

How Small Firms Contrast with Large Firms Regarding Perceptions, Practices, and Needs in the U.S. Secondary Woodworking Industry

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As many larger secondary woodworking firms have moved production offshore and been adversely impacted by the recent housing downturn, smaller firms have become important to driving U.S. hardwood demand. This study compared and contrasted small and large firms on a number of factors to help determine the unique characteristics of small firms and to provide insights into useful areas for support. Small firms were found to be similar to large firms with respect to the perceived importance attributed to manufacturing capabilities as a business success factor. However, small firms differed substantially from large firms in other ways, such as less attention to information seeking and planned investments. Small firms also tended to make greater use of distribution yards in the hardwood lumber purchasing value chain and requested fewer services from their hardwood lumber suppliers than did larger firms. Small firms were found to be keen on developing their marketing capabilities, including e-commerce, to further their information exchange with customers to successfully produce made-to-order products. Small firms considered the individual characteristics of company owners/managers to be a relatively important success factor to business, more so than larger firms. The results are summarized and discussed through the lens of small firm reliance on niche markets for survival (including fully made-to-order production) and their need to find new revenue during economic downturns.

Keywords: Secondary wood products industry; Small firms vs. large firms; Success factors; Planned investments; Hardwood lumber suppliers; United States

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INTRODUCTION

Several studies have highlighted the significance of small and medium-sized enterprises (SMEs) and their crucial role in economic and social welfare (Mulhern 1995, Storey 2003). SMEs are important providers of employment and supply needed products and services to local communities and other enterprises and organizations. Typically, small companies are flexible and can fill market niches overlooked, or not profitably served, by larger firms. The existence of such niches, and the opportunity to grow over time, help explain the ability of small firms to persevere within an economy despite the inherent advantages of being larger, including economies of scale and scope, experience effects, and easier access to capital (Ghemawat 1986; Penrose 1995).

In the U.S., small businesses are those with less than 500 employees according to the Small Business Administration (2012). In contrast, the European Union defines small

business as having fewer than 50 employees and medium-sized businesses as having fewer than 250 employees. Due to the structure of the U.S. secondary woodworking industry, small firms often have been defined as even smaller, such as with fewer than 20 employees (Bumgardner *et al.* 2011a). A classification of fewer than 20 employees also is common when reporting employment statistics in the U.S. (*e.g.*, U.S. Census Bureau 2012). Over 36% of the total employment in the U.S. wood kitchen cabinet and countertop manufacturing industry (NAICS 337110), for example, comes from enterprises with fewer than 20 employees, compared to 18% across all U.S. industries (U.S. Census Bureau 2012). Furthermore, 92% of all establishments classified under NAICS 337110 in the U.S. employed fewer than 20 people in 2010 (U.S. Census Bureau 2012).

Given developments in the U.S. hardwood industry since the start of the 21st century, including the globalization of furniture markets and the recession of 2008 and associated declines in construction-based hardwood markets, there is evidence that small firms have become increasingly important to driving hardwood demand (Bumgardner *et al.* 2011a). The ramifications of changing demand from secondary woodworking industries (including cabinets, furniture, millwork, flooring, *etc.*) extend upstream throughout the hardwood value chain, to include primary processors (Grushecky *et al.* 2006). For example, anecdotal comments such as, "*It used to be I only had a few large customers on my Christmas card list, now I have hundreds of small customers*" (Hardwood Review 2007, p. 16) reinforce the notion that smaller firms are, collectively, critical to the hardwood industry. Such observations are supported by recent studies showing that for both hardwood sawmills and lumber distributors, there has been a trend of decreasing customer and order size over the last several years (Buehlmann *et al.* 2010; Espinoza *et al.* 2011).

Another consideration underlying trends in the U.S. secondary woodworking industry is the increasing relevance of the customized economy, where customers expect products and services to be tailored to their specific needs and expectations (Pine 1993; Schuler and Buehlmann 2003; Lihra *et al.* 2012). Such a system calls for flexible entities that are able to interact with individual customers and quickly deliver the desired product or service. SMEs are well positioned to provide high levels of customization to customers profitably. Their size makes them flexible to shape products and services to particular market niches and needs (Penrose 1995) and to interact with individual customers to clearly understand their needs (Gilmore *et al.* 1999). Furthermore, it has been shown that small firms rely more on generating new revenue sources during economic downturns in contrast to larger firms that rely more on cost reductions during such periods (Shama 1993; Latham 2009). Aggressive efforts by smaller firms to seek out new opportunities and work closely with customers might take on added importance in the current business environment where overall demand is low and projects tend to have unique specifications (DeDee and Vorhies 1998). Recent research has shown that being small and producing fully made-to-order products helped companies grow sales volume despite the recent downturn in housing construction markets (Bumgardner *et al.* 2011a). However, it also has been shown that smaller firms often have difficulty carrying out marketing activities, especially related to advertising and market research/information searching (Huang and Brown 1999).

Given the importance of small firms, their challenges, and their increasing consequence in the secondary woodworking industry, this study sought to compare and contrast the perceptions, practices, and needs of small firms to those of large firms in the

current business environment. The results will help improve understanding of the unique characteristics of smaller firms and provide insights into the most useful areas for outreach and research programs. As described in the next section, data were collected using a mailed questionnaire. Topics of interest for comparisons included perceived business success factors (Rogoff *et al.* 2004), degree to which several types of information sources were used (Bumgardner *et al.* 2011b), planned investment areas (Buehlmann *et al.* 2003), and sources of hardwood lumber and services requested from lumber suppliers (Espinoza *et al.* 2011; Buehlmann *et al.* 2010). In addition, given the apparent importance of customized production to smaller firms (Bumgardner *et al.* 2011a), the degree of customization of products available also was compared between the groups.

METHODS

Data Collection and Analysis

Secondary wood products manufacturers from several states in the central hardwood region of the United States, including North Carolina, Ohio, Tennessee, Virginia, West Virginia, and Wisconsin, were surveyed using Dillman's (2009) Total Design Method. An address list was compiled using state directories supplied by researchers or extension professionals in the states. Addresses for Ohio were compiled by Virginia Tech using Manta's online business listings, the manufacturer index of the Wood Products Manufacturers Association, and the membership list of the Architectural Woodwork Institute. The final address list for the six-state survey contained 4,980 firms. A questionnaire was developed and pre-tested with members of academia and five secondary manufacturers, resulting in some minor adjustments. The survey instrument, which addressed the aforementioned topic areas as well as general background information such as firm/product characteristics and types of market served, employed questions with categorical responses (check all that apply; multiple choice), rating responses (5-point scale), and fill-in-the-blank responses (quantitative). Comparisons of small and large firms within the sample were analyzed using z-tests for proportions (two-tailed), t-tests of means (two-tailed), and chi-square tests of independence ($\alpha=0.10$). Small firms were defined as those having fewer than 20 employees, while large firms were described as those employing 20 or more people. This definition has been used in other studies (*e.g.*, Bumgardner *et al.* 2011a).

After the initial mailing in the spring of 2011, a reminder postcard, another questionnaire with accompanying letter, and one last reminder postcard were mailed with a two-week separation between each mailing, respectively. At the closing of the survey, 395 usable questionnaires were received. For another 337 returns, responses either were not usable (many being primary manufacturers) or the company had gone out of business. After accounting for these firms, the adjusted response rate was 9%. Usable responses were obtained from respondents in each of the six states (as well as a few in other states), while the state for some respondents was not indicated. The distribution of responding firms was as follows: Virginia ($n=99$), North Carolina ($n=83$), Wisconsin ($n=81$), Ohio ($n=75$), West Virginia ($n=21$), Tennessee ($n=12$), other states ($n=12$), and state not indicated ($n=12$). For comparisons, there were 240 small firms and 142 large firms (13 firms did not provide size information), although not every respondent always answered every question.

Sample Description

Responses were obtained primarily from company owners (53%) and persons in corporate or operating management (32%). A smaller number of responses were received from persons in production management/engineering (4%), marketing, sales, and design (3%), and 8% either worked in other positions or indicated more than one of the above categories.

In terms of products manufactured, kitchen/bath cabinet companies were, with 22%, the most prevalent industry segment in the sample, followed by architectural millwork/store fixtures (16%), furniture (including household, upholstered, institutional, 14%), wood components (10%), flooring (6%), wood windows/doors (3%), and 29% indicated another product type or produced a combination of the products listed above. Most respondents operated at higher price-points, with 75% indicating their price point was either medium or medium-to-high, and another 9% operating at a high price-point.

Hardwood lumber was, with an average of 45%, the largest component of wood materials costs for responding companies, followed by composite and engineered products (27%), softwood lumber (17%), dimension and components (7%), and other (4%). Fourteen percent of respondents indicated that their firm has increased the use of imported finished products over the past 5 years, while 21% indicated that their company had increased the use of imported components or lumber over the same period. Conversely, 16% of respondents (6% of small firms and 31% of large firms, respectively) indicated that their firm had increased the export of their products outside of the United States over the last 5 years.

Responding firms, on average, listed two to three regions where regular business was conducted (from a pre-specified list), with 49% indicating the Midwest, 47% each indicating the Mid-Atlantic and the Southeast, 37% indicating the South, 18% indicating the Southwest, and 16% each indicating the Northwest and California. Thus the sample represented firms with an overall market presence throughout the United States. Eighty-one percent of respondents worked in a single-facility company and 63% of respondents worked in a company with less than 20 employees. Similarly, 52% of respondents had annual sales of \$1 million or less and 77% had annual sales of \$5 million or less.

Nonresponse Bias

Nonresponse bias was assessed by comparing early and late respondents. This practice assumes that there is a continuum from early respondents to late respondents, and that late respondents can be used as a proxy for nonrespondents (Armstrong and Overton 1977; Lahaut *et al.* 2003). Respondents were categorized as either early respondents (n=267) or late respondents (n=128) depending on whether they returned the questionnaire from the first or second mailing. Four categorical variables were analyzed using chi-square tests of independence, including number of employees, sales in 2010, change in sales from 2010 to 2011 (better, worse, or unchanged), and type of product produced (cabinets, furniture, architectural millwork/fixtures, and other). None of the tests were significant, with associated p-values of 0.40, 0.99, 0.93, and 0.67, respectively. These results indicated that early and late respondents were quite similar in terms of size, performance, and product types produced, and thus suggested that nonresponse bias was not a major factor in the study.

RESULTS

Respondents were presented with a list of 14 factors potentially important to the success of their respective firms, and asked to indicate the four they perceived to be the most important. Results are shown in Table 1. Small and large firms were similar in many of their choices, especially on most of those factors that ranked the highest. The highest ranked factors for which there was a significant difference was *marketing activities* and *individual characteristics of owners/managers*, with small firms rating both of these factors as more important. Conversely, large firms rated *product characteristics relative to the competition*, *organizational efficiency*, and *upper management decision-making* as more important factors to their success than did small firms.

Table 1. Comparisons of Small and Large Firms Regarding Factors Perceived as Important to the Success of their Businesses (each respondent was asked to check the four factors perceived to be the most important out of a total of 14 factors listed)

Factor ¹	Small firms (%)	Large firms (%)	z	p-value
Manufacturing capabilities (e.g., ability to make profitable products, quality control, efficiency)	61.4	67.4	-1.16	0.244
General economic conditions	55.8	55.8	0.00	0.999
Cost of raw material and energy inputs	41.6	41.3	0.06	0.951
Marketing activities (e.g., reaching new customers, good customer service, effective product promotion)	39.5	31.2	1.61	0.107
Human resources management (e.g., organizational efficiency, ability to hire good people, employee morale)	31.3	34.8	-0.69	0.493
Individual characteristics of owners/managers (e.g., hard work, ethics, knowledge, dedication)	34.8	23.9	2.19	0.029
Overall consumer expenditures in our company's product class	26.2	21.7	0.96	0.337
Product characteristics relative to competition	21.5	29.0	-1.63	0.102
Organizational efficiency (e.g., ability to make quick decisions, ease of implementation)	18.9	28.3	-2.09	0.036
Financing opportunities (e.g., loan availability)	12.4	12.3	0.04	0.971
Regulatory conditions	6.9	11.6	-1.57	0.117
Upper management decision-making (e.g., investments, expansions)	5.2	10.9	-2.05	0.040
Competition-driven innovation	5.6	9.4	-1.40	0.161
Industry-wide technology advancements that improve efficiency/product capabilities	4.7	8.7	-1.53	0.125
¹ Factors are shown in order of decreasing importance based on overall percentages for the entire sample.				

Respondents were then asked about the frequency with which they used several information sources to learn about trends in the industry. Results are shown in Table 2. Large firms rated (based on a five-point scale) nearly all of the information sources

higher than did small firms, with *word of mouth from other industry participants*, *attendance at meetings or workshops*, and *visiting retail and other stores* being statistically significant between the two groups. The most frequently used source for both of the groups was *conversations with customers*, which appeared to be especially important for small firms relative to the next highest ranked source (*word of mouth from other industry participants*).

Table 2. Comparisons of Small and Large Firms Regarding Information Sources Used to Learn of Trends in the Industry

Information Source ¹	Small firms (mean) ²	Large firms (mean)	<i>t</i>	<i>p</i> -value
Conversations with customers (e.g., face-to-face, phone or email)	4.3	4.3	-0.14	0.887
Word of mouth from other industry participants	3.5	3.9	-2.82	0.005
Magazines/newspapers	3.3	3.4	-0.59	0.555
Websites/list serves	2.8	2.9	-0.61	0.541
Visiting retail and other stores	2.3	2.6	-2.05	0.041
Attendance at meetings or workshops	2.1	2.6	-4.61	<0.001
Designers/consultants	2.3	2.2	0.67	0.505
¹ Information sources are shown in order of decreasing importance based on overall means for the entire sample.				
² Means based on a five-point scale anchored by 1=Never to 5=Frequently.				

Next, respondents were asked to indicate the areas in which their companies planned to make significant investments over the next five years. Results are shown in Table 3. Overall, large firms planned more investment activity across nearly all of the areas investigated.

Table 3. Comparisons of Small and Large Firms Regarding Planned Investments Areas over the Next Five Years

Planned Investment Area ¹	Small firms (%)	Large firms (%)	<i>z</i>	<i>p</i> -value
Advertising/marketing communications	31.2	28.9	0.49	0.625
Employee training	21.7	44.4	-4.67	<0.001
Finishing	23.8	31.7	-1.70	0.090
Sales force expansion/development	18.8	39.4	-4.43	<0.001
Design/manufacturing software	18.8	22.5	-0.89	0.373
Assembly	18.8	22.5	-0.89	0.373
Certification/green initiatives	14.6	26.1	-2.77	0.006
E-commerce	18.3	15.5	0.71	0.478
Solid wood Processing	15.4	20.4	-1.25	0.211
Inventory reduction	10.4	23.9	-3.54	<0.001
Panel processing	12.5	15.5	-0.82	0.410
Component outsourcing	9.6	13.4	-1.15	0.252
Rough mill	7.9	13.4	-1.72	0.085
Decorative laminating/veneering	5.0	6.3	-0.55	0.579
¹ Planned investment areas are shown in order of decreasing importance based on overall percentages for the entire sample.				

Large firms indicated significantly more investment activity in the following areas: *employee training, finishing, sales force expansion/development, certification/green initiatives, inventory reduction, and the rough mill*. For large firms, the gap with small firms was especially large for *employee training* (44.4% vs. 21.7%) and *sales force expansion/development* (39.4% vs. 18.8%). Relative to large firms, small firms showed the greatest propensity for planned investments in the areas of *advertising/marketing communication* (31.2% vs. 28.9%) and *e-commerce* (18.3% vs. 15.5%).

Respondents also were asked to indicate their sources for hardwood lumber by filling in a percentage number for each of several potential sources. Results are shown in Table 4 and reveal substantial differences between small and large firms regarding whether lumber was purchased *direct from sawmills* or from *distribution/concentration yards*. For small firms, *distribution and concentration yards* were, by far, the most important lumber source (58.7%). For large firms, obtaining lumber *direct from sawmills* was the most important source (44.8%). *Brokers* and *other sources* represented a relatively small proportion of the total for both small and large firms, and neither of the differences were significant.

Table 4. Comparisons of Small and Large Firms Regarding Sources for Hardwood Lumber

Hardwood Lumber Source	Small firms (% of total)	Large firms (% of total)	<i>t</i>	<i>p</i> -value
Direct from sawmills	28.6	44.8	-3.43	0.001
From distributors/concentration yards	58.7	39.1	3.90	<0.001
From brokers	6.3	9.4	-1.29	0.196
From other sources	6.5	6.6	-0.06	0.949

Relatedly, respondents were asked to indicate the services they had requested from their hardwood lumber suppliers during 2010 from a list of ten common services presented on the questionnaire. Results are shown in Table 5 and show that small and large firms did not differ on five of the ten services investigated.

Table 5. Comparisons of Small and Large Firms Regarding Services Requested from Hardwood Lumber Suppliers in 2010¹

Requested Service ²	Small firms (%)	Large firms (%)	<i>z</i>	<i>p</i> -value
S2S	68.7	53.3	2.20	0.028
Width sorting	55.7	65.4	-1.38	0.168
Break bundles	50.0	43.2	0.92	0.360
S4S	48.7	44.1	0.60	0.549
Just-in-time orders	36.8	59.1	-3.14	0.002
Special grading	39.3	54.6	-2.15	0.032
Certified products	33.3	62.0	-3.87	>0.001
Imported species	43.6	48.7	-0.69	0.488
Color sorting	36.7	47.5	-1.51	0.130
Double-end trim	11.1	28.6	-2.75	0.006

¹ Percentages calculated after removing respondents who indicated a given service was not applicable to their respective companies; this number (removals) ranged from 68 to 109, depending on the specific service, for small firms and 30 to 55 for large firms.

² Requested services are shown in order of decreasing importance based on overall percentages for the entire sample.

Table 5 also shows that most of the services were requested by relatively large proportions of both groups, suggesting that respondents were often interested in value-added services from their lumber suppliers¹. For small firms, S2S was requested relatively more frequently (68.7% vs. 53.3%), while large firms requested *special grading, just-in-time orders, certified products, and double-end trim* more frequently than small firms. The general pattern was for large firms to request value-added services more frequently than small firms, with smaller firms most interested in surfacing. Although not significant, there also was a trend of small firms requesting break bundles more frequently than large firms, with half of small firms indicating that this was a requested service.

Lastly, respondents were asked to indicate what proportion of their overall product mix could be classified as made-to-order production (*i.e.*, customers specify all aspects of the product including design). Results are shown in Table 6, and demonstrate that small firms were significantly more likely to have a high proportion of their product mix in made-to-order products (58.3%) than large firms (34.6%). In a similar question asking about proportion of the product mix that could be classified as semi-custom (*i.e.*, for a given design, customers have a choice of species, finish, hardware, *etc.*), there was not a difference between small and large firms (chi-square statistic = 3.41, $p = 0.492$), suggesting that it is the fully made-to-order production that sets small firms apart from large firms.

Table 6. Comparisons of Small and Large Firms Regarding Proportion of Product Mix that is Made-to-Order¹

Made-To-Order Mix	Small firms (%)	Large firms (%)
0%	3.6	13.1
1 – 20%	9.9	24.6
21 – 60%	12.6	13.8
61 – 80%	15.7	13.8
81 – 100%	58.3	34.6

¹ Chi-square statistic = 31.7; $p < 0.001$.

CONCLUSIONS AND DISCUSSION

- Overall, relative to large firms, small firms attributed success more to *marketing activities* and *individual characteristics of owners/managers*, sourced more of their hardwood lumber from *distribution/concentration yards*, desired S2S surfacing more in their purchased lumber, and produced more made-to-order products as a part of their product mix. Small firms also tended to use information sources less frequently than large firms (however, *conversations with customers* was especially important to small firms) and they planned fewer investments across most areas over the next five years (although *advertising/marketing communications* represented an important investment area for small firms). These overall findings and their implications are discussed in more detail with the concluding points below.

¹ However, respondents could indicate “not applicable” for any given service and these cases were deducted before calculating the results for each service, which contributed to higher percentages.

2. There was consistency between small and large firms regarding many of the most important success factors in the current business environment for secondary wood products manufacturers. *Manufacturing capabilities, general economic conditions, and cost of raw material and energy inputs* were ranked as the three most important factors by both groups, representing a mix of factors internal and external to the individual firm. However, differences did emerge for small firms in terms of *marketing activities* and *individual characteristics of owners/managers*. These results confirm other studies that have shown that revenue generation is critical for small firms during economic downturns (Shama 1993; Latham 2009), and that small firms tend to be more inward looking when attributing success (Rogoff *et al.* 2004). An interesting area for future research might be to assess whether such an internal focus predisposes managers of small firms to seek more or less outreach and training. Large firms indicated that *upper management decision-making* played a more important part in their success than it did for small-firms (although it ranked low overall), suggesting that leadership in general plays a role in the perceived success of companies.
3. Generally, large firms utilize more sources of information to a greater degree than do small firms, illustrating one of the challenges faced by small firms. Large firms in particular seem to have more networking opportunities whereby they converse with other companies in the industry. Conversely, *conversations with customers* was particularly vital to small firms, which likely is related to the finding that small firms tend to focus more on fully made-to-order products and niche markets relative to larger firms. Small firms seemed to be more likely to “stay at home,” as large firms were significantly more likely to *attend meetings or workshops* and to *visit retail and other stores*. Reasons for this might be that often-times, small firm owners face time constraints to travel given the multiple functions they serve within their respective firms; resources for travel might also be limited (Huang and Brown 1999). Even so, perhaps some small firms would be interested in outreach aimed at increasing networking and other information-seeking opportunities.
4. Large firms tended to indicate that investments were planned across more functional areas over the next five years than did small firms. In fact, in only two out of the 14 areas investigated did small firms indicate more planned investment activity than large firms, although not all of the differences were statistically significant. One area notably without a significant difference was *advertising/marketing communications*, with both small and large firms indicating that this was a planned investment area at a comparable rate. This again seems to illustrate the importance of revenue generation to small firms during economic downturns. However, among large firms, *sales force expansion/development* also was an area that ranked highly. Another interesting finding for its non-significance was *e-commerce*, where both groups indicated a similar level of planned investment. This seems to suggest that small firms increasingly view the internet as a means for communicating with potential customers in a more cost-efficient manner than print media or personal selling, and therefore they might be interested in training and outreach in this area.
5. There are distribution and raw material procurement implications to being a small manufacturer in the secondary wood industry. A sizable majority of the hardwood lumber procured by small firms was purchased from *distribution/concentration yards*,

whereas large firms were more likely to purchase lumber *direct from sawmills*. At the same time, large firms generally requested value-added services more frequently than small firms, suggesting their desire to reduce manufacturing costs (or an inability or desire not to perform certain tasks). Thus small firms' use of distribution yards might derive more from requiring smaller volumes than requiring more services. Only *S2S* was requested significantly more by small firms. For large firms, perhaps sawmills are providing the extra services often requested. Or, possibly, the specialized services requested by the large firms are ones emanating from the average 39% of purchases coming from distribution yards. The relatively high level of requests by large firms for *special grading* and *just-in-time orders* suggest that large firms are looking to lower input costs in conjunction with more streamlined or lean manufacturing processes (evidenced in part by the importance of planned investments in *inventory reduction* by large firms seen in Table 3). The large disparity between the groups regarding *certified products* also was interesting and likely indicates that small firms are focused more on working directly with individual consumers (*i.e.*, with made-to-order products), while large firms are working more with industrial customers where usage of certified products is sometimes required.

6. Both small and large firms were in general agreement that *manufacturing capabilities* were the single-most important success factor in the secondary woodworking industry, not a surprising finding for an industry based on producing physical products. For small firms, however, *marketing activities* also were rated highly as a success factor, and small firms indicated that marketing communication activities were an important area of planned investment. Thus small firms might be especially interested in marketing outreach efforts, particularly given that small firms tend to report marketing as an especially challenging function (Huang and Brown 1999). While large firms can rely on a variety of actions to survive economic downturns, including cost reductions, small firms often have to rely mostly on increased efforts in revenue generation. Future research could add a performance component to determine if certain factors are more important to the actual success of smaller firms and larger firms.
7. A limitation of this study was that the perceptions, opinions, knowledge, *etc.* of a single respondent was used to represent each firm; such perceptions could perhaps differ from others within the same respective firm. However, it can be said that most responses (85%) were received from owners or persons in corporate/operating management, suggesting that most responses at least represented the thinking of key representatives. Also, it is recognized that there are many definitions, beyond that used in the present study, of what might constitute a "small" or "large" firm, depending on such factors as country, objective, industry sector, *etc.* Interpretation of the results ultimately should be based more on the actual number used to distinguish firms (fewer than 20 employees versus 20 or more employees) than on the labels "small" and "large."

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REFERENCES CITED

- Armstrong, J. S., and Overton, T. S. (1977). "Estimating nonresponse bias in mail surveys," *Journal of Marketing Research* 14(3), 396-402.
- Buehlmann, U., Bumgardner, M., Schuler, A., and Christianson, R. (2003). "How can the U.S. wood products industry compete?," *Wood and Wood Products* 108(1), 37-46.
- Buehlmann, U., Espinoza, O., Bumgardner, M., and Smith, B. (2010). "Trends in the U.S. hardwood lumber distribution industry: Changing products, customers, and services," *Forest Products Journal* 60(6), 547-553.
- Bumgardner, M., Buehlmann, U., Schuler, A., and Crissey, J. (2011a). "Competitive actions of small firms in a declining market," *Journal of Small Business Management* 49(4), 578-598.
- Bumgardner, M., Graham, G., Goebel, P. C., and Romig, R. (2011b). "Perceptions of firms within a cluster regarding the cluster's function and success: Amish furniture manufacturing in Ohio," Pages 597-606 in *Proceedings, 17th Central Hardwood Forest Conference*, Gen. Tech. Rep. NRS-P-78, Newtown Square, PA, U.S. Department of Agriculture, Forest Service, Northern Research Station. 678 p.
- DeDee, J. K., and Vorhies, D. W. (1998). "Retrenchment activities of small firms during economic downturn: An empirical investigation," *Journal of Small Business Management* 36(3), 46-61.
- Dillman, D. A. (2009). *Internet, Mail, and Mixed-mode Surveys: The Tailored Design Method*, 3rd Ed., Wiley & Sons, Hoboken, N.J. 499 pp.
- Espinoza, O., Buehlmann, U., Bumgardner, M., and Smith, B. (2011). "Assessing changes in the U.S. hardwood sawmill industry with a focus on markets and distribution," *BioResources* 6(3), 2676-2689.
- Ghemawat, P. (1986). "Sustainable advantage," *Harvard Business Review* 64(5), 53-58.
- Gilmore, A., Carson, D., O'Donnell, A., and Cummins, D. (1999). "Added value: A qualitative assessment of SME marketing," *Irish Marketing Review* 12(1), 27-35.
- Grushecky, S. T., Buehlmann, U., Schuler, A., Luppold, W., and Cesa, E. (2006). "Decline in the U.S. furniture industry: A case study of the impacts to the hardwood lumber supply chain," *Wood and Fiber Science* 38(2), 365-376.
- Hardwood Review. 2007. "Market comments," *Hardwood Review Weekly* 24(9), 16-17.
- Huang, X., and Brown, A. (1999). "An analysis and classification of problems in small business," *International Small Business Journal* 18(1), 73-85.
- Lahaut, V. M. H. C. J., Jansen, H. A. M., van de Mheen, D., Garretsen, H. F. L., Verdurmen, J. E. E., and van Dijk, A. (2003). "Estimating non-response bias in a survey on alcohol consumption: Comparison of response waves," *Alcohol and Alcoholism* 38(2), 128-134.
- Latham, S. (2009). "Contrasting strategic response to economic recession in start-up versus established software firms," *Journal of Small Business Management* 47(2), 180-201.

- Lihra, T., Buehlmann, U., and Graf, R. (2012). "Consumer preferences for differentiated household furniture," *Journal of Forest Economics* 18, 94-112.
- Mulhern, A. (1995). "The SME sector in Europe: A broad perspective," *Journal of Small Business Management* 33(3), 83-87.
- Penrose, E. (1995). *The Theory of the Growth of the Firm*, 3rd Ed., Oxford, New York, Oxford University Press, 272 pp.
- Pine, J. B. (1993). *Mass Customization: The New Frontier in Business Competition*. Boston, MA, Harvard Business School Press, 333 pp.
- Rogoff, E. G., Lee, M.-S., and Suh, D.-C. (2004). "'Who done it?' Attributes by entrepreneurs and experts of the factors that cause and impede small business success," *Journal of Small Business Management* 42(4), 364-376.
- Schuler, A., and Buehlmann, U. (2003). *Identifying Future Competitive Business Strategies for the U.S. Residential Wood Furniture Industry: Benchmarking and Paradigm Shifts*, Gen. Tech. Rep. NE-304, Newtown Square, PA, U.S. Department of Agriculture, Forest Service, Northeastern Research Station, 15 pp.
- Shama, A. (1993). "Marketing strategies during recession: A comparison of small and large firms," *Journal of Small Business Management* 31(3), 62-72.
- Small Business Administration. (2012). "What is SBA's definition of a small business concern?" (<http://www.sba.gov/content/what-sbas-definition-small-business-concern>), accessed December 4, 2012.
- Storey, D. J. (2003). "Entrepreneurship, small and medium sized enterprises and public policies," Pages 473-514 in Z.J. Acs and D.B. Audretsch (eds.), *Handbook of Entrepreneurship Research: An Interdisciplinary Survey and Introduction*, Norwell, MA, Kluwer Academic Publishers, 555 pp.
- U.S. Census Bureau. (2012). "Statistics of U.S. businesses (SUSB) main – Latest SUSB annual data," (<http://www.census.gov/econ/susb>), accessed March 25, 2013.

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