestalia Fennica*, 120. The Society of Forestry — The Finnish Forest Research Institute.
- Niemelä, J. & Smith, P., 1996. A Cross-National Investigation of Softwood Sawmill Marketing Strategies. *Forest Science*, 42 (3), 290–299.
- Nikula, P., 1998. Suomen paineet ympäristösertifiointiin kasvavat. *Kauppalehti*, 29.9.1998.
- Nyström, H., Smeder, B. & Mark-Herbert, C., 1997. *Miljöstrategier för product och företagsutveckling i Svensk skogsbaserad industri.* Swedish University of Agricultural Sciences (SLU). Department of Economics. Report 110.
- Ottman, J. A., 1993. *Green Marketing: Challenges & Opportunities for the New Marketing Age* (Lincolnwood, USA: NTC Business Books).

- Ovaskainen, O., 1999. <http://www.luontoliitto.fi/metsa/otsonpuhe.html>
- Palokallio, J., 1999. Brittiläinen B&Q hyväksyy suomalaisen puutavaran. *Maaseudun Tulevaisuus* 5.8.1999.
- Peattie, K., 1995. *Environmental Marketing Management: Meeting the Green Challenge* (London: Pitman Publishing).
- Polonsky, M. & Mintu-Wimsatt, A. (ed.), 1995. *Environmental Marketing — Strategies, Practice, Theory, and Research* (New York-London: The Haworth Press).
- Rametsteiner, E., Pajari, B. and Peck, T. (ed.), 1999. *Potential Markets for Certified Forest Products in Europe. Results of Extensive European Market Research Conducted in the Context of an EC-FAIR Research Project on SFM-Certification*. EFI Proceedings no. 25. European Forest Institute. Joensuu, Finland.
- Repo, H., 1998. AssiDomän taktikoi ketterästi sertifioinnilla. *Teknikka&Talous* 8.10.1998.
- Rosander J., 1998. Marketing director, STORA. Interview on 20.10 1998.
- Steineck, F., 1999. *Forest Certification as a Marketing Tool for the Swedish Forestry Wood-chain*. Department of Forest Economics, University of Helsinki (M.Sc. thesis.).
- Vallejo, N., 1996. *Potential Economic, Social and Environmental Impacts of Certification*. Paper for the conference on economic, social and political issues in certification of forest management. Malaysia, May 12—16, 1996. <http://www.forestry.ubc.ca/concert/vallejo.html>
- Wehrmeyer, M., 1999. Reviewing Corporate Environmental Strategy. In *Greener Marketing – A Global Perspective on Greening Marketing Practice*, edited by M. Charter and M. Polonsky, (Sheffield, UK: Greenleaf Publishing), 41–56.