INNOVATION PROFILES OF CROATIAN FURNITURE INDUSTRY COMAPNIES

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Introduction

Why furniture industry?	Why innovation?
… is a value-added sector …	… Is a metric for economic growth …
… was a proud part of the industrial landscape …	… is necessary for firms to survive …
… is a significant and profitable segment of economy …	… is an important source of competitiveness …
… loss of market share and decline of domestic consumption …	

Croatian furniture industry

… indicates the needs for changes in the form of application new technologies, new products and new business activities

in last few years some changes have been made regarding product, process and business improvement and/or development

… a one third of total revenue generated in 2008 and 2009 came from sales of new/improved products …

… it is almost impossible to find industry branch which does not include **INNOVATION** and **INNOVATIVENESS** in its development …

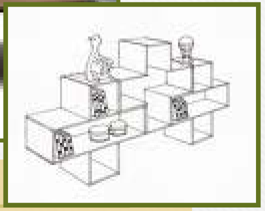
continous

occasional

- Innovation has become very important tool for firm competitiveness and long-term firm success will depend on firms' abilities to be innovative (Leavengood, 2009)

- Adapting changes in competitive markets through innovation is necessary for firms to survive (Bullard and West, 2002).

The Study



Objective: The aim of this paper was to define profiles (clusters) of Croatian furniture industry companies regarding innovations by using internal and external firm factors

Data Collection:

- Mail-based survey following Dillman (2007)
- Furniture manufacturers randomly selected
- Quantitative data used;
- 77 useable responses-adjusted response rate of 24.2%

Variables used for Cluster analysis

INTERNAL COMPANY FACTORS	EXTERNAL COMPANY FACTORS
Company revenue in 2009	Number of wood raw material suppliers
The percentage of costs in 2009 total company revenue	Number of customers
The percentage of 2009 company revenue that came from sales of new/improved products	Co-operation with customers in designing new products
The average age of company large capital item manufacturing machines	Co-operation with customers in improving design of existing products
The share of employees aged up to 30 years	Characteristics that companies advantage when choosing suppliers – delivery time; availability of material and high level of service
Categories of company's manufacturing processes	
Using computer programs in production costs planning	
Using the Internet in a variety of business activities	
Using of CNC (Computer Numerical Control) machines	
Using of CAD (Computer Aided Design) programs	
Using 3D visualization technology for product presentation to customers	

Results

I.) Analysis of furniture producers

To get the minimum number of company clusters which differ according to the internal and external factors

Distribution of Clusters

Type of Cluster	Number of companies N	Percentage (%)
Cluster 1	21	29,6
Cluster 2	32	45,1
Cluster 3	18	25,4
Total in Clusters	**71**	**100,0**
Not used for analysis	6	
Total	77	

Cluster 1 –SMALL TRADITIONAL COMPANIES

- mostly have up to 10 employees
- income up to 1.000.000 kn (0,1 mil. EUR)
- use large capital machines between 6 and 15 years
- few of them use CAD and CNC technologies and 3D technologies
- up to 10 suppliers of wood material
- up to 30 customers
- level of developed cooperation with customers in designing and improving products is lower in comparison to companies belonging to Cluster 1 and 2

Cluster 2 – INNOVATIVE COMPANIES

- Mostly have up to 25 employees
- Income up to 10 million kn (cca. 1.4 mil. EUR)/51% has income up to 5 million kn (cca. 0.7 mil. EUR)
- Use large capital machines up to 5 old age
- Use CAD and CNC technologies and 3D technologies
- up to 10 suppliers of wood material
- more than 30 customers
- a high level of cooperation with customers in new products development and /or improving of the existing products
- close collaboration with named (famous) Croatian and foreign designers

Cluster 3 – BIG FURNITURE COMPANIES

- Up to 100 employees
- Income more than 40 million kn (cca. 5.5 mil. EUR)
- Use large capital machines between 6 and 15 old age
- Use se CAD and CNC technologies and 3D technologies
- Have more wood material suppliers in comparison to companies from two other clusters
- Lower level of cooperation with customers in new products development and /or improving of the existing products in comparison to Cluster 2

II.) Innovation and Clusters

One –way ANOVA

↓

Post-hoc Test
(LSD test)

Obtained clusters were found to be significant* regarding the types of innovation

PRODUCT INNOVATION (F=3,651; p=0,031) – accent is on companies in CLUSTER 2 (p=0,013)

PROCESS INNOVATION (F=7,168; p=0,001) – accent is on companies in Cluster 2 (p=0,001) and Cluster 3 (p=0,004)

BUSINESS INNOVATION (F=4,753; p=0,012) – accent is on companies in Cluster 2 (p=0,004)

*at α=0,05 significance level

Summary

- three profiles (Clusters) of Croatian furniture manufacturing companies were defend: 1) Small traditional companies (Cluster 1); 2) **Innovative companies** (Cluster 2), and 3) Large furniture manufacturing companies (Cluster 3)
- Innovative companies profile: small number of employees (up to 25 people), revenue up to 1.4 million EUR; custom made production; using CAD and CNC technology; have good and close cooperation with their customers in designing new or/and improving existing products

Innovative companies in Croatian furniture industry exists, but due to excessive market opportunities and possibilities, managers, directors, and executive staff still do not recognize the right way which will take them to so desired step ahead of the competition!

Questions? Comments?