

Measuring Innovativeness in North American Softwood Sawmills

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Description: An investigation of innovativeness in North American softwood sawmills

Methods: Mail survey with a response rate of 18%.

Data Source: 167 managers at 85 sawmills

Key Findings:

- Respondents rated their mills higher on process innovativeness than product or business systems innovativeness
- Respondents rated the organizational climate of their mills as favorable for innovation
- A propensity to create new processes was significantly related to sawmill performance.
- Current technology was not significantly related to sawmill performance.

Introduction

Research on the relationship between firm performance and innovativeness has generally shown that more innovative firms perform better financially. Innovativeness is the propensity of a firm to create and/or adopt new products, processes or business systems. The innovativeness of the firm impacts how the firm addresses challenges and problems, affecting the ability of the firm to survive and be successful in the future. In previous research, several methods have been used to measure firm innovativeness, including current firm technology, intellectual property, R&D spending, quantity of new inventions, number of inventions adopted, and self-rating by employees. Innovativeness is important because it is something that managers have considerable ability to control.

Study Measures

Innovativeness. Innovativeness was measured using three methods: (1) self-rated innovativeness scale where respondents assessed product, process and business systems innovativeness for their mill with 1=not innovative at all and 5=very innovative; (2) propensity to create and adopt scale where 25 items were used to assess the mill's propensity to create and/or adopt new products, processes and business systems with 1=disagree and 5=agree; and (3) current sawmill technology where respondents indicated the current technology used in the mill and the date of adoption of each technology. **Organizational Climate for Innovation.** Organizational climate for innovation was measured using a 10-item scale

where 1=disagree and 5=agree. **Sawmill Performance.** Sawmill performance was measured using sales, sales growth, cash flow and gross profit relative to the competition.

Results

Descriptive information for the responding mills can be seen in Table 1 and Figure 1.

Table 1. Number of employees and annual production volume for responding sawmills.

	Mean	Max	Min
# of employees	112	695	2
Annual production (MMBF)	90	445	<1

A wide size range of mills is represented in the study, as measured by the number of employees and annual production. Also, mills processing all of the major softwood species groups are represented in the sample, representing approximately 10% of total North American softwood lumber production volume.

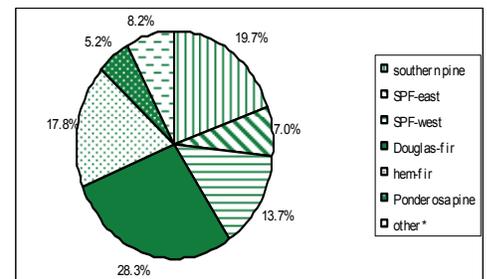


Figure 1: Relative volume of production by species for responding sawmills.

Figure 2 shows the results of the three measures of innovativeness. Self-rated innovativeness was generally rated lower than the propensity to create and/or adopt. Respondents also rated process innovativeness higher than product and business systems, with only the propensity to create new processes, the propensity to adopt new processes and the self-rated process innovativeness measures being significantly higher than the midpoint of the scale (3). Product innovativeness was significantly lower than the midpoint of the scale. This result is consistent with previous research. On average, the composite of both of these scales was not found to be significantly differ-



ent from the neutral point, meaning that respondents do not view their sawmill as particularly innovative.

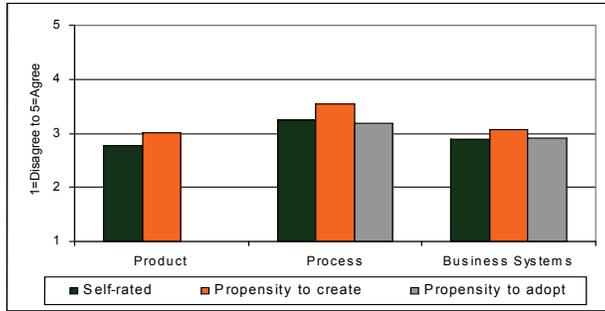


Figure 2: Results of self-rated and propensity to create and adopt measures of innovativeness in the North American sawmilling respondents.

Figures 3 and 4 provide a summary of the current technology existing at responding mills. On average, respondents feel that the organizational climate was favorable for innovation, with an average rating of 3.8. This result is important as previous research has shown the importance of having the right organizational climate to promote firm innovativeness.

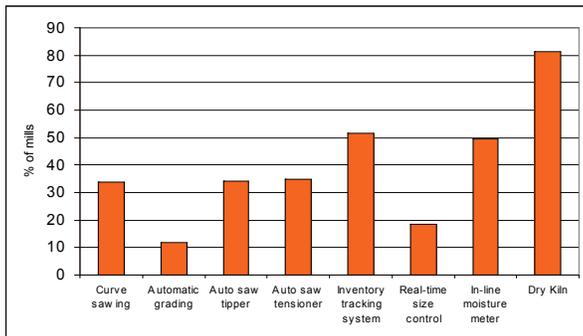


Figure 3: Summary of current technology responding mills.

Regression analysis was used to determine if a relationship exists between firm performance and innovativeness. The results showed that the propensity of a firm to create new processes was the only measure of innovativeness that was significantly related to firm performance, showing that as the propensity to create new processes increased, the performance of the firm improved. Current technology used in the mill, the most commonly used measure of innovativeness in the forest products industry in the past, did not have a significant relationship with firm performance.

There was a significant, positive relationship between a climate for innovation and both the self-evaluated and propensity to create and adopt measures of innovativeness. This result reinforces previous research showing that an organizational climate favorable for innovation is a necessity for creating an innovative company.

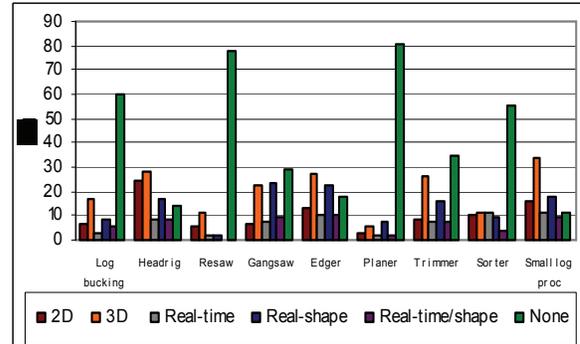


Figure 4: Summary of scanning equipment use by machine centers at responding mills.

Managerial Implications

The results of this study show that there is room for the North American softwood sawmilling industry to increase its focus on innovativeness. This is particularly true for product innovativeness, which respondents rated as the lowest aspect of innovativeness.

While firms currently put more focus on process innovativeness than other types, previous research has shown that having a balanced focus on all types of innovativeness can be beneficial to financial performance. By having a balanced focus on product, process and business systems innovativeness, firms not only have the ability to remain competitive, but also have the potential to create new competitive advantages in all aspects of their business. The results of this study confirm previous research and show that focusing only on new processing technology may not be the most effective strategy. Firms that were innovative in all three areas, product, process and business systems, performed better than firms with a focus on manufacturing processes.

While the results show that there is room for improvement for firms in the softwood sawmilling industry regarding all aspects of innovativeness, managers should keep in mind that the innovative focus of the organization must be coherent with the firm's strategic orientation. Consequently, changes in firm strategy may be required to successfully implement a new innovative orientation.



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