OPPORTUNITIES FOR HORIZONTAL DIVERSIFICATION IN MANUFACTURING VALUE-ADDED WOOD PRODUCTS

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ABSTRACT

A study of equipment usage in the Louisiana secondary wood products industry was conducted in 1994. The objectives of this study were to 1) determine machine usage rates by value-added industry sector and; 2) identify commonalities of machine center usage between industry segments.

For the purpose of this analysis, if more than 10 companies produced a product, it was considered a separate value-added wood industry. Five separate value-added industries were identified using this scheme: kitchen cabinets, millwork, household furniture, bathroom cabinets and pallets.

Differences between equipment usages in companies of different sizes and between industry sectors were statistically analyzed.

There are two main implications from identifying the most frequently used machines in and between industry sectors. The first is in the area of developing secondary industry training and development programs. Specific machine center training can be aligned to targeted markets and products. Second, companies considering horizontal diversification can determine the degree of machine center commonality between industry and product segments.

OBJECTIVES

1. Determine machine usage rates by value-added industry sector.
2. Identify commonalities of machine center usage between industry segments.

METHODOLOGY

Data for this study came from a study of the Louisiana secondary wood products industry conducted by the Louisiana Cooperative Extension Service and the Louisiana Forest Products Laboratory at the Louisiana State University Agricultural Center. Structured mail questionnaires were sent to 713 companies with a resulting response rate of 26 percent (187 companies).

For the purpose of this analysis, if a product was produced by more than 10 companies, it was considered a separate value-added wood industry. Companies in each industry sector were grouped into four groups based on their 1994 annual sales volume: over $5 million; $5 to $1 million; $150 thousand to $1 million and; under $150 thousand.

Next, for each industry sector and for each sales group within sectors, the percentage of companies using a given machine was calculated. These usage percentages were averaged across all company sizes for given industry sector, ranked and plotted in descending order by percentage. Analysis of machine usage by various industry sectors by company size was then conducted.

All statistical comparisons were done using two sample, two sided t-tests assuming equal variances at 0.05 significance level. Comparisons were made to discern differences in machine usage between companies of different sizes for each industry segment. Comparison of equipment usage for all company sizes across industry segments were also made.

RESULTS

Respondent companies produce a total of 43 different products. Five separate value-added industry sectors were identified (ranked by number of companies producing a given product as their primary or secondary product): kitchen cabinets (61), millwork (30), household furniture (16), bathroom cabinets (12) and pallets (11). The next five highest-ranking industry sectors not included in this analysis were: replica furniture (7), signs (6), doors (6), custom furniture (5) and wood office furniture (4).

There were no significant differences in equipment usage for companies of different sizes within kitchen cabinets, household furniture and bath cabinets industry sectors.
In the millwork industry, large companies significantly differ from the three other company size categories in terms of equipment usage. This difference is in specialized equipment that smaller companies typically cannot afford. There is no significant difference between the three smaller company size groups.

The pallet industry segment did not have any companies in the largest company size category. A significant difference was found between the second and third largest company size categories.

Comparison of average equipment usage for all company size categories across all industry sectors confirms previous results. The only significant difference in equipment usage is between the pallet and all other industry sectors. Non-pallet industry sectors are not significantly different in equipment usage.

Top 10 Machines Used In the Louisiana Secondary Wood Products Industry (Number of Responses; Multiple Responses Allowed) were:

1. Table saw
2. Planer Band saw
3. Router
4. Radial arm saw
5. Drill press
6. Jointer
7. Shaper
8. Lathe
9. Moulder
10. Panel saw

IMPLICATIONS

1. There are two main implications from identifying the most frequently used machines in and between industry sectors. The first is in the area of developing secondary industry training and development programs. Specific machine center training can be aligned to targeted markets and products.

2. Second, companies considering horizontal diversification can determine the degree of machine center commonality between industry and product segments.