

PROFILE OF FURNITURE MANUFACTURERS IN THE U.S. SOUTH: STRUCTURE AND INDUSTRY GROWTH FACTORS

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ABSTRACT

Economic growth and development strategies typically center on either retention and expansion of existing companies or attracting new industrial investment. In addition, wood products industry development efforts generally focus on value-added secondary processing or remanufacturing. The furniture industry is one value-added sector that has been promoted with great success, particularly in the U.S. South. This paper gives an overview of the furniture industry structure in the South and discusses elements of success and impediments to industry growth and development.

Keywords: furniture industry, U.S. South, economic development.

INTRODUCTION

In a recent study of forest industry development programs, Vlosky and Chance (1995) found that a number of states and regions in the United States are establishing economic development policies and programs to add value to their forest resources. A common goal identified in their study is the desire to attract new value-added industry or to expand an existing wood products manufacturing industry base. In the value chain, after primary (lumber, plywood, particleboard, etc.) and semifinished products (hardwood dimension, millwork, furniture parts, etc.), one additional step in the chain is the production of furniture.

As Cohen and Goudie (1995) point out, the major wood-using segments of the U.S. furniture industry are U.S. Department of Commerce SIC (Standard Industrial Classification) 2511, wood household furniture, except upholstered; SIC 2512, wood household furniture, upholstered and; SIC 2521, wood office furniture. Within these categories, there are a myriad of products with a diverse range of styles, finishes, and quality to suit any consumer. Wood household furniture dominated

these three categories in 1989 in terms of value of shipments, value added in manufacture, and number of employees (U.S. Department of Commerce 1992). Cohen and Goudie (1995) cite a 1989 study by Meyer et al. (1992a) in which the South was reported as the largest U.S. regional consumer of hardwood and softwood lumber, particleboard, medium density fiberboard, and plywood in the production of furniture.

This research was undertaken to provide a comprehensive analysis of the Southern U.S. furniture industry (upholstered, nonupholstered, and office furniture). The study had two objectives: 1) to provide a better understanding of the structure of the industry, and 2) to provide information that can help to attract additional firms or otherwise expand the furniture industry in the South. This study identifies success factors and impediments to development as well as factors that influence industry location decisions.

METHODOLOGY

The sample frame for the study consisted of furniture manufacturing firms in the South

United States¹ in SIC (Standard Industrial Classifications) 2511, wood household furniture, except upholstered; SIC 2512, wood household furniture, upholstered; and SIC 2521, wood office furniture. A random sample of 1,170 companies in these SIC categories was drawn from the 1994 PhoneDisk PowerFinder CD-ROM directory (Database America Companies 1994). The study was conducted using mailed surveys. The survey instrument was modified from a 1995 study that examined the structure of the hardwood dimension and wood component industries (Vlosky 1995). Survey development and implementation followed methods and procedures recommended by Dillman and described as the Total Design Method (TDM) (Dillman 1978). Accordingly, mail questionnaire procedures included pre-testing, presurvey notification of the initial mailing, a postsurvey reminder, and a second survey mailing. Of the 1,170 surveys mailed, there were 113 usable returned surveys resulting in an adjusted usable response rate of 10%. Previous studies have shown that response rates from general U.S. populations may be expected to be between 15% and 35% (Adams 1986; Boyd et al. 1981; Donald 1960; Hochstim 1967). Moreover, obtaining acceptable industrial survey response rates is often more challenging due to the added difficulties in locating appropriate key respondents *a priori* (Hansen et al. 1983). Accordingly, a response rate of 10% should not be considered a significant detriment to the study. Furthermore, as discussed in the following section on response bias, respondents do not differ significantly from the balance of the companies contained in the sample frame.

NONRESPONSE BIAS

Nonresponse bias was measured using a two-tailed *t*-test conducted on percent of companies by state, comparing respondents and com-

¹ Texas, Arkansas, Mississippi, Alabama, Georgia, Florida, South Carolina, North Carolina, and Louisiana.

Average 1994 Sales By Company

Percent By Sales Category

(n=106 companies)

Sales Ranges are in \$1,000

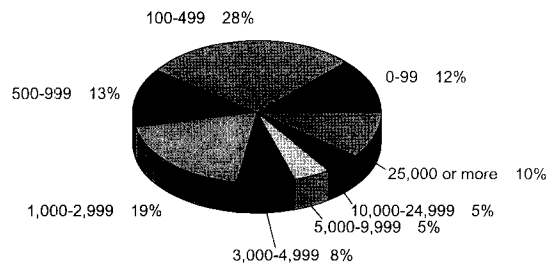


FIG. 1. Average 1994 sales by company. Percent by sales category (n = 106 companies). Sales ranges are in \$1,000.

panies that fell into the nonresponse/undeliverable category. No difference in state distribution was detected at $\alpha = 0.05$. In addition, research has shown that late respondents typically respond similarly to nonrespondents. Accordingly, second mailing respondents, as a proxy for nonrespondents, were compared to first mailing respondents by state of origin. In this case as well, no difference in state distribution was detected at $\alpha = 0.05$. Because *a priori* information on company size or sales was not available, nonresponse bias tests were not conducted on these factors.

RESULTS

Profile of respondents

Total 1994 respondent corporate sales were \$702.1 million, with an average of \$5.3 million. Fifty-three percent of respondent companies had less than \$1 million in sales in 1994 (Fig. 1). Upholstered furniture represented 49% of total respondent sales revenue, followed by household furniture (40%) and office furniture (11.2%). In 1994, respondent companies employed 10,986 people. Upholstered furniture respondents represented 55.7% of total employees, followed by household furniture (34.3%) and office furniture (10%).

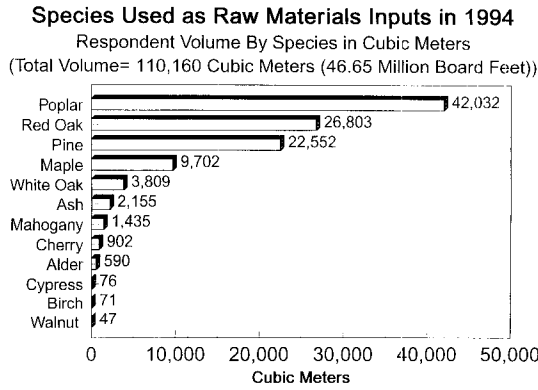


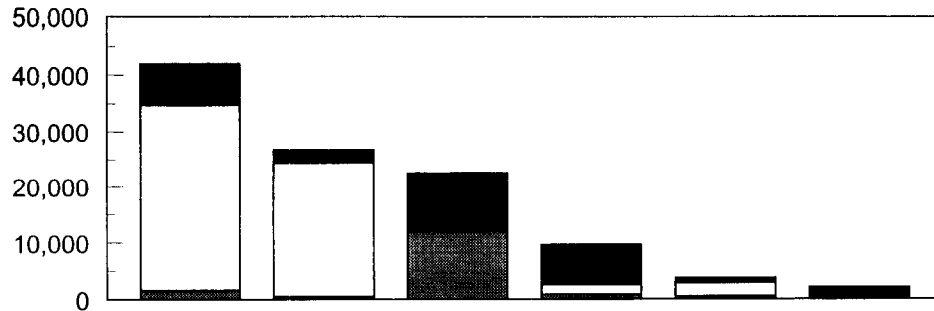
FIG. 2. Species used as raw materials inputs in 1994. Respondent volume by species in cubic meters (total volume = 110,160 cubic meters (46.65 million board feet)).

Species used as raw materials

Study results indicate that poplar was the dominant species used by study respondents in 1994 with 38.1% (42,032 cubic meters or 17.81 MMBF) of total respondent raw material volume (Fig. 2). The most used species (by volume) by study respondents after poplar in order were red oak (24.3%), pine (20.5%), maple (8.8%), white oak (3.5%), and ash (2.0%). This contrasts with 1990 findings that red oak was the most frequently used hardwood species nationally, representing 30% of all hardwood lumber used by the industry, while southern pine in this study is consistent as being the most used softwood in the U.S. for furniture production in 1990 (Cohen and Goudie 1995) and 1991 (Anon 1993).

Figure 3 shows that for the top six species

Species Used as Raw Materials Inputs in 1994
 Total Volume Reflected By Respondents
 (Cubic Meters)



	Poplar	Red Oak	Pine	Maple	White Oak	Ash
Household Furniture ■	7,250	2,379	10,459	7,144	953	1,754
Upholstered Furniture □	33,196	23,942	71	1,765	2,377	156
Office Furniture ■	1,586	481	12,022	793	479	245
Total	42,032	26,802	22,552	9,702	3,809	2,155

FIG. 3. Species used as raw materials inputs in 1994. Total volume reflected by respondents (cubic meters).

Species Used as Raw Materials Inputs in 1994 Average Volume By Respondent Group (Cubic Meters)

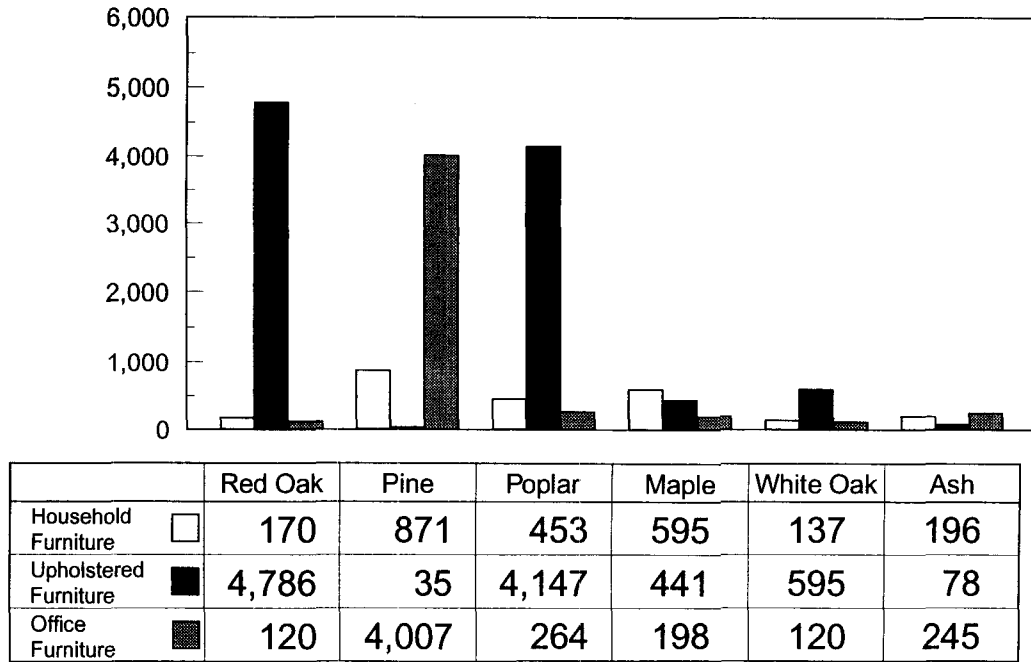


FIG. 4. Species used as raw materials inputs in 1994. Average volume by respondent group (cubic meters).

used by study respondents in 1994, the upholstered furniture sector dominated in usage by total volume for poplar, red oak, and white oak; while office furniture dominated pine and household nonupholstered furniture used more maple. Figure 4 shows average volume usage on a company basis. While the upholstered furniture sector used more red oak (4,786 cubic meters or 2,028 MBF) and poplar (4,147 cubic meters or 1,757 MBF), office furniture respondents used more pine (4,007 cubic meters or 1,698 MBF).

Wood products raw material inputs

Figure 5 shows the raw material inputs by value for each of the respondent categories. Hardwood lumber had the highest average percent by value across all categories (43.7%)

and constituted 72.6% of the raw material input value for the upholstered furniture industry. This is consistent with extensive research conducted on wood use in the furniture industry by Forbes et al. (1991 and 1993). Hardwood dimension and veneer were tied for last with only 3.8% of the total. Particleboard is the dominant raw material for office furniture (31.2%), and plywood (22.2%) is also an important input for this category.

Markets and marketing

Study respondents reported that they sold 49.6% of their 1994 production (by sales revenue dollars) to in-state customers, with 47.5% going to customers in other U.S. states and 2.9% export customers. Analysis of variance (ANOVA) using respondent SIC categories as

Raw Material Inputs in 1994 Percent By Value in 1994

	Hardwood Lumber	Plywood	Particleboard	Softwood Lumber	MDF	Veneer	Hardwood Dimension	Other
Household Furniture	35.4%	19.6%	10.0%	13.5%	5.8%	5.4%	8.7%	1.6%
Upholstered Furniture	72.6%	10.8%	0.7%	6.0%	1.2%	0.7%	2.2%	5.8%
Office Furniture	23.2%	22.2%	31.2%	1.8%	11.0%	5.2%	0.6%	4.9%
Average	43.7%	17.5%	14.0%	7.1%	6.0%	3.8%	3.8%	4.1%

FIG. 5. Raw material inputs in 1994. Percent by value in 1994.

treatments resulted in no significant differences for in-state, other U.S. states, and export markets at $\alpha = 0.05$. Office furniture respondents had the highest average percentage of sales to in-state customers (67%), while upholstered furniture manufacturers had the most sales to other U.S. states (58.6%). Office furniture respondents had the highest average sales to export markets (3.6%).

Similarly, as seen in Fig. 6, nearly 50% of respondents market their products within a 500-mile radius of their manufacturing facility, although respondents are well represented in the balance of market radius categories.

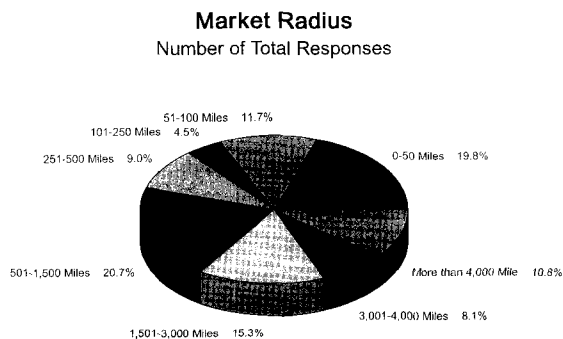


FIG. 6. Market radius. Number of total responses.

Just over half (51.6%) of respondent 1994 sales (by revenue) were shipped directly to customers, followed by wholesalers (25%), stocking distributors (15.5%), and the balance to others (mail order, contractors, retailer intermediaries). Analysis of variance (ANOVA) using respondent SIC categories as treatments resulted in significant differences for the stocking distributor distribution channel at $\alpha = 0.05$.

The office furniture respondents had the highest average percentage of direct sales (68.1%), while upholstered furniture manufacturers had the most sales to both wholesalers (30.2%) and stocking distributors (27.3%). In a study of channels of distribution in the wood household furniture industry (SIC 2511), Meyer et al. (1992b) found that 50.1% of sales were made directly to retailers and 16.4% of sales were made to wholesalers by company sales staff or manufacturers' representatives. By selling direct, the furniture manufacturer is directly involved and has more control in all aspects of the sales transaction including the ability to develop closer, long-term customer relationships (Lawser 1992).

Word-of-mouth was the promotional method most cited by study respondents, followed by, in ranked order, the use of company sales

Raw Material Supplier Selection Criteria

(n=113 companies)

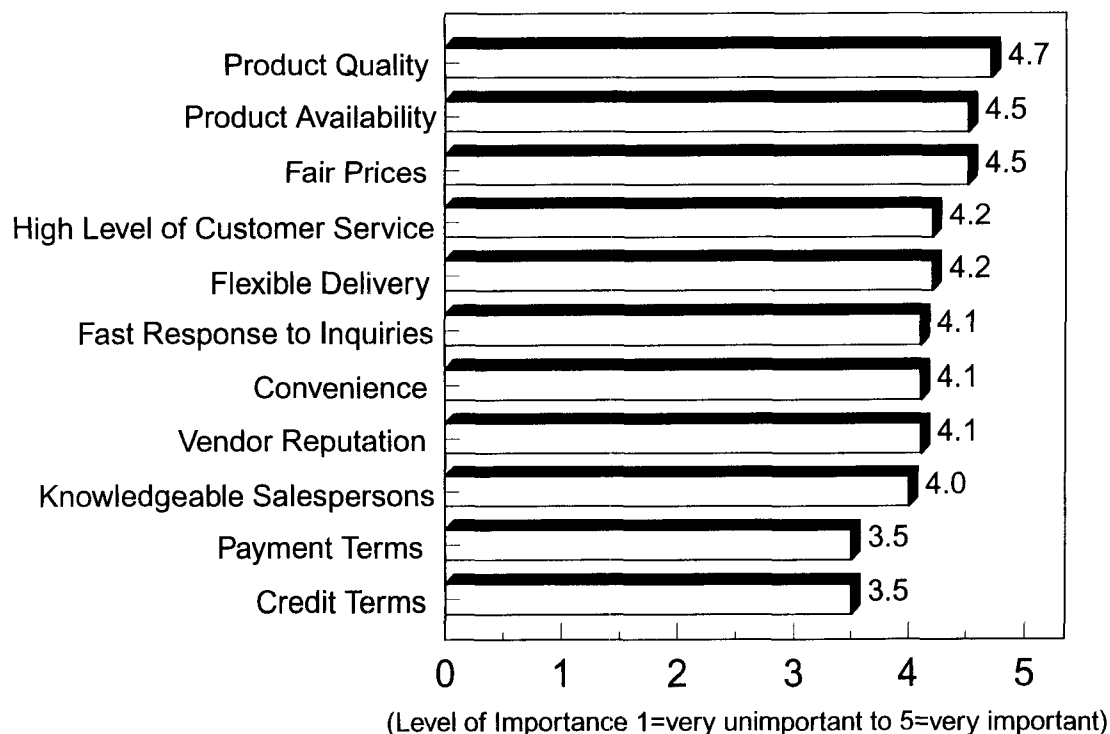


FIG. 7. Raw material supplier selection criteria (n = 113 companies).

representatives, tradeshow, catalogs, networking, magazine advertising, distributors, and industry association membership. This is consistent with studies conducted on the secondary wood products industry in Louisiana in which the hardwood wood components industry that found that word-of-mouth was the promotional method most cited (Vlosky et al. 1994; Vlosky 1996).

Raw material supplier selection criteria

In the pursuit of adding value to forest resources, program planners often encourage wood products manufacturers to source raw material from in-state raw material suppliers. This is of particular interest when raw material offerings are similar for out-of-state suppliers and in-state suppliers. These issues were ad-

ressed by study respondents. Using 5-point scaled questions indicating level of importance (1 = very unimportant to 5 = very important), respondents evaluated 11 supplier selection factors. Figure 7 shows that product-oriented criteria (product quality, product availability, and fair pricing) were the most important. The subsequent criteria are relationship and capability-oriented ones that include customer service, supplier reputation, responsiveness to customers, and flexibility in delivery. The lowest ranked criteria had to do with credit and payment terms offered by suppliers. Analysis of variance (ANOVA) using respondent SIC categories as treatments did not result in significant differences across supplier selection criteria at $\alpha = 0.05$.

Respondent rankings are consistent with one

Company Success Factors (n=113 companies)



FIG. 8. Company success factors (n = 113 companies).

study of U.S. furniture and cabinet manufacturers in which price and product quality were identified by wood component manufacturers as the two principal factors for selecting a supplier. Additional factors were on-time delivery, dependability of supply, adherence to required delivery lead time, and species availability (Anon. 1994).

Study findings suggest that an increase in raw materials supplied to an in-state customer base could support growth of value-added industry sectors. It must be noted, however, that if a state has an active and successful primary industry (e.g., sawmills) that is currently selling out-of-state primarily and also has a successful secondary industry (e.g., furniture manufacturers) that is currently sourcing raw material from out-of-state, there is not necessarily any benefit to be gained from a shift to where ex-

isting in-state sawmills supply existing in-state secondary producers.

Furniture manufacturer success and impediment factors

In order for companies to evaluate growth and expansion options, as well as for economic development planners to develop programs and policies to stimulate growth, factors that support or impede furniture industry business development were examined.

Using 5-point scaled questions indicating level of importance (1 = very unimportant to 5 = very important), study respondents were asked to rank factors that contribute to the success of their business as well as those factors that impede success in the marketplace. As seen in Fig. 8, the two most important and

Impediments to Company Success

(n=113 companies)

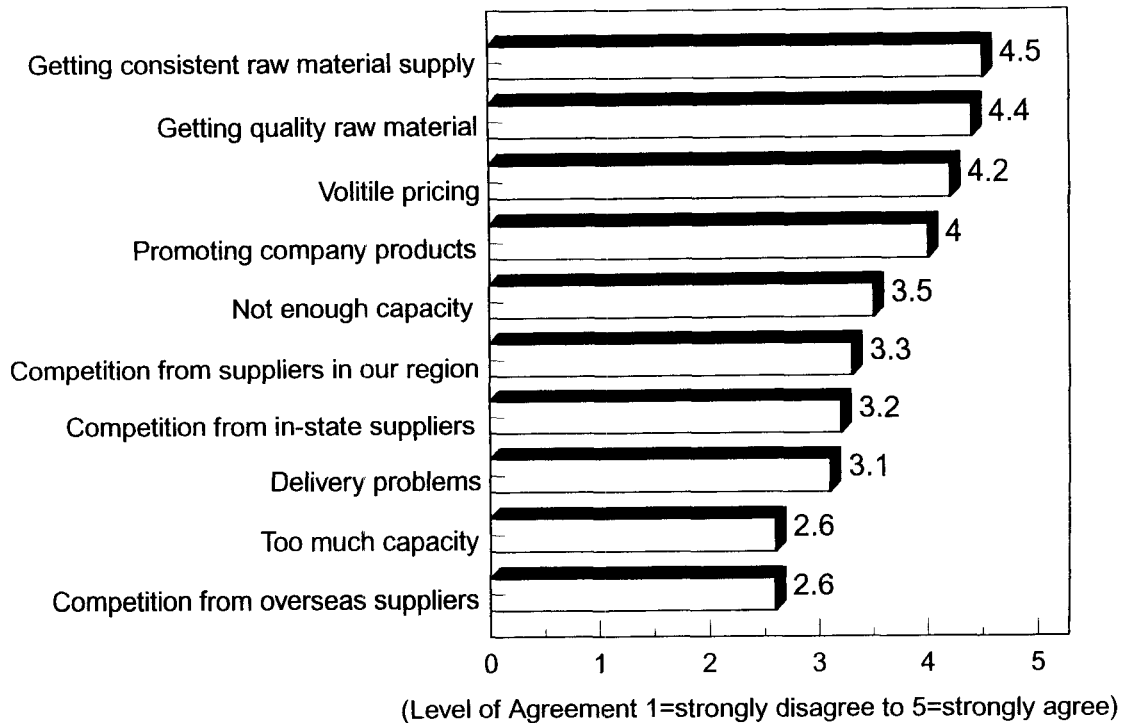


FIG. 9. Impediments to company success (n = 113 companies).

equally ranked success criteria for respondent companies are product quality and company reputation. The importance of relationship factors to company success is further indicated by the next highest ranked factors: development of long-term customer relationships and high levels of customer service. An understanding of the customer base and development of a long-term orientation can be significant factors in building or maintaining market share. Analysis of variance (ANOVA) using respondent SIC categories as treatments did not result in significant differences across company success criteria at $\alpha = 0.05$.

Respondents were also asked to assess factors that could impede success of their companies (Fig. 9). The principal obstacle is development of consistent raw material supply followed closely by acquisition of quality raw

material. This is especially important in light of the fact that raw materials make up an average of 87% of intermediate purchases in household furniture manufacturing, with wood products making up 18% of total raw material inputs (Muth and Falk 1994). Analysis of variance (ANOVA) using respondent SIC categories as treatments did not result in significant differences across company success or impediment criteria at $\alpha = 0.05$.

Industry location decision factors

Attracting companies to develop a secondary wood products manufacturing industry is a complex problem that deserves special consideration. In particular, development agencies working to attract wood industries need to know what factors are deemed most im-

Factors Influencing Expansion or Building New Facilities

(n=113 companies)

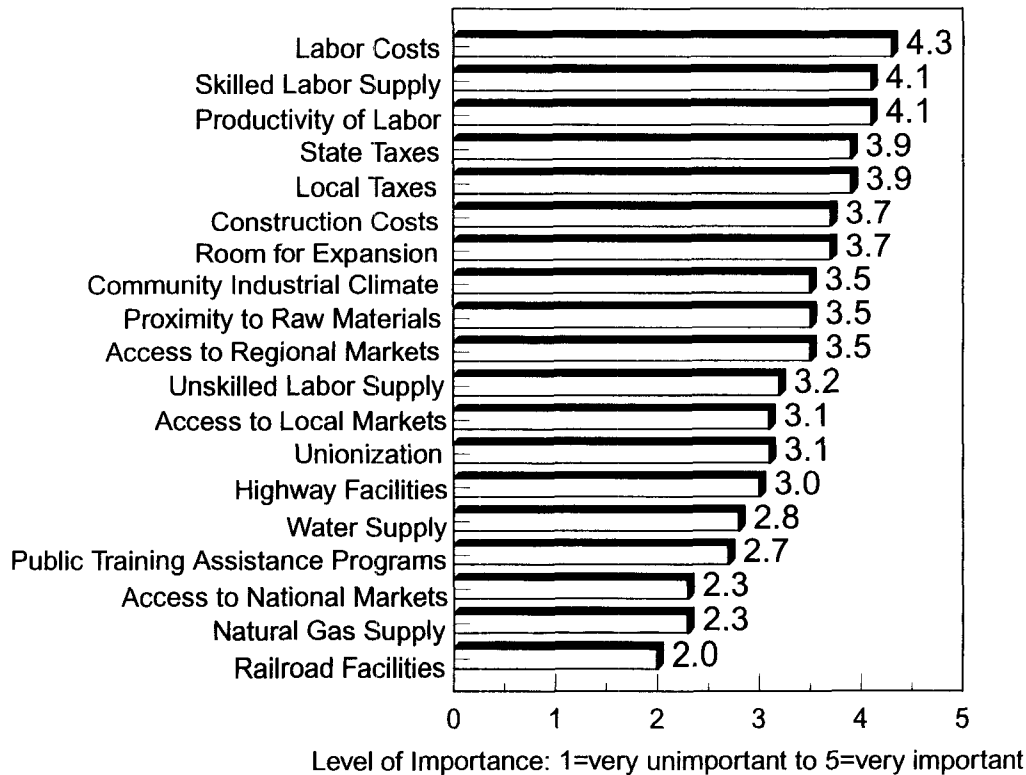


FIG. 10. Factors influencing expansion or building new facilities (n = 113 companies).

portant in making location decisions by potential immigrant firms and expansion decisions by established companies.

Research has shown that there are unique factors that help determine or explain the locations of manufacturing industries. A number of empirical studies have been done on reasons for industrial locations. Generally, these have found that access to markets (including cost and logistics of transportation), labor supply factors, and raw-material supply are dominant location determinants (for example Blair and Premus 1987; Calzonetti and Walker 1989; Goldstein 1985; Kieschnick 1981; Morgan 1967; Schmenner 1980).

Beyond purely economic rationale for company location decision-making, noneconomic variables may also be important. Behavioral

factors seem to be particularly important when economic differences among decision alternatives are minimal and/or when the decision-maker lacks the resources necessary to conduct a thorough analysis. For example, McKee (1989) cites Nason et al. (1987), who describe a two-stage process: economic factors dominate in choosing broad regions, while behavioral factors predominate in choosing locations within the selected region.

Bullard and Seldon (1993), in a study of economic development in the upholstered furniture industry, found that comparative advantage can be achieved if policies to attract companies to an area emphasize the capital, labor, and raw material costs of production issues.

This study attempted to address a cross section of factors in each of these categories. Nine-

teen factors that influence industry expansion for existing companies or location decision criteria for companies considering immigration were analyzed. Five-point scaled questions indicating level of importance (1 = very unimportant to 5 = very important) were used.

As seen in Fig. 10, labor issues (cost, supply, and productivity) are most important to study respondents. As Muth and Falk (1994) point out, furniture production is very labor-intensive and is often impacted by shortages of skilled workers. For example, they point out that between 1958 and 1991, production workers in the household furniture industry comprised 85% of all employees.

Subsequent factors, in order of importance, are: a favorable tax structure, construction costs, room for expansion, and an amenable community industrial climate. Analysis of variance (ANOVA) using respondent SIC categories as treatments did not result in significant differences across these criteria at $\alpha = 0.05$.

These findings diverge somewhat from results reported by Jones et al. (1992), who indicated the most important location decision factor for furniture and flooring manufacturers was securing an adequate wood raw material supply. This was followed by access to markets, personal considerations (attitudes towards industry and personal ties to the area), labor costs and availability (low wages, high productivity, and adequately skilled labor), service utilities, and finally, taxes and regulations. Differences in findings seem to imply that raw material supply is a given in this study and that respondents are emphasizing other factors of production in location decision-making.

SUMMARY

In addition to giving an overview of the furniture industry in the U.S. South, this study examines a myriad of factors and issues that affect industry growth and development. Current or potential entrants to the furniture industry might find this information useful in making strategic decisions. In addition, in-

dustry sector development planners may find the information useful in developing recruitment or homegrown industry development initiatives.

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