

# How often the Industries Introduce New Products to the Market: Wood Industries of FB&H Results

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## **Abstract**

In this paper, we focused on thirty-five secondary Wood industries from Federation of Bosnia and Herzegovina, whose main activity is final processing of wood, with the help of wood industries we have examined how often the wood industry introduced new products to the market of Federation of Bosnia and Herzegovina and for what period of time introduce the new products. Based on the results of explored we found five secondary wood-processing industry, which are in the shortest period introduce new products.

**Keywords:** Secondary Wood Industries, New Product

## **1. Literature review**

According to Ilić (2011) today, wood industry of Bosnia and Herzegovina presents sole industrial branch which in foreign trade has recorded a deficit. Industrial tradition and solid timber base are representing basic strengths of this industry. Nevertheless, further capitalization of comparative advantages of Wood industry can be slowed down due to changed perception of final consumer in Europe, exponentiation of ecological acceptable products, additional requirements in terms of certificates for massive wood (FSC), design changes, etc. Problem with low added value to final products, weak brand of country of origin, lack of brand of Wood industry, desperation of capacities, lack of cluster of Wood industry are only part of major problems this industry will face in coming years.

Hadžić, Avdić&Strik (2013) wood industry occupies an important place in the economy of Bosnia and Herzegovina. Wood industry in Bosnia and Herzegovina should be viewed from two perspectives: perspective of primary and semi-processing and final manufacturers.

According to statistics Wood industries of Bosnia and Herzegovina take place among the most important sectors exporting country of Bosnia and Herzegovina, on the basis of realized deficit Wood industry takes first place. According to Indirect Authority of Bosnia and Herzegovina, the Wood industry of Bosnia and Herzegovina in 2009th year has made exports of 653.913.365 KM, what is 12% less than 2008th year and 15% less than 2007. Exports of products in the group of wood and wood products (primary and semi-processing wood) accounted for 59,9% of total

exports, while export of final product accounted for remaining 40,1% (Institute for statistics of FB& H, 2015).

Wood industry of Bosnia and Herzegovina to 1992nd year accounted for 10% of the GDP (approx. US \$ 3 billion) and 11% of B&H exports. Capacity of the Wood industries in Bosnia and Herzegovina consisted of 220 different medium and large companies, mostly organized within Šipada and Krivaja. Wood industry employed around 61.000 employees or 13% of total number of employees in industry and mining, primary processing 15.000 and final processing 46.000 employees. The range of Wood industry consisted of a variety of products, according to available data for 1991st year, in Bosnia and Herzegovina annually produced products in quantitative as shown in the table below:

**Table 1.** Capacity of Wood industry of Bosnia and Herzegovina in 1991st year

Product	Amount	Unit
Lumber of sawn and sawmills	2.000.000	m <sub>3</sub>
Plywood	70.000	m <sub>3</sub>
Panel boards	37.000	m <sub>3</sub>
Fiberboard	47.000	m <sub>3</sub>
Chipboards	223.000	m <sub>3</sub>
MDF boards	89.000	m <sub>3</sub>
Veneer	90.000	m <sub>3</sub>
Construction carpentry	1.650.000	pieces
Parquet	1.450.000	m <sub>2</sub>
Floors and coverings	500.000	m <sub>2</sub>
Wooden houses	250.000	m <sub>2</sub>
Wooden packaging	300.000	m <sub>3</sub>
Sets of furniture	50.000	set
Other furniture	5.700.000	piece
Matches	200.000	piece
Wicker products	1.500.000	piece
Cork	350	tons
Cork products	600	m <sub>3</sub>

Source: Foreign Trade Chamber of Bosnia and Herzegovina, 2013

Today according to official data, forests and forest land in Bosnia and Herzegovina cover an area of approx. 2.709.800 hectares, including 53% of the country of which: (Federalno ministarstvo poljoprivrede vodoprivrede I šumarstva, 2015)

- ✓ State-owned approx. 2.186.300 hectares and
- ✓ Privately owned approx. 523.500 hectares.

**Table 2.** Available growing stock in m<sub>3</sub> in Bosnia and Herzegovina

Categories of forests		Surface Hectares	Growing stock in m <sup>3</sup>	
Nazivi šifrat. Šuma	Types of trees		On the whole surface	per 1 hectar
All the high forests FB&H	Softwood		68.060.100,0	
	Hardwood		74.340.149,0	
	<b>Total</b>	<b>602.997,3</b>	<b>142.400.249,0</b>	<b>236,1</b>
All the high forests RS	Softwood		70.309.000,0	
	Hardwood		92.402.000,0	
	<b>Total</b>	<b>548.566,0</b>	<b>162.711.000,0</b>	<b>296,6</b>
Coppice FBiH	Softwood		0,0	
	Hardwood		19.357.747,0	
	<b>Total</b>	<b>279.436,1</b>	<b>19.357.747,0</b>	<b>69,3</b>
Coppice RS	Softwood		81.000,0	
	Hardwood		18.929.000,0	
	<b>Total</b>	<b>174.310,0</b>	<b>19.010.000,0</b>	<b>109,1</b>
<b>Total of high forests and coppice FBiHi RS</b>	<b>Softwood</b>		<b>138.450.100,0</b>	
	<b>Hardwood</b>		<b>205.028.896,0</b>	
	<b>Total</b>	<b>1.605.219,4</b>	<b>343.478.996,0</b>	<b>213,98</b>

Source: Information of forest management in FB&H in 2009th year

According to Iličić (2011) it is estimated that annual production of the sector amounted over 900 million KM, with more than 2/3 exported to foreign markets. Wood industry in Bosnia and

Herzegovina with its resources is one of the most important branches of industry, and main feature is production of following products:

- ✓ Furniture elements,
- ✓ All kinds of furniture (upholstery, solid wood, plate, bedrooms, living rooms, children's rooms, kitchen, dining room, office furniture, furniture for schools and kindergartens, hall, garden furniture),
- ✓ Construction carpentry,
- ✓ Parquets and Floors,
- ✓ Lumber
- ✓ Wooden construction,
- ✓ Massive boards,
- ✓ Pallets and wooden packaging material.

Iličić (2011) explains some of the important factors for improving the process of work in Wood industries in Bosnia and Herzegovina:

- ✓ In general low level of technological development of the Wood sector in Bosnia and Herzegovina can result in low quality of products and or low productivity, what results decreases in sales price and total revenue. Outdate technology and capacity utilization, as well as underdevelopment of higher levels of processing; make the total income of the industrial Wood processing lower in relation to the raw material potential.
- ✓ Establishment of wood cluster is one of the preconditions of development Wood industry in Bosnia and Herzegovina. The main objective of the cluster should be maximizing the utilization of existing capacity, work on the original design and the opening of large customers. With this approach, the Wood industry would make a positive synergy effect because, apart from a few large systems, the rest of the industry atomized, without their own capacity for serious export.
- ✓ The establishment of laboratories to test the quality of wood products, as well as specialized professional programs and training, encouraging life-long learning of employees in the wood processing industry, wood industry and connect with industrial designers and marketing experts are currently not at a satisfactory level, and should be further encouraged.
- ✓ Low utilization of production capacities, especially in primary Wood processing (many sawmills), significantly influence the business results. The qualification structure of employees in Wood industries in Bosnia and Herzegovina, in comparison with Croatia and Slovenia, it is very unfavorable. Staff with high level education employed in Wood industries at least in Bosnia and Herzegovina (approx 2%), Croatia (approx. 4%) and Slovenia (approx. 6%).

Today high level education institutions of Wood- industrial direction in Bosnia and Herzegovina enroll approx. fifty students per year, and labor market annually has available ten to fifteen new engineers and graduated engineers of Wood profession, which is twice less than in 1991th year (Iličić, 2011).

Currently Bosnia and Herzegovina contains about one thousand and five hundred sawmill capacities compared to sixty one sawmills before 1991th year. Smaller mills usually are not able to produce a large quantity of wide range material and high quality that is required in the export market, so most of them are focused on local market (Iličić, 2011).

**Table 3.**Capacity of Wood industry in Bosnia and Herzegovina 1991 - 2005th year

Type of Industry	Total number of buildings of Wood processing industry for Bosnia and Herzegovina	
	1991	2005
Sawmills, Veneer	61	1500
Plywood / Plate elements	47	35
Cellulose and Paper	3	0
Carpentry / Windows and Doors	30	183
Furniture	50	37
Other / Panels, Special elements	31	23
<b>Total number of Wood processing Industry</b>	<b>222</b>	<b>1700</b>

Source: Iličić, 2011, p. 8

## 2. Data and Methodology

The target population consisted of thirty five secondary wood manufacturing companies from Federation of Bosnia and Herzegovina that have the biggest influence on new product development. According to Institute for statistics of FB&H, 2016 number of registered Wood manufacturing companies is one hundred and thirteen including primary and secondary Wood manufacturing companies.

**Table1.** Number of registered Wood manufacturing companies

No.	Name of the Wood companies	ID number	Stat.code	Canton	Year
<b>PRIMARY WOOD PROCESSING COMPANIES</b>					
1	"KLEJTON" DOO Hadžići	420009454000 7	16.10	9	2014
2	"XYLON CORPORATION" d.o.o. Ilijaš	420014156000 3	16.10	9	2014
3	"HULIO No 1" d.o.o. Ilidža	420049839000 9	16.10	9	2014
4	"ALBA - UNIPROM" d.o.o. SARAJEVO	420063017000 5	16.10	9	2014
5	"HRASTIK" d.o.o. ŽIVINICE	420902086000 7	16.10	3	2014
6	"BRIČIĆ - GRAĐA" d.o.o. GRADAČAC, VUČKOVI	420902116000 9	16.10	3	2014
7	"MAPEX" d.o.o. ŽIVINICE	420902400000 2	16.10	3	2014
8	"REZ" d.o.o. ŽIVINICE	420902531000 5	16.10	3	2014
9	"ETAŽ" d.o.o. LUKAVAC	420904925000 3	16.10	3	2014
10	"MONCA-COMERC" d.o.o. LUKAVAC	420905417000 0	16.10	3	2014
11	"TRENICA - PROM" d.o.o. BRIJESNICA MALA	420905867000 7	16.10	3	2014
12	"RAJČANKA" d.o.o. GRADAČAC	420908378000 3	16.10	3	2014
13	"UNO-PROM" d.o.o. GRAČANICA	420909650000 0	16.10	3	2014

14	"AHMEDBEGOVIĆ" d.o.o. GRAČANICA	420914238000 6	16.10	3	2014
15	"BENPROM" d.o.o. DONJA ORAHOVICA, GRAČANICA	420915234000 2	16.10	3	2014
16	"MLINOLES" d.o.o. GRAČANICA	420916044000 8	16.10	3	2014
17	D.o.o. "MEKIĆ" GRAČANICA	420916974000 4	16.10	3	2014
18	"GALBEX" d.o.o. GRAČANICA	420919418000 5	16.10	3	2014
19	"OBRT-COMERC" d.o.o. GRAČANICA	420919701000 3	16.10	3	2014
20	"DŽAMBO" d.o.o. GRAČANICA, POSLOVNA JEDINICA BR.1 PILANA GRAČANICA	420920211002 0	16.10	3	2014
21	"DRVO-STIL" d.o.o. GRAČANICA	420922206000 2	16.10	3	2014
22	"GRAĐA PROMET DELIĆ" d.o.o. SAPNA	420922567000 6	16.10	3	2014
23	"HANIĆ" d.o.o. GRADAČAC- ORMANICA	420922958000 1	16.10	3	2014
24	"HUSANOVIĆ & CO" d.o.o. GRAČANICA	420924713000 5	16.10	3	2014
25	D.o.o. "IVADO" DONJA ORAHOVICA	420928751000 5	16.10	3	2014
26	"TURSUNPROM" d.o.o.	420928905000 1	16.10	3	2014
27	"VUČKO-KOMERC" d.o.o. GRAČANICA	420934158000 6	16.10	3	2014
28	BITA-INVEST d.o.o. TUZLA, PODRUŽNICA "PILANA" RIBNICA, ZAVIDOVIĆI	420935626002 4	16.10	4	2014

29	"ŽEPIĆ" d.o.o. GRAČANICA	420939737000 4	16.10	3	2014
30	"BH - LEGNO" d.o.o. GRAČANICA	420940476000 0	16.10	3	2014
31	"HALIDEX" d.o.o. GRAČANICA	420951273000 1	16.10	3	2014
32	"RADIAL" d.o.o. GRAČANICA	420975539000 4	16.10	3	2014
33	"TTM" d.o.o.	421016055000 6	16.10	3	2014
34	"ASKOKOMERC" D.O.O. ZENICA-NEMILA	421800244000 8	16.10	4	2014
35	"TIMPEX" D.O.O. VAREŠ	421803472000 2	16.10	4	2014
36	"AL-EX" D.O.O. ZENICA	421810754000 8	16.10	4	2014
37	DOBITNI CENTAR "PILANA" ZAVIDOVIĆI	421811530007 5	16.10	4	2014
38	DOBITNI CENTAR "PARKETARA" ZAVIDOVIĆI	421811530012 1	16.10	4	2014
39	"BOSNA-COMMERCE" D.O.O. TEŠANJ-PJ PILANA	421814580002 1	16.10	4	2014
40	"KAPETANOVIĆ" D.O.O. VAREŠ	421816493000 9	16.10	4	2014
41	"KRAN" D.O.O. OLOVO	421816817000 9	16.10	4	2014
42	D.O.O. "S.A.I.L.A. WOOD" Žepče	421818364000 3	16.10	4	2014
43	"SILVESTRA", D.O.O. KAKANJ	421820164000 8	16.10	4	2014
44	"BUDO-EXPORT" D.O.O. ŽEPČE	421831417000	16.10	4	2014



		8			
45	"ARKADA" D.O.O. ŽEPČE	421871354000 5	16.10	4	2014
46	BALKANIKA d.o.o. Konjic	422705610000 7	16.10	7	2014
47	"MIAM" D.O.O FOJNICA	423604353000 1	16.10	6	2014
48	"VESNA-S" d.o.o. Bugojno	423605139000 6	16.10	6	2014
49	"LANG-KOMERC" d.o.o. Travnik-Turbe	423605619000 5	16.10	6	2014
50	"TAMEX" d.o.o. Busovača	423605635000 2	16.10	6	2014
51	"HOMAR" D.O.O TRAVNIK	423607247000 0	16.10	6	2014
52	"KARAŠIN - KOMERC" d.o.o. Bugojno	423607808000 9	16.10	6	2014
53	"M-KASUMOVIĆ" Travnik d.o.o.	423607930000 2	16.10	6	2014
54	PTG "GRAND" Busovača d.o.o.	423609096000 6	16.10	6	2014
55	J.W.C. BOSWOOD Co d.o.o. Bilalovac – Kiseljak	423610345000 2	16.10	6	2014
56	"VUKOVIĆ" d.o.o. Turbe, Travnik	423611210000 6	16.10	6	2014
57	"Company Dedići" Bugojno, d.o.o. Poslovna jedinica 1 Bugojno	423613298002 9	16.10	6	2014
58	"ESPRO" d.o.o. Donji Vakuf	423619156000 9	16.10	6	2014
59	"PORIČNICA" d.o.o. Bugojno	423630532000 3	16.10	6	2014

60	"LEVARDA" d.o.o. Nova Bila-Travnik	423632756000 8	16.10	6	2014
61	"PILANA-NAM" d.o.o. Gornji Vakuf - Uskoplje	423650169000 5	16.10	6	2014
62	"FEKRY" D.O.O.USTIKOLINA	424504930000 7	16.10	5	2014
63	d.o.o. "BAJRAMOVIĆ" Cazin P. J. PILANA Donja Koprivna	426302285002 0	16.10	1	2014
64	" POGY " d.o.o. Bihać	426302501000 6	16.10	1	2014
65	"VITA-JELA" D.O.O. CAZIN	426312779000 6	16.10	1	2014
66	" SMRČA " D.O.O. BOSANSKA KRUPA	426315115000 0	16.10	1	2014
67	" DRVO - REZ ", d.o.o. BOSANSKI PETROVAC	426316634000 0	16.10	1	2014
68	" ASIM-KOMERC " D.o.o. Bužim	426316855000 1	16.10	1	2014
69	" HUSETIĆ " d.o.o. BOSANSKI PETROVAC	426319757000 3	16.10	1	2014
70	"HOROZOVIĆ" d.o.o. Sanski Most	426326737000 7	16.10	1	2014
71	"FIKRO" d.o.o. Bužim	426347998000 0	16.10	1	2014
72	G R A D E L d.o.o. DRVAR	428100418000 7	16.10	10	2014
73	"ŠUJICA-DRVO" d.o.o Kupres	428102470000 7	16.10	10	2014
74	" DRVOPROMET " d.o.o. Tomislavgrad	428102488000 5	16.10	10	2014
75	" D I M " d.o.o. Drvar	428102763000	16.10	10	2014

		0			
76	TTD "DOLAC" d.o.o. Šujica	428105215000 4	16.10	10	2014
77	"JAMI" d.o.o. Drvar	428109261000 8	16.10	10	2014
78	FINAL COMPANY d.o.o. Tomislavgrad	428122233000 2	16.10	10	2014
<b>SECONDARY WOOD PROCESSING COMPANIES</b>					
79	"ISOWOOD" d.o.o. GRAČANICA	420963000000 0	16.21	3	2014
80	"SECOM", D.O.O. VISOKO	421808539000 7	16.21	4	2014
81	DOBITNI CENTAR "FURNIRNICA" ZAVIDOVIĆI	421811530005 9	16.21	4	2014
82	"PALAVRA" d.o.o. Gladnik, Travnik	423611333000 5	16.21	6	2014
83	"ROSE-WOOD" D.O.O. G. Vakuf - Uskoplje	423613816000 7	16.21	6	2014
84	"AUREUS" d.o.o. G.Vakuf-Uskoplje	423628538000 4	16.21	6	2014
85	"CARLLATO" d.o.o. Nova Bila	423633647000 3	16.21	6	2014
86	" STOLAR-KOMERC " d.o.o. Velika Kladuša	426327750000 6	16.22	1	2014
87	"MALAK Group" Društvo za promet nekratnina, trgovinu i usluge d.o.o. Sarajevo-Podružnica JANJ Donji	420187590001 3	16.23	6	2014
88	"TIŠLER-PROM" d.o.o. GRADAČAC	420903333000 7	16.23	3	2014
89	"UNIS - TOK" d.o.o. KALESIJA, POSLOVNA JEDINICA br.3 "DRVNI	420913355003 9	16.23	3	2014

	POGON" KALESIJA				
90	"Jafa-Jase 4" d.o.o. ŠPIONICA - SREBRENİK	420920416000 8	16.23	3	2014
91	"DUSA-KOMERC" d.o.o. GRAČANICA	420930489000 3	16.23	3	2014
92	"DŽEKO-COMERC" d.o.o. SREBRENİK	420936584000 9	16.23	3	2014
93	"STRONG" D.O.O. BREZA	421811254000 8	16.23	4	2014
94	"NAHA" D.O.O. VAREŠ	421819875000 0	16.23	4	2014
95	"KRIVAJA-TMK" d.o.o. ZAVIDOVIĆI	421848603000 3	16.23	4	2014
96	"MLAKIĆ" d.o.o. Vitez	423600382000 7	16.23	6	2014
97	"LAMPEX" d.o.o. Travnik	423604191000 1	16.23	6	2014
98	"KONTINENTAL" d.o.o. Kiseljak	423609398000 8	16.23	6	2014
99	"STOLARIJA KARIĆ" d.o.o. Odžak	425400160000 8	16.23	2	2014
100	"SEJDIĆ COMMERCE" d.o.o. Odžak	425400755000 2	16.23	2	2014
101	"BRAĆA BENKOVIĆ" d.o.o. Ugljara	425400852000 0	16.23	2	2014
102	"SALKANOVIĆ TIŠLERAJ" d.o.o. Odžak	425404165000 8	16.23	2	2014
103	"BRIJEST-PROMET" d.o.o. V.Kladuša	426307481000 0	16.23	1	2014
104	"SANI GLOBAL" d.o.o. Bihać	426323169000 5	16.23	1	2014

105	"EU-PAL" d.o.o. Kiseljak	423629933000 0	16.24	6	2014
106	"PALETA PLUS" d.o.o. Busovača	423638827000 2	16.24	6	2014
107	STOLARIJA ZOVKO d.o.o. Široki Brijeg	427203086000 9	16.24	8	2014
108	"MELIMED" d.o.o. GRADAČAC	420902809000 6	16.29	3	2014
109	"MANICO I" d.o.o. BRIJESNICA MALA, POSLOVNA JEDINICA - POGON ZA PRERADU DRVETA BRIJESNICA MALA	420923644002 9	16.29	3	2014
110	"LULIĆ" d.o.o. GRADAČAC	420967366000 3	16.29	3	2014
111	"JUDIK" d.o.o. Neum	422711792000 2	16.29	7	2014
112	"MATIĆANKA" d.o.o. Matići	425400470000 3	16.29	2	2014
113	"S&T COMPANY" d.o.o. Ada	425403711000 7	16.29	2	2014

Source: Institute for statistics of FB&H, 2016

Table 1. indicates the total number of registered wood manufacturing companies with the numbers of employees more than ten in Bosnia and Herzegovina. A table consists of seventy eight primary & thirty five secondary wood processing companies.

**Table 2.** Name of the most successful Wood manufacturing industries

ID No.	Name of the Wood companies	Canton
423605635000 2	"TAMEX" d.o.o. za proizvodnju, promet i usluge Busovača	6
420014156000 3	Društvo za proizvodnju, usluge, unutrašnju i spoljnu trgovinu "XYLON CORPORATION" d.o.o. Sarajevo	9
423613816000 7	"ROSE-WOOD" D.O.O. Društvo za proizvodnju, trgovinu i usluge Gornji Vakuf – Uskoplje	6

421808539000 7	DRUŠTVO ZA PROIZVODNJU, TRGOVINU, UGOSTITELJSTVO I USLUGE "SECOM", D.O.O. VISOKO	4
421848603000 3	"KRIVAJA-TVORNICA MONTAŽNIH KUĆA" d.o.o. ZAVIDOVIĆI	4
420963000000 0	"ISOWOOD" d.o.o. ZA PROIZVODNJU I PRERADU DRVETA, GRAĐEVINARSTVO, TRGOVINU I USLUGE GRAČANICA	3
426319757000 3	D.O.O. " HUSETIĆ " BOSANSKI PETROVAC	1
421831417000 8	"BUDO-EXPORT" D.O.O. ZA PROIZVODNJU I PROMET DRVNIH SORTIMENATA ŽEPČE	4
423611333000 5	"PALAVRA" Društvo za proizvodnju, prijevoz, trgovinu i usluge Gladnik, Travnik	6
426323169000 5	Društvo sa ograničenom odgovornošću "SANI GLOBAL" Bihać	1

Source: Institute for statistics of FB&H, 2016

Table 2. presents name of the ten most successful wood manufacturing companies in Bosnia and Herzegovina including both primary and secondary companies exporting over 70%.

Classification of activities in Bosnia and Herzegovina was conducted in 2010, and by that classification, wood manufacturing companies belong to the manufacturing companies marked under category C, under number 16.

According to classification of Economic Activities B& H 2010 table 3. shows difference between primary & secondary processing wood manufacturing companies in Bosnia and Herzegovina.

**Table 3.** Classification of Economic Activities B& H 2010

Class	Name	NACE Rev.2
<b>16</b>	<b>Processing of wood and products of wood and cork, except furniture, processing of articles of straw and plaiting materials</b>	
<b>16.1</b>	<b>Sawing and planing of wood (sawn timber production); impregnation of wood</b>	
16.10	Sawing and planing of wood (sawn timber production ) impregnation of wood	16.10
<b>16.2</b>	<b>Processing of products of wood, cork, straw and plaiting materials</b>	
16.21	Production of veneer sheets and wood	16.21
16.22	Production of assembled parquet floors	16.22
16.23	Production of other builders' carpentry and joinery	16.23
16.24	Production of wood packaging	16.24
16.29	Production of other products of wood, articles of cork, straw and plaiting materials	16.29

Source: Klasifikacija djelatnosti BiH, 2010

Based on the data from Institute from statistics of FB&H 2016 and Classification of Economic Activities B&H 2010, having found out that only secondary Wood manufacturing companies under number 16.2 have main activity of final processing of wood. Thus, our research study focused on secondary wood manufacturing companies whose activity is final wood processing and final products.

With help of collected data from Institute for statistics of FB&H and Classification of Economic Activities B&H 2010, data of the total number and the name of the secondary wood manufacturing companies in B&H and with help of collected data from companies websites and interviews with their secretaries, data of year establishment of the company and number of new final products developed of each company contributed to the development of the following two questions:

1) How companies frequently introduce new product per year?

2) How long time company required to develop new product per month?

**3. Results**

**Table 4.** Periods for new product development

Name of the Companies	Year of establishment	Products	Frequently introducing new product per year	Period in introducing new product per month
"ISOWOOD" d.o.o. GRAČANICA (Isowood, 2016)	2004	Plywood boards, Solid & multilayer floors, Working tops, Wall coverings, Briquette, Tables, Moldings Parquet floors, Staircase	0.82 <sup>1</sup>	15
"SECOM", D.O.O. VISOKO (Secom, 2015)	1996	Laminated panels, Briquette	0.11	54
DOBITNI CENTAR "FURNIRNICA" ZAVIDOVIĆI (Furnirnica, n.d.)	1949	Veneer, Construction boards	0.03	396
"PALAVRA" d.o.o. Gladnik, Travnik (Plavarka, 2010)	1996	Peeled Veneer, Glued Veneer, Sliced Veneer	0.16	36
"ROSE-WOOD" D.O.O. G. Vakuf –	1991	Wooden staircase, Wood	0.13	96

<sup>1</sup>From table 4. results show e.g. company Isowood d.o.o Gračanica, frequently introduce 0.82 per year. It means if there is 1 (one new product introduced per year). In this case result shows 0.82, so they need more than one year to introduce new product to market.



Uskoplje (Dužinsko-širinski spojene ploče, 2012)		boards, briquette		
"AUREUS" d.o.o. G.Vakuf-Uskoplje ( Aureus, 2014)	2003	Veneer & Panels	0.17	72
"CARLLATO" d.o.o. Nova Bila (Carllato, 2010)	2005	Lato bad, Latofex & Multiplex	0.30	40
" STOLAR- KOMERC " d.o.o. Velika Kladuša (Stolarkomerc, 2014)	1987	Doors	0.04	366
"MALAK Group" Društvo za promet nekratnina, trgovinu i usluge d.o.o. Sarajevo- Podružnica JANJ Donji (Malak Group, n.d.)	2013	Construction carpentry	0.50	24
"TIŠLER-PROM" d.o.o. GRADAČAC (Tišler-prom, 2016)	1997	Doors, Windows, Outdoors	0.17	72
"UNIS - TOK" d.o.o. KALESIJA, POSLOVNA JEDINICA br.3 "DRVNI POGON"	2012	Construction carpentry	0.33	36

KALESIJA (UNIS-TOK, n.d.)				
"Jafa-Jase 4" d.o.o. ŠPIONICA – SREBRENİK  (Proizvodnja građevinske stolarije, 2006)	1960	Doors, Windows, Roller shutter, Shutters	0.07	195
"DUSA-KOMERC" d.o.o. GRAČANICA  (Dusa, n.d.)	1997	Doors & Windows, Windows blinds, Window shutter	0.21	54
"DŽEKO- COMERC" d.o.o. SREBRENİK  (Džeko komerc, 2013)	1992	Doors & Windows	0.09	138
"STRONG" D.O.O. BREZA  (Strong d.o.o, 2015)	1989	Windows, Doors, Solid wood panels, Wooden Windows elements	0.15	78
"NAHA" D.O.O. VAREŠ  (D.o.o Naha Vareš, 2015)	1996	Windows, Doors, Shutters, Veneer	0.21	57
"KRIVAJA-TMK" d.o.o. ZAVIDOVIĆI  (Krivajahomes, 2012)	1949	Wood house, Windows & Accessories, Glued laminated timber, Light Construction	0.08	158

		Boards		
"MLAKIĆ" d.o.o. Vitez (Mlakić, 2016)	1959	Windows & Doors	0.04	336
"LAMPEX" d.o.o. Travnik (Lampex, 2004)	1996	Construction carpentry	0.05	228
"KONTINENTAL" d.o.o. Kiseljak (Kontinental, 2007)	1990	Windows, Balcony door, Shutters, Doors	0.16	75
"STOLARIJA KARIĆ" d.o.o. Odžak (Stolarija Karić, 2007)	2002	Windows & Doors	0.15	78
"SEJDIĆ COMMERCE" d.o.o. Odžak  (Proizvodnja građevinske stolarije drvena i drvena- aluminijaska, 2009)	1971	Windows & Doors	0.05	264
"BRAĆA BENKOVIĆ" d.o.o. Ugljara (Braća Benković, 2014)	2002	Construction carpentry	0.08	156
"SALKANOVIĆ TIŠLERAJ" d.o.o.	2006	Windows & Doors	0.22	54

Odžak (Salkanović Tišleraj, 2012)				
" BRIJEST- PROMET " d.o.o. V.Kladuša (Brijest-promet, 2010)	1972	Kitchens, Doors & Windows	0.07	172
"SANI GLOBAL" d.o.o. Bihać (Sani Global, 2015)	1999	Plywood boards	0.06	300
"EU-PAL" d.o.o. Kiseljak (Eu-Pal d.o.o, 2009)	2006	Euro pallets	0.11	108
"PALETA PLUS" d.o.o. Busovača (Paleta Plus, 2008)	2006	Euro pallets	0.11	108
"STOLARIJA ZOVKO" d.o.o. Široki Brijeg (Stolarija Zovko, n.d.)	1984	Door, Table, Floors, Timber	0.13	93
"MELIMED" d.o.o. GRADAČAC (Melimed, 2013)	2004	Wooden toys	0.09	132
"MANICO I" d.o.o. BRIJESNICA MALA, POSLOVNA	1999	Handles for shovels, Handles villas, The handles for	0.31	38

JEDINICA - POGON ZA PRERADU DRVETA BRIJESNICA MALA  (Manico, 2015)		pickaxes, Handles for ax, Handles for rakes		
"LULIĆ" d.o.o. GRADAČAC  (Lulić d.o.o, n.d.)	2006	Kitchens & Doors	0.22	54
"JUDIK" d.o.o. Neum  (Judik d.o.o, 2015)	1993	Kitchens	0.05	264
"MATIČANKA" d.o.o. Matići  (Matićanka, 2012)	1991	Hamper	0.04	288
"S&T COMPANY" d.o.o. Ada  (Mikrostat, n.d.)	2002	Windows & Doors	0.15	78
<b>TOTAL:</b>			<b>0.16</b>	<b>135</b>

Table 4. shows the thirty-five secondary wood manufacturing companies in Federation of Bosnia & Herzegovina whose main activity is the final processing of wood. The table also shows year of establishment each company individually & individual final products of the company. Based on this information, We received a calculation how frequently each company individually developing a new product per year and how much each of these companies take time to develop and introduce new product per month.

*Formula for calculating frequently introduce new product per year:*

$$f = n/t$$

- ✓ f-frequency
- ✓ n-number of values in a set of data
- ✓ t-time period

$$f = n/t; f = n \text{ of products} / (2015 - \text{year of establishment company})$$

e.g. for Isowood company  $f = 9 / (2015 - 2004) = 0.82$

*Formula for Calculating of total frequently introduce new product per year for all companies in Bosnia & Herzegovina:*

Descriptive statistic:

$$\bar{x} = x_1 + x_2 + \dots + x_n / n$$

n= number of the companies

e.g. Isowood company

$$\bar{x} = 0.82 + 0.11 + \dots + 0.15 / 35 = 0.16$$

*Formula for calculating period in introducing new product per month:*

$$12 \text{ months} * \text{year} / n \text{ of products} = \text{period per month}$$

12 months= 1 year;

e.g. Isowood company;

12 months \* 11/ 9= 14.66 ≈ 15 months for establishment one product

$$11 \text{ years} = 2015 - \text{year of establishment of company}$$

e.g. Isowood company;

11 years = 2015 - 2004 = 11 years

*Formula for calculating total period of all companies for introducing new product per month:*

$$\bar{x} = x_1 + x_2 + \dots + x_n / n$$

$$\bar{x} = 15 + 54 + \dots + 78 / 35 = 134.6571429 \approx 135$$

On the basis of this information's I received information about Companies that in the shortest possible period (time) develop the product.

**Table 5.** Period time of development new product

Name of the Companies	Period of introducing new product per month
"ISOWOOD" d.o.o. GRAČANICA	15
"MALAK Group" Društvo za promet nekratnina, trgovinu i usluge d.o.o. Sarajevo-Podružnica JANJ Donji	24
"PALAVRA" d.o.o. Gladnik, Travnik	36
"UNIS - TOK" d.o.o. KALESIJA, POSLOVNA JEDINICA br.3 "DRVNI POGON" KALESIJA	36
"MANICO I" d.o.o. BRIJESNICA MALA, POSLOVNA JEDINICA - POGON ZA PRERADU DRVETA BRIJESNICA MALA	38

Table 5. indicates five secondary wood manufacturing companies which in the shortest period time develop new product.

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