Environmentally certified wood products: Perspectives and experiences of primary wood manufacturers in Wisconsin

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Abstract

Certification of forests and wood products has received worldwide attention in recent decades. This study examined certification's salience and ability to provide incentives as reported by primary wood manufacturers in Wisconsin. Self-administered questionnaires were mailed in February 2003 to 392 firms in this classification. Adoption levels and perceptions of certified wood products reported by responding firms were examined. Most firms were not chain-of-custody certified. Further, a majority of firms reported being unfamiliar with it. Price premiums on certified product offerings, increased market share and access, as well as operational and managerial improvements were not perceived by most respondents as realized benefits of becoming chain-of-custody certified. Some firms reported they had gained new knowledge and perceived enhanced credibility with the public by becoming certified.

Stakeholders, including consumers and environmental groups, have expressed concern regarding the forest industry's ability to carry out sustainable forest management (Berg and Olszewski 1995). In addition, consumers have become skeptical of corporate environmental claims (Hansen 1997). Beginning in the mid 1980s, media reports highlighting forest devastation in tropical rainforests, and the spotted owl debate in the U.S. Pacific Northwest caught the attention of non-governmental organizations and members of the general public (Hansen 1998, Gronroos and Bowyer 1999). In partial response, concerned groups and individuals held meetings that led to the formation of mechanisms for identifying, monitoring, and assessing sustainable forest management (Forest Stewardship Council 2003). Simultaneously, the forest products marketplace continued to globalize, and forest certification has been proposed as a plausible positioning solution for stakeholders involved with forest management, forest products manufacture, and forest products consumption (Fletcher et al. 2002). Forest and chain-of-custody certification are systems through which landowners and the forest industry may validate claims of sustainable forest stewardship and wood utilization (Stevens et al. 1998). Since 1993, many certification systems have been established. Many systems have experienced revisions and modifications, while others have disbanded (Fletcher et al. 2002). The result has been a dynamic certification arena.

Some environmental certification systems include two components: forestland certification and chain-of-custody certification. Forestland certification applies to forest management and forested landholdings while chain-of-custody certification (though not included in all systems) is designed to track trees sourced in certified forests from harvest through subsequent processing and distribution channels to end consumers. Alone or in com- bination, forest and chain-of-custody cer- tification is designed to provide verified assurances of responsible forest stewardship and wood utilization (Bass 1997). The adoption of a certification system may afford forestland managers, forest products manufacturers, and distributors with opportunities for increased credibility and competitive marketplace advantages such as price premiums and

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access to new markets (Hansen 1998). Certification's ability to both satisfy forest management concerns and provide incentives is debated.

Although numerous studies regarding certified forest products' expected outcomes have been conducted with various populations and geographic locations, data for Wisconsin on this topic are limited. Few studies have examined the experiences or perceptions of primary wood manufacturers who bridge the gap between forest management and consumptive distribution channels. This study examined this segment (a group including sawmills, primary veneer mills, chip plants, pulp mills, post and pole manufacturers, hardboard and particleboard firms) in an effort to identify certification's salience in Wisconsin's wood products industry and marketplace.

Objectives

Three primary objectives were established for this study. To guide the analysis, proposition statements were developed for each objective.

Objective 1: To ascertain the awareness, perceptions, and experiences with environmentally certified wood products currently held by Wisconsin's primary wood manufacturers.

P_1: The majority of Wisconsin's primary wood products manufacturers are familiar with chain-of-custody certification.

P_2: The majority of Wisconsin's primary wood products manufacturers are not chain-of-custody certified.

P_3: Certified forest products are not perceived favorably by a majority of primary wood products manufacturers.

P_4: Companies that are chain-of- custody certified are similar to each other.

Objective 2: To determine if chain-of-custody certified status affords wood products firms in Wisconsin benefits, including increased market share, access to new markets, price premiums on certified product offerings, increased credibility with the public, improved company operations, or improved company management.

P_5: The majority of firms have not experienced increased market share by becoming chain-of-custody certified.

P_6: The majority of firms have not experienced access to new markets by becoming chain-of-custody certified.

P_7: The majority of firms do not receive price premiums on certified wood products they offer.

P_8: Chain-of-custody certified wood products have not increased company credibility with the general public.

P_9: Improved company operations are not a result of certified status.

P_{10}: Improved company management is not a result of certified status.

Objective 3: To ascertain why non-certified primary wood manufacturers have chosen not to adopt chain-of-custody certification.

P_{11}: Non-certified firms do not perceive potential marketplace advantages by adopting chain-of-custody certification.

P_{12}: The knowledge and awareness of chain-of-custody certification is a barrier to its adoption by non-certified firms.

Methodology

Population and sample frame

The initial population consisted of 407 firms listed in *Wisconsin's Primary Wood Using Industry Directory 2002* (Wisconsin Department of Natural Resources 2002). Viable mailing address checks and verification of firms still in business were conducted through phone calls with state experts, direct calls to listed firms, and searches using Internet-based services. Eleven firms were removed due to bad addresses or because no further contact information could be obtained. One firm indicated it was going out of business and three were found double listed. The adjusted sample was 392 firms.

Individuals employed by companies in the sample frame who had the greatest knowledge of their organization were considered the most desired respondents. Previous studies with similar populations suggested respondents could be found at corporate or upper management levels (Vlosky and Ozanne 1998). Individuals meeting these criteria were identified in one of three ways: primary contact names listed in the directory, names suggested by a state-employed wood products expert, or through direct phone conversations with companies.

Data collection

A self-administered questionnaire was constructed in November and December of 2002. The questionnaire was in booklet form, 8 pages in length, and contained 34 questions. The final page served as a business reply mailer. Questions were largely designed to collect categorical and attitudinal data. Attitudinal questions were posed as a battery of statements to which respondents were asked to rank their levels of agreement using a 5-point Likert scale where 1 = strongly agree, 2 = somewhat agree, 3 = neither agree nor disagree, 4 = somewhat disagree, and 5 = strongly agree. Open-ended responses were used to make response categories exhaustive but were limited overall to reduce respondent burden. Respondents were provided with the following definition on the first page of the questionnaire: "Chain-of-custody certification is the process by which logs harvested from certified forests are documented and tracked from their source through processing and distribution channels to end consumers." The questionnaire was reviewed and pretested by experts at the University of Wisconsin-Madison, University of Wisconsin-Stevens Point, Wisconsin Department of Natural Resources, USDA Forest Service Northeastern Research Station, USDA Forest Products Laboratory, and a chain-of-custody certified sawmill in Wisconsin.

The questionnaire was administered through a mail survey implemented from February to April of 2003. Survey execution was closely modeled after Dillman's Tailored Design Method (Dillman 2000). Five contact mailings, including a financial incentive, were used to maximize response rates. In the order mailed these were: prenotification letter, initial questionnaire mailing (with cover letter and 2-dollar bill), thank you/reminder postcard, replacement mailing (with cover letter), and a final contact postcard. All letters and postcards were hand signed in blue ink. Respondents were assured confidentiality and asked to fill out the questionnaire based on the experiences of their respective companies, not from personal perspectives.

Data analysis

Survey data were coded then entered and analyzed in a database created using the Statistical Package for Social Sciences (SPSS). The scale and categorical data are presented largely as frequency distributions. Additionally, the Likert scales used were treated as interval in nature, allowing for mean-based statistical comparisons (Coombs et al. 1970, Aaker et al. 1998).

Response

Of the 392 questionnaires mailed, 239 were used in the analysis. Thirteen questionnaires were returned as undeliverable with no further contact information; 33 companies reported they were no longer in business and 5 others were returned indicating the self-employed respondent was deceased. These 51 companies reduced the sampling frame to 341. The adjusted response rate was 70.1 percent (239 of 341). Several large firms with multiple locations indicated a willingness to fill out only one questionnaire on behalf of the company at large. The decision to sample all firms listed in the directory was made *a priori*. Therefore, these known non-respondents were not removed from the sample frame. Response rates for industrial studies of this type typically range from 15 to 30 percent (Vlosky and Ozanne 1998) making the response rate achieved in this study very good.

Non-response bias

A hazard associated with survey research is non-response bias. If non-respondent companies share attitudes, beliefs, and perceptions that systematically differ from those that did respond, erroneous conclusions regarding the population are likely. Comparing early (initial) respondents to respondents of follow-up mailings (later respondents) is one method of testing for such bias (Armstrong and Overton 1977). Checks for non-response bias were conducted using this method. Responses to four statements were compared between the first 30 (early) questionnaires received and the final 30 (late) questionnaires. Independent samples t-tests for each statement confirmed statistical insignificance ($\alpha = 0.05$). Results are therefore considered generalizable to the population.

Results and discussion

The stated objectives and associated proposition statements are examined in order. Some statements seek to identify a "majority." In this context, majority is defined as greater than 50 percent of respondents for the criteria under investigation.

Objective one

To ascertain the awareness, perceptions, and experiences with environmentally certified wood products currently held by Wisconsin's primary wood manufacturers, four proposition statements were examined.

Respondents were asked directly if their companies were chain-of-custody certified. Of the 239 responding firms, 5 percent (13 companies) reported that they were chain-of-custody certified. By reason, this indicated a high level of familiarity for those companies. The 226 companies that were not chain-of- custody certified were asked to indicate if they were very familiar, somewhat familiar, or not at all familiar with it. Sixteen percent of the companies (including those currently certified) were very familiar with chain-of-custody certification. Thirty percent of the respondents indicated being somewhat familiar and the remaining 54 percent reported they were not at all familiar. The data do not support proposition one (P_1) that the majority of Wisconsin's primary wood products manufacturers are familiar with chain-of-custody certification. Recall, only 13 of 239 companies indicated they were chain-of-custody certified. It follows that P_2 (The majority of Wisconsin's primary wood products manufacturers are not chain-of-custody certified) was supported, because 95 percent of the companies were not chain-of-custody certified.

To aid understanding of how certified forest products were perceived by respondents, four statements were posed asking firms to indicate their level of agreement on a 5-point Likert-type scale.

Forty-three percent of the firms contacted in this study had some positive level of agreement with the statement: "Fundamentally, certified forest products are a good idea." Conversely, 22 percent did not agree with the statement. Although sizeable, 43 percent fails to constitute a majority as defined for this study (greater than 50 percent of respondents). The 35 percent who neither agreed nor disagreed likely lacked knowledge about certification as evidenced in the previous findings. Respondents were not provided definitions of "the fundamentals of certification." This was a deliberate choice aimed at further exploring the knowledge of the subject held by this group.

Similar results were found for the second statement: "Certified forest products help to prove a company's positive commitment to the environment." More firms indicated positive levels of agreement than the more negative levels (38% and 24%, respectively). Noteworthy is that some firms perceived certification to be a potential tool for credibility and communication. Defining a majority as more than 50 percent, however, P_3 was not supported.

Firms were then asked whether they felt the costs of becoming chain-of-custody certified were worth it. Two statements were identical, with the exception that wording was altered to accommodate respondents, depending on certified status. Specifically, the first statement used "would" for non-certified firms, while the second used "are" for those that were certified. Forty-four and 18 percent of the non-certified firms strongly and somewhat disagreed, respectively. Only 4 percent responded strongly or somewhat agree and 34 percent indicated neutrality. Convincingly, non-certified companies did not feel the costs of attaining such status would be worth it. Of the 13 chain-of-custody certified firms, 31 percent strongly disagreed that the costs of becoming chain-of-custody certified were worth it. Another 8 percent somewhat disagreed. None of these firms reported strongly agreeing but 15 percent somewhat agreed. Forty-six percent neither agreed nor disagreed. Noteworthy is that the majority of companies that had engaged in certification costs did not feel they were worth it.

Anecdotal evidence supporting P_3 that certified forest products are not perceived favorably by a majority of respondents was obtained in open-ended responses reported at the conclusion of the questionnaire. Several recurring themes emerged. First, the notion that environmental certification will be around for awhile but disappear over time was expressed. Many firms indicated that certification is likely "a smoke and mirrors game." Others added that too many people are disconnected from the sources of their forest products to understand "good" or "sustainable" forestry. Another common sentiment was that such programs represent extra costs and administrative hardships with no potential return or compensation for participating firms. Finally, many respondents felt they were already responsibly manufacturing and sourcing wood. These firms felt it unnecessary to pay outside organizations for a "blessing" of good stewardship.

The demographics of chain-of-custody certified firms

Four variables were examined to assess whether chain-of-custody certified firms shared similar characteristics or profiles (P_4): company size expressed as a function of total employees, the number of years a company reported having been in business, wood products manufactured

Table 1. — Customers of Wisconsin's chain-of-custody certified primary wood manufacturers.[a]

Customer classification	Frequency	% of respondents
Furniture manufacturer	8	61.5
Lumber wholesaler	8	61.5
Lumber broker	8	61.5
Flooring manufacturer	7	53.8
Cabinet manufacturer	7	53.8
Pallet manufacturer	6	46.1
Door manufacturer	6	46.1
Molding manufacturer	6	46.1
Paper manufacturer	6	46.1
Lumberyard	5	38.4
Retailer	5	38.4
General public	5	38.4
Builder	5	38.4
Window manufacturer	4	30.7
Veneer manufacturer	4	30.7
Panel manufacturer	3	23.0
Surfaced lumber manufacturer	3	23.0
Architect	2	15.3
Building products distributor	1	7.6

[a]Multiple responses were possible; n = 13.

for sale, and customers they sold their wood products to.

It was assumed that greater numbers of employees correlated with larger company production and size. Thirty-eight percent (5 respondents) indicated working for firms that employed between 10 and 25 full- or part-time employees, making it the dominant classification. Seven percent (1 firm each) were classified into each of 4 employee categories: less than 10, 26 to 50, 151 to 300, or greater than 300 employees. Fifteen percent (2 firms) were classified into each of the remaining two categories: between 51 to 75 and 76 to 150 employees.

The number of years chain-of-custody certified firms reported having been in business ranged from 2 to 100 with the median being 25.

Certified green hardwood lumber was offered by 53 percent of the chain-of-custody certified firms, making it the dominant certified material manufactured for sale. Following in ranked order were kiln-dried hardwood lumber (46%), both green and kiln-dried softwood lumber, and chips (38% each).

These products are consistent with the customer bases indicated by respondents (**Table 1**). Respondents identified lumber brokers, lumber wholesalers, and furniture manufacturers as the dominant customers of their certified material. Paper and pallet manufacturers are reported by half the responding firms. The presence of pallets is likely a direct reflection of the sheer volume it represents in Wisconsin wood manufacture. Some certified firms, for example, may produce higher value products initially but carry certified status through vertical integration and product mix.

The four company profile criteria used to examine similarities between the 13 certified manufacturers in this study suggest that a chain-of-custody certified primary wood manufacturer in Wisconsin likely employs between 10 and 25 full- or part-time employees, has been in business about 25 years, certifies primarily hardwood and softwood lumber (both green and kiln dried) as well as chips, and sells its certified wood products principally to lumber brokers, lumber wholesalers, and/or furniture, flooring, and cabinet manufacturers.

Objective two

The second objective of this study was to determine if chain-of-custody certified status afforded respondent firms benefits, including increased market share, access to new markets, price premiums on certified product offerings, increased credibility with the public, improved company operations, and improved company management. Six proposition statements were used to guide analysis. Only the experiences reported by the 13 chain-of-custody certified primary wood manufacturers were relevant for this objective and were assessed accordingly.

To assess whether market share increased as a result of chain-of-custody certification (P_5), respondents were asked to indicate their level of agreement (5-point Likert scale) with two statements. Market share was treated as a function of the relative number of customers or increases in sales that a company attributed to chain-of-custody status. For the statement: "Chain-of-custody certification has given my company more customers," 46 percent of the firms indicated either strongly or somewhat disagree while 31 percent somewhat or strongly disagreed. Taken together with those who indicated a neutral level of agreement (23% of respondents) the data suggest nearly one-third of the firms felt chain-of-custody certification had afforded them more customers. Companies were then asked to respond to the statement, "Chain-of-custody certification has meant more sales volume for my company." None of the respondents indicated "strongly agree." Nearly 31 percent somewhat agreed while 39 percent voiced levels of disagreement. The conclusion is that generally firms do not feel chain-of-custody has translated into more sales volume.

Proposition six, which states that the majority of firms have not experienced access to new markets by becoming chain-of-custody certified, was addressed directly. Respondents were asked if they had experienced access to new markets by becoming chain-of-custody certified. Forty-six percent of the firms indicated they did not feel certification had provided them access to new markets while 31 percent reported it had. The proposition, therefore, was supported as greater than 50 percent were categorized in levels of no agreement or disagreement. The data exhibit evidence that should not be ignored: though still the minority, chain-of-custody status has provided some companies access to new markets.

Price premiums on certified wood products have been touted as a potential benefit for those adopting chain-of-custody certification. Premiums are attractive because they stand to offset costs associated with attaining certified standing and to bolster company revenue. Responses to the statement: "Chain-of-custody allows

Table 2. — Benefits of chain-of-custody certification reported by chain-of-custody certified respondents.[a]

Benefit	Frequency	% of respondents
No further benefits have been realized	9	100
New knowledge	4	44.4
Support from accreditor	3	33.3
Use of an Ecolabel on product offerings	2	22.2
Improved employee safety	2	22.2
My company has become more competitive	1	11.1
Improved material tracking	0	0
My company has become more profitable	0	0
Improved employee morale/sense of pride	0	0
Better inventory control	0	0
Other	0	0

[a]Multiple responses were possible; $n = 9$.

my company to charge more money (a premium) for the certified product(s) it offers provided strong evidence against the realization of premiums for this group. Specifically, 62 percent of the chain-of-custody certified respondents indicated they strongly disagreed, while another 8 percent somewhat disagreed that they could obtain premiums on certified wood. Alternatively, no respondents indicated "strongly agree" and only one responded "somewhat agree." Despite the neutral stance of three firms (23%), the stated proposition is supported: the majority of respondents do not receive price premiums on certified wood products they offer. Exploring further, respondents were asked, "Does your company charge more money for any of its certified wood product(s) than it does for other non-certified products?" Only one firm reported charging more money (20% more) on its certified products.

Increased credibility with the public may be another potential benefit of certification. For the statement, "Chain-of-custody certification has created better public relations for my company," 23 percent of firms disagreed with the statement, 31 percent were neutral, and 47 percent had some positive degree of agreement. The results failed to support P_8 that chain-of-custody has not increased company credibility with the public as perceived by these firms. On the contrary, the results suggest that firms desiring increased credibility may attain it with the adoption of certification.

Exploring further, it was of interest to determine if improved company operations were perceived to be a result of attaining certified status. Company operations as discussed here can be thought of as the equipment and efficiency a particular manufacturer possesses to optimize such tasks as raw material procurement, log sorting, inventory control, production times, equipment availability, and reliability of that equipment. In essence, the equipment and knowledge needed to provide a smooth flow of wood products production. Operations in the sense of accounting processes, record keeping, and similar procedures were not explicitly addressed in the questionnaire. Respondents were provided exhaustive response categories including "Other(s)" if such criteria were deemed significant to their respective companies.

The question, "Has your company made equipment upgrades (purchased or replaced equipment) to meet chain-of-custody certification standards?" resulted in 2 "Yes" responses, while 11, or nearly 85 percent, answered "No." Neither of the two yes respondents answered a follow-up question asking how much it had cost them to make equipment upgrades to meet requirements. The data refute the notion that upgrades, as related to chain-of-custody audit requirements and thus operational improvements, are a result of certified status for the majority of companies involved (P_9). Additionally, for the statement, "Chain-of-custody certification has helped my company become more efficient," 15 percent somewhat agreed while 46 percent indicated levels of disagreement and nearly 39 percent took a neutral stance. Coupled with findings of the previous question, this suggests that improved company operations as a result of becoming chain-of-custody certified has not been a realized benefit for most.

Company management, like company operations, can be viewed and defined in various ways. This study addressed company management at its most fundamental levels, ranging from decision methods by company managers for optimal profits and employee performance to communication between supervisors and subordinates. No formal definition was provided to respondents; therefore, the possibility of different interpretations did exist. Levels of agreement for the statement, "Chain-of-custody certification has helped my company improve management operations," were identical in all aspects to the results reported for operational improvements discussed previously. Fifteen percent somewhat agreed while 46 percent indicated levels of disagreement and 39 percent indicated neutrality. Results support P_{10} that improved company management is not a result of certified status for most respondents.

The questionnaire included the following question to explore objective two further: "Thinking further about possible benefits from chain-of-custody certification, my company has benefited in the following ways." Ten potential benefits and an "Other(s)" category were included to make choices exhaustive. The results are presented in **Table 2**.

The majority of firms reported no further benefits had been realized. New knowledge, improved employee safety, support from an accreditor, use of an ecolabel on product offerings, and increased competitiveness were identified as benefits for several firms. Interestingly, better inventory control and improved material tracking, the very tenants of chain-of-custody, were not identified as benefits by any respondents.

Lastly, the questionnaire asked chain-of-custody certified respondents to indi-

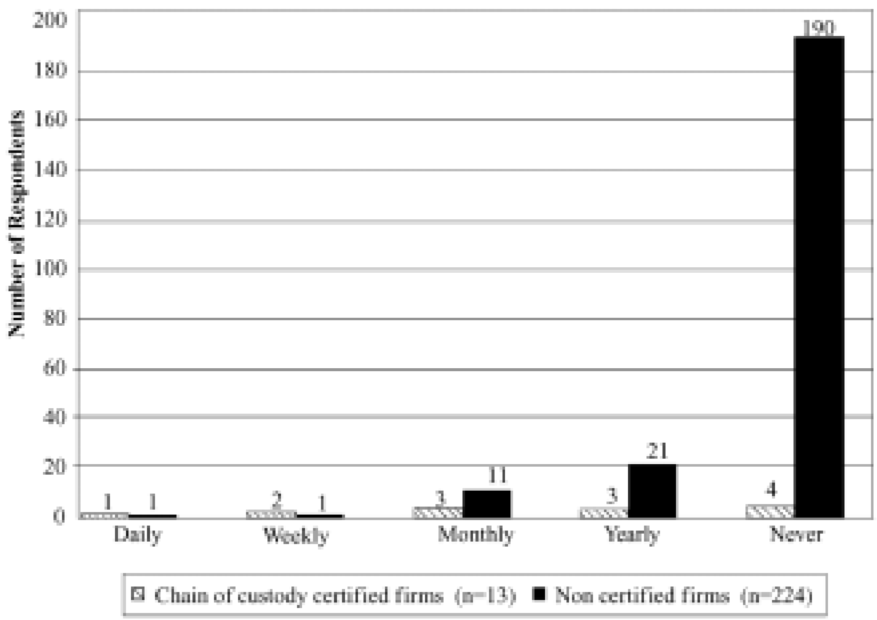

Figure 1. — Request frequency for certified wood reported by chain-of-custody certified respondents and non-certified respondents.

cate how often their company received customer requests for environmentally certified wood product(s). Companies receiving frequent requests for certified material may be more likely to view it as a positioning strategy potentially offering any of the benefits just discussed. The data may suggest whether demand for certified wood is derived from a pull or push strategy as well. Valid response choices for the question, "About how often would you say that your company receives a customer request for an environmentally certified wood product?" were: daily, weekly, monthly, yearly, and never. Of the 13 certified firms, one (7%) reported receiving daily requests, two (15%) reported weekly, three (23%) reported monthly, three (23%) reported yearly, and four (30%) reported never receiving requests. If one considers daily, weekly, and monthly to be reasonably frequent, then there is a nearly equal split in frequent and infrequent requests. With just over half of the firms indicating yearly and never, however, it is unlikely that a strong pull demand (consumer driven) for such products exists for this group. For comparison, responses to the same question reported by the 224 non-certified respondents are presented alongside the 13 certified firms used in the previous analysis (**Fig. 1**).

The majority of companies surveyed received few, if any, customer requests for certified wood products.

Objective three

Ninety-five percent of the respondent firms in this study were not currently chain-of-custody certified. The questionnaire directed respondents from these firms through two questions designed to ascertain why they had not adopted chain-of-custody certification, how they perceived certified wood products generally, and to obtain their perceptions of certification's ability to provide the aforementioned benefits discussed for certified firms. The results further the discussion of certification's salience in Wisconsin's forest products industry and marketplace. The reader is reminded that 58 percent of these non-certified manufacturers indicated they were not at all familiar with chain-of-custody certification.

For the first question (P_{11}), respondents were asked to indicate their level of agreement (5-point Likert scale) to a battery of nine statements. Statements were phrased in a way that allowed respondents to indicate whether the potential benefits discussed previously (increased market share, access to new markets, price premiums on certified product offerings, increased credibility with the public, improved company operations, and improved company management) *would* be realized with the adoption of chain-of-custody certification. Perceptions of quality and price of wood products relative to certified status of those products are also reported (**Table 3**).

Table 3 presents percentage distributions of respondents for each statement and provides a mean generated from the 5-point scale. The final column presents the results of one-sample t-tests performed for each statement to determine if departures from the scale neutral point (3.0) were statistically significant. As the table shows, all tests confirmed significance ($\alpha = 0.05$). For each of the first seven statements, many responding firms indicated levels of neutral agreement. Examining only the posed levels of positive or negative agreement, however, it becomes clear that respondents generally held more negative levels of agreement regarding chain-of-custody certification's ability to provide the proposed benefits. This trend is reversed for the last two statements, indicating these firms feel their customers value the quality and price of their wood products more than certified assurances.

The second question examined the reasons firms identified for not becoming certified. Respondents were presented with the statement, "My company has not become chain-of-custody certified because:" Respondents were given 12 plausible reasons including "Other(s)" and asked to check all that applied. Results appear in **Figure 2**. In general, higher percentages were observed for criteria surrounding fundamental economics and marketing potential. Lower percentages were observed for responses such as "too confusing," "meaningless," and "not enough certified supply" and these likely emanate from the low levels of understanding reported earlier.

Summary and conclusions

A general lack of awareness coupled with confusion surrounding environmental certification likely explains why it has not been widely adopted by respondents at this time. These factors alone may be a larger barrier to more wide-scale adoption of certification than the perceived costs to attain such status. Additionally, as forest products markets continue to globalize, these companies may perceive that unrealized marketplace benefits and infrequent customer requests for certified wood may not justify extra costs to offer such products. Given that the majority of primary wood manufacturers indicated no familiarity with chain-of-custody certification, it is reasonable to speculate that customer demand for certi-

Table 3. — *Respondent degrees of agreement with nine statements pertaining to chain-of-custody certification.*[a]

Statement	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree	Mean[b]	*p*-value[c]
	(%)						
Chain-of-custody certification would provide my company access to new markets.	0	12	40	19	28	3.6	0.000
Chain-of-custody certification would give my company more customers.	0	8	45	19	28	3.7	0.000
Chain-of-custody would allow my company to charge more money (a premium) on the certified product(s) it offered.	1	12	31	22	35	3.8	0.000
Chain-of-custody certification would create better public relations for my company.	3	24	43	15	15	3.2	0.019
Chain-of-custody certification would help my company become more efficient.	1	3	35	17	44	4.0	0.000
Chain-of-custody certification would help my company improve management operations.	1	4	38	16	42	3.9	0.000
Chain-of-custody certification would mean more sales volume for my company.	0	7	36	27	31	3.8	0.000
Most of my company's customers care more about the price of my wood products than they do about environmentally certified wood.	58	20	16	2	4	1.7	0.000
Most of my company's customers care more about the quality of my wood products than they do about environmentally certified wood.	62	21	13	2	3	1.6	0.000

[a]n = 201, 201, 200, 201, 201, 200, 200, 203, and 203 for each statement, respectively.
[b]Scale: 1 = strongly agree; 3 = neither agree nor disagree; 5 = strongly disagree.
[c]The p-value is based on one-sample t-tests for departure from the scale center of 3.0.

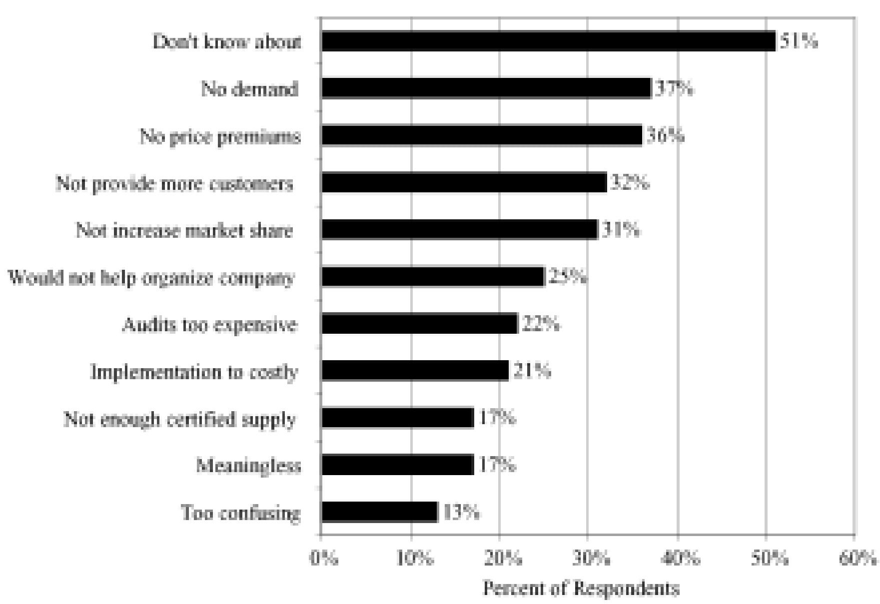

Figure 2. — Reasons respondents reported for not becoming chain-of-custody certified (n = 239).

fied wood is small. Similarly, it would seem that promotional and informational efforts put forth by accrediting bodies are not reaching this segment in Wisconsin at this time.

The findings here support previous studies that have concluded that price premiums are often unrealized on certified wood products. Similarly, increased market share has been true for only a few firms. Finally, although perceived costs outweigh perceived benefits for most respondents at this time, evidence suggests that certification may be an effective vehicle to create better relations with the public. Most respondent firms in Wisconsin at the time of this study appeared content to wait and watch the experiences of their certified peers.

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