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SPECIES SUBSTITUTION POTENTIAL IN SOME TWIN CITIES INDUSTRIAL WOOD USES

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Industrial firms using lumber in the Minneapolis-St. Paul metropolitan area utilize a variety of species in meeting their needs. Species requirements are usually highly specific for specialized uses such as sporting goods manufacture but allow the opportunity for substitution among species for more general kinds of uses such as shipping containers. To study the aspect of species substitutability among industrial lumber users in the Twin Cities area, information was gathered from 224 firms during February-May, 1966.

In personal interviews, answers to the following two questions were sought from a knowledgeable person with responsibility for the firm's decisions in the material procurement area.

1. Why do you use this species?
2. Could other species be used in its place?

Firms using more than one species responded for each species used, accounting for a total of 393 responses to each of these two questions. The results are shown in Figures 1 and 2.

Figure 1. Reasons for choice of species used.

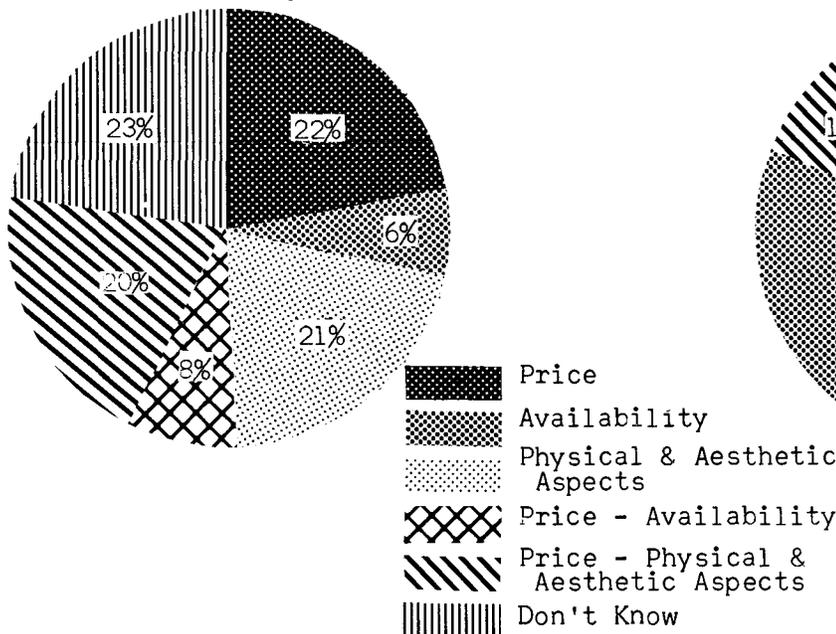
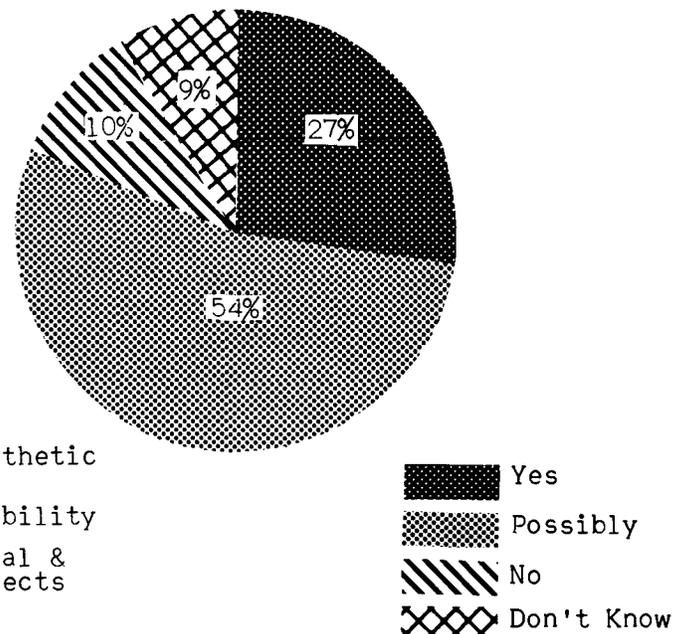


Figure 2. Potential for substituting for species being used.



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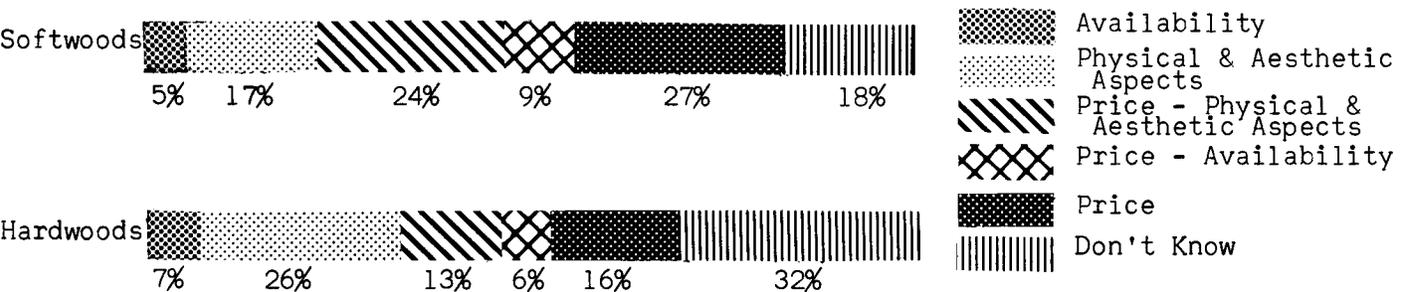
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Both questions, as they were asked, were open-ended questions, with the answers later categorized. There were essentially three separate reasons given for use of species: price, availability, and physical and/or aesthetic aspects. Additional reasons recognized were paired combinations of these three individual replies. Considering these interactions, 50% of the reasons given for using a particular species were at least partially price associated.

When asked about substitutability in only 10% of the cases was the possibility of use of some other species ruled out. Most of the remainder represents at least potential targets for Minnesota species where they were not already being used. Approximately 6 million board feet of lumber is presently supplied by out-of-state sources to this group of users annually. In addition, these users consume 5½ million board feet of Minnesota lumber, 90% of which goes into shipping uses (pallets, crates, dunnage, etc.). The potential market of 6 million board feet also falls significantly into the shipping use category, with over 60% of this quantity being utilized in this manner. Ponderosa pine and Douglas fir, coming from the West, represent by far the greatest source of out-of-state supply, while miscellaneous hardwoods from the South, East, and other Lake States contribute only 20% of the 6 million board foot figure.

For some users, softwood and hardwood lumber are interchangeable. The following data reveal that price was the most common criterion influencing selection of softwood lumber, while physical properties and appearance were more often cited as leading to hardwood lumber selection. Figure 3 illustrates this point. In the instance of hardwood, much end use by a final consumer rather than industrial shipping use placed significant weight on the physical or aesthetic characteristics.

Figure 3. Relative importance of reasons for selection of softwood or hardwood lumber.



The decision for softwood selection was at least partially price associated in 60% of the cases, while price was a factor reported in hardwood selection in only 35% of the instances. In the selection of hardwood, physical and aesthetic aspects were partially responsible in 39% of the cases and in 41% of the cases for softwood selection.

When considering that the firms answering "yes" or "possibly" to question #2 alone represent a total out-of-state lumber use of some 6 million board feet per year which Minnesota, to a large extent, has the necessary resource to supply, it is evident that there are significant possibilities for species substitution by Twin Cities industrial users. However, it will be necessary to work with individual firms if a significant increase in the use of Minnesota species is to be expected.