Marketing of Urban and Reclaimed Wood Products

Dr. Omar Espinoza*, Anna Pitti

Department of Bioproducts and Biosystems Engineering
University of Minnesota
St. Paul, Minnesota, 55114, United States

ABSTRACT

In the United States, trees felled in urban areas and wood generated through construction and demolition are primarily disposed of as low-value resources, such as biomass for energy, landscaping mulch, composting, or landfill. An emerging industry makes use of these underutilized resources to produce high-value added products, with associated benefits for the environment, the local economy, and consumers. Research was carried out to increase the understanding of the marketing practices of urban and reclaimed wood industries. This paper presents the results from a nationwide survey of these companies. The results indicate that a majority of companies in this industry are small firms, operating for less than 10 years, produce mostly to order, and sell their products at comparatively higher prices than similar products made from traditional sources. Promotional messages included quality, aesthetics, and customization, conveyed through company webpages, word of mouth, and social media. Distribution channels used include direct sales, online sales, and retail sales. Partnerships are critical for effective raw material procurement. Respondents indicated optimistic growth expectations, despite barriers associated with urban and reclaimed wood materials and production

1. INTRODUCTION

Traditionally, logs from trees originating in urban areas of the US and wood elements generated through construction and demolition (C&D) projects have been disposed of as low value resources, typically through chipping, burning, or landfilling. There are approximately 74 billion trees in urban areas of the US, and when trimming or removal is necessary, they are considered "wood waste" (Sherrill 2017). It was estimated that, of the 34.2 million tons of wood-based municipal solid waste (MSW) generated in 2010, 18.4 million tons of woody yard trimmings, like urban logs and limbs, were disposed of, with 4.0 million tons available for recovery (Bratkovich, Howe et al. 2014). Reclaimed wood includes all previously utilized wood products brought back into circulation, largely originating from structures like old barns and buildings. In 2010, approximately 36.4 million tons of C&D wood waste were generated in the US, with approximately 17.3 million tons available for recovery (Howe, Bratkovich et al. 2013, Bratkovich, Howe et al. 2014).

In recent years, industries have emerged to capitalize on timber from urban trees and reclaimed wood by offering unique aesthetics, historical significance, sustainability, and sentimentality derived from inimitable wood supplies. The urban and reclaimed wood industries operate using a circular economy business model, working to upcycle raw materials traditionally regarded as waste or of low value. By closing industrial loops, a circular economy operates beyond the traditionally linear *take, make, waste* production to address resource scarcity, environmental impact, and economic benefits, effectively providing social, natural, and economic capital (Lieder and Rashid 2016, Ellen MacArthur Foundation 2019). Specifically, the urban and reclaimed wood industries provide economic opportunities in their communities through high value-added production, and by salvaging raw materials from landfills, firms offer both environmental and social benefits associated with opportunities for waste reduction and forest regeneration, respectively. Additional environmental benefits brought forth as a result of urban and reclaimed wood production include increased carbon sequestration potential, decreased energy consumption, and decreased global warming potential (Gu and Bergman 2018, Sherrill and Bratkovich 2018).

Due to the newly established nature of the urban and reclaimed wood industries, minimal literature specific to marketing practices exists. A variety of sources were consulted to gather an understanding of each industry and how attributes are relayed to consumers, including company and network webpages, reports, online articles, and a number of other sources. The urban wood industry largely comes together through industry network collaboration to provide their members with a number of resources, including information for efficient production and targeted marketing

* Corresponding author: Dr. Omar Espinoza; E-mail: oaespino@umn.edu

materials, as depicted through the nationally operating Urban Wood Network (Urban Wood Network 2019) and Urban, Salvaged, and Reclaimed Woods (Urban 2019) network operating in California. Reclaimed wood products can generate demand from consumers through environmental certifications, specifically Forest Stewardship Council (FSC) reclaimed wood certification potential. The Forest Stewardship Council, an organization that maintains certification standards for sustainably managed forests and supply chains, has expanded their certification to include post-consumer reclaimed material, including a majority of value-added reclaimed wood products (Forest Stewardship Council 2011). Additionally, reclaimed wood materials can receive Leadership in Energy and Environmental Design (LEED) accreditation, a rating system that provides credits for applicable life cycle impact reductions, as well as FSC Certification, material reuse, and regional sourcing (U.S. Green Building Council 2019). Both urban wood network collaboration and reclaimed wood recognition reinforce raw material reliability to consumers, in turn helping firms in marketing their products. This publication presents the results of a research project that used a nation-wide survey to develop an industry profile of firms operating in the urban and reclaimed wood industries, with emphasis on marketing practices.

2. Research Objective

The main objective of this study was to identify current marketing practices in the urban and reclaimed wood industries. To accomplish this goal, the following specific objectives were proposed: (1) develop a profile of value-added urban and reclaimed wood manufacturers, (2) identify current marketing practices, and (3) identify industry opportunities and barriers.

3. Methods

A nationwide survey was conducted to outline current marketing practices and major characteristics of firms in the target population, namely value-added production firms using urban logs or reclaimed wood components as raw materials. Because these industries are relatively new and lack specific Census classification designation, a list of 386 firms was compiled through Internet searches, social media, state and regional databases, personal contacts, and other means. The final distribution list contained what authors categorized as 151 *urban wood* companies and 238 *reclaimed wood* enterprises, but survey results later indicated that many firms utilize both urban and reclaimed wood raw materials, which will be referred to as raw materials from *mixed-sources*.

The questionnaire was developed in Qualtrics, an online survey software system and was distributed via email to companies in the industry list (Qualtrics 2005). Questions included company characteristics, customer characteristics, products, wood species, distribution channels, promotional messaging and platforms, opportunities, and barriers.

4. Results and Discussion

After closing the survey, 132 usable responses were obtained, and an adjusted response rate of 37.2% was calculated (Dillman, Smyth et al. 2009). This response rate is considerably above the median and average response rates for surveys to North American forest products industries, of 26.0% and 31.6%, respectively (Bumgardner, Montague et al. 2017).

4.1. Company Characteristics

Respondents consisted of 36 *urban wood* firms, 41 *reclaimed wood* firms, and 55 *mixed-source* firms. For most questions, responses by mixed-source firms resembled those by urban wood firms to a higher degree than those of reclaimed wood firms. Overall, a majority of firms have been in operation less than 10 years (43.2%), and 36.4% were operating more than 15 years. Companies were asked the US regions where their products were sold (Midwest, Northeast, Southwest, and Northwest), or if they exported. Multiple responses were possible, and a majority of participating firms reported sales in the *Midwest* and *Northeast* (approximately 50.0% of respondents for each region). Approximately 18.9% of firms reported having export operations, and twice as many reclaimed wood firms indicated exporting than either mixed-source or urban wood firms (29.3%, 14.5%, and 13.9% of firms, respectively).

Number of employees and monthly raw material consumption in board feet were used to estimate general firm size and production capacity. In general, urban wood and mixed-source firms were smaller than reclaimed wood operations, with 86.1%, 67.3% and 46.3% of respondents, respectively, having fewer than 10 employees. Reclaimed wood firms also consumed the highest volume of raw material per month (an average 26.7 thousand board feet, or

MBF), followed by mixed-source (16.4 MBF) and urban wood firms (6.1 MBF). It should be noted, however, that the reported raw material consumption varied widely, ranging from 100 to 200,000 bf per month.

Firms were also asked to report their reasons for entering the industry. Responses were largely reflective of raw material characteristics as a source of differentiation, including desire for unique raw materials, a supply of wood otherwise being underutilized or wasted, and sustainable and local products, with 90.9%, 89.4%, and 77.3% of respondents, respectively, ranking these reasons as "Important" or "Extremely Important."

4.2. CUSTOMER CHARACTERISTICS

By understanding who their customers are, firms can tailor their marketing strategies, target specific segments, and develop successful products. Survey results indicate that the consumer is as a 35-54-year-old with upper middle-income status, where gender was noted as irrelevant to purchasing.

4.3. MARKETING MIX

This study sought to outline marketing strategies implemented by the urban and reclaimed wood industries. For this, the "marketing mix" was used as a framework, specifically analyzing product, price, promotion, and placement. Product analysis consisted of species used and product categories, pricing was studied in relation to the competition, promotional analysis included messaging and platforms, and placement considered distribution channels.

Products manufactured and species used by participating firms varied widely, particularly between raw material group. Urban wood firm product offerings most frequently included slabs, furniture, mantels, lumber, beams, tableware, and accessories; while reclaimed wood firms identified mantels, beams, furniture, flooring, millwork, stair parts, lumber, and doors as their most common products. Mixed source firm responses primarily aligned with urban wood firm responses, including furniture, slabs, mantels, lumber, beams, millwork, and flooring. The five most common wood species used in production of urban wood products were all hardwoods (walnut, white oak, cherry, ash, and hard maple), while reclaimed wood firms produce with both hardwoods and softwoods (Douglas-fir, pine, southern yellow pine, white oak, and red oak). Mixed source firm responses were closely aligned with those reported by urban wood companies, including walnut, white oak, red oak, ash, and hard maple. Overall, participating firms reported primarily made-to-order (MTO) production over made-to-stock (MTS) (61.0% and 39.0% of sales, respectively). Reclaimed wood firms allocated a higher percentage to MTO production than either urban wood or mixed source firms (71.9%, 53.9%, and 58.1% of sales, respectively).

Participating firms also indicated that urban and reclaimed wood prices were often higher than the competition's, with 36.3% reporting prices "Slightly higher" or "Much higher" compared to 29.5% indicating prices "Slightly lower" or "Much lower." From analysis of survey responses for product and price, it can be stated that urban and reclaimed wood firms, in general, adopt a differentiation strategy, making high-end products and producing largely against firm orders. Primary promotional messages were identified to highlight attributes such as *quality, aesthetics,* and *customization* (Table 1)*,* often relayed to consumers via *word of mouth*, *company webpage*, and *social media* (Table 2), with 93.2%, 81.1%, and 65.9% of firms rating these three promotional platforms as "Important" or "Extremely important." Lastly, the most common distribution channels utilized by participating firms include *direct sales* (88.6% of firms), *online sales* (53.0%)*,* and *retail sales utilizing a company-owned store or showroom* (47.7%). *Export sales* were less prevalent but reported by 13.6% of firms. Responses on promotional platforms and distribution channels highlight the customer-centric nature of the urban and reclaimed wood industries.

Table 1: Marketing messages as identified by participating firms

Messaging theme	Not at all important	Slightly important	Moderately important	Important	Extremely important
Sustainability	2 (1.5%)	6 (4.5%)	18 (13.6%)	37 (28%)	65 (49.2%)
Aesthetics	0 (0%)	2 (1.5%)	4 (3%)	32 (24.2%)	90 (68.2%)
Quality	1 (0.8%)	1 (0.8%)	3 (2.3%)	22 (16.7%)	101 (76.5%)
Customization	4 (3%)	2 (1.5%)	18 (13.6%)	33 (25%)	70 (53%)
Emotional value	3 (2.3%)	7 (5.3%)	35 (26.5%)	41 (31.1%)	42 (31.8%)
Historical significance	4 (3%)	12 (9.1%)	23 (17.4%)	49 (37.1%)	40 (30.3%)
Local and domestic sourcing	3 (2.3%)	8 (6.1%)	22 (16.7%)	45 (34.1%)	50 (37.9%)

* Rows do not add up to 100% because companies did not answer this question.

Pearson's chi-squared test: *Local and domestic sourcing* displayed significant association between promotional messaging and raw material group: $\chi^2 = 17.39$; **p-value = 0.026** ($p<0.05$).

Table 2: Marketing platforms as identified by participating firms

Promotional platform	Not at all important	Slightly important	Moderately important	Important	Extremely important
Company webpage	1 (0.8%)	9 (6.8%)	12 (9.1%)	26 (19.7%)	81 (61.4%)
Word of mouth	0 (0%)	1 (0.8%)	5 (3.8%)	27 (20.5%)	96 (72.7%)
Public relations	9 (6.8%)	24 (18.2%)	33 (25%)	22 (16.7%)	36 (27.3%)
Social media	3 (2.3%)	11 (8.3%)	26 (19.7%)	39 (29.5%)	48 (36.4%)
Newspapers or magazines	28 (21.2%)	45 (34.1%)	32 (24.2%)	13 (9.8%)	7 (5.3%)
Events	30 (22.7%)	38 (28.8%)	22 (16.7%)	23 (17.4%)	13 (9.8%)

* Rows do not add up to 100% because companies did not answer this question.
Pearson's chi-squared test: "word of mouth" and "events" display significant association between promotional platform and raw material group: $\chi^2 = 16.41$; **p-value = 0.012** ($p<0.05$) and $\chi^2 = 19.446$; **p-value = 0.013** ($p<0.05$), respectively.

Other promotional platforms: Architects and designers, craft shows, paid advertising, partnerships with third party sellers, radio, reviews (Yelp, Google), seeing products within the community, slab wagon on the street, tours, TV commercial, YouTube presence

4.4. Supply Chain Partnerships

Partnerships are critical to urban and reclaimed wood production due to their role in raw material procurement. The survey asked firms to identify sourcing collaborations by selecting from a list. Urban wood partners included *tree removal firms* (83.3% of firms), *arborists* (77.8%), *homeowners* (75.0%), *city governments* (69.4%), and *urban foresters* (58.3%). Primary reclaimed wood partners included *deconstruction firms* (78.0%), *demolition firms* (75.6%), *building owners* (70.7%), and *construction and remodeling firms* (51.2%). The most frequently cited partnerships by mixed-source firms aligned closely with those of urban wood companies, ranked as follows: *homeowners* (72.7%), *tree removal firms* (63.6%), *arborists* (58.2%), *building owners* (56.4%), *deconstruction firms* (52.7%), *urban foresters* (49.1%), *city governments* (49.1%), and *construction and remodeling firms* (45.5%).

4.5. Growth

When asked about prospects for growth, firms reported largely optimistic expectations, with 85.6% anticipating modest to significant growth in the next five years. Such expectations reinforce confidence within these industries that urban and reclaimed wood demand is not merely a fad, but firms have established plans for the foreseeable future. To facilitate growth, firms will need to overcome barriers, the most important of which were identified as *lack of financial resources* (rated as "Large" or "Extreme" barrier by 31.8% of respondents), *lack of storage space* (25.0%), and *under-performing or insufficient marketing efforts* (22.0%).

Table 2: Barriers to industry growth

Barrier	Not a barrier	Slight barrier	Moderate barrier	Large barrier	Extreme barrier
Poor relationships with suppliers	73 (55.3%)	28 (21.2%)	18 (13.6%)	7 (5.3%)	0 (0.0%)
Lack of market research / poorly identified markets	55 (41.7%)	31 (23.5%)	4 (3%)	14 (10.6%)	1 (0. 8%)
Lack of storage space for raw materials	54 (40.9%)	18 (13.6%)	3 (2.3%)	23 (17.4%)	10 (7.6%)
Difficulty working non-traditional raw materials	52 (39.4%)	33 (25.0%)	18 (13.6%)	8 (6.1%)	3 (2.3%)
Quantity and/or quality of raw materials	48 (36.4%)	29 (22.0%)	35 (26.5%)	16 (12.1%)	1 (0.8%)
Lack of financial resources	35 (26.5%)	26 (19.7%)	23 (17.4%)	29 (22.0%)	13 (9.8%)
Under-performing or insufficient marketing effort	32 (24.2%)	42 (31.8%)	22 (16.7%)	20 (15.2%)	9 (6.8%)
Lack of consumer awareness	23 (17.4%)	32 (24.2%)	46 (34.8%)	20 (15.2%)	6 (4.5%)

* Rows do not add up to 100% because companies did not answer this question.

Pearson's chi-squared test: *Local and domestic sourcing* displayed significant association between promotional messaging and raw material group: $\chi^2 = 17.39$; **p-value = 0.026** ($p<0.05$).

5. SUMMARY

The objective of this research was to identify current marketing practices in the urban and reclaimed wood industries via an industry survey, with focus on developing a manufacturer profile, identifying current marketing practices, and outlining opportunities and barriers. Results indicate that a majority of participating firms have operated for less than 10 years or more than 15 years, and reclaimed wood firms tend to operate at higher capacities than urban wood firms. Major reasons for entering each industry are associated with raw material characteristics as a source of differentiation. Typical consumers are 35-54 years of age with upper middle-income status, where gender was noted as irrelevant to purchasing. Almost all firms maintained at least one supply chain partnership, but an average of four partners was reported.

Products and species were variable between raw material groups, and firms primarily produce to-order over stock product. Pricing was, in general, higher than the competition. Messages of quality, aesthetics, and customization were emphasized using word of mouth, company webpages, and social media. Primary distribution channels consisted of direct sales, online sales, and retail sales. Firms almost unanimously anticipate growth going forward, but they will need to overcome barriers like lack of financial resources, lack of storage space, and inadequate marketing efforts.

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