Influence of employment trends in the Croatian wood industry on the number of students of Wood Technology since 2010

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INTRODUCTION

University education is more than the next level in the learning process; it is a critical component of human development worldwide.

In this article we presented an analysis of the current situation in the Croatian woodworking sector as well as anticipating the influence of employment trends on the number of enrolled students of Wood Technology at the Faculty for Forestry in Zagreb since 2010.

Higher-education teaching personnel can effectively do justice to this principle if the environment in which they operate is conducive, which requires a democratic atmosphere; hence the challenge for all of developing a democratic society (UNESCO, 1997).

MATERIAL AND METHODS

The base of these reserch are data of the number of employees for period 2010-2018 in two main wood manufacturing sectors: Wood processing and Furniture manufacturing.

Also, database include the number of students of one Mathematical (B1) and three Statistical courses (B2, DP, DD), in one undergraduate university study programme and two wood technology graduate programmes at the Faculty of Forestry in Zagreb since academic year 2010/2011.

Table 1. Legend for analyzed variables

Variable	Description of Variable
WP	employees in Wood Processing (sector C16)
FM	employees in Furniture Manufacturing (sector C31)
B1	students of 1st year of Bachelor's programme Wood Technology
B2	students of 2nd year of Bachelor's programme Wood Technology
DP	students of 2nd year of Master's programme Wood Technology Processes
DD	students of 2nd year of Master's programme Design of Wood Products

Table 2. Number of employees (source DZS) and students (source ISVU)

Year	Number of employees		Number of students			
	WP	FM	B1	B2	DP	DD
2010	11.050	9.676	131	49	11	5
2011	10.839	9.357	131	47	15	8
2012	11.072	8.887	139	31	22	5
2013	11.072	8.447	143	35	23	6
2014	11.521	8.443	125	42	12	10
2015	12.501	8.602	118	51	20	12
2016	12.858	8.944	113	41	17	9
2017	13.379	9.216	42	32	13	7
2018	13.765	9.327	39	26	18	9

RESULTS AND DISCUSSION

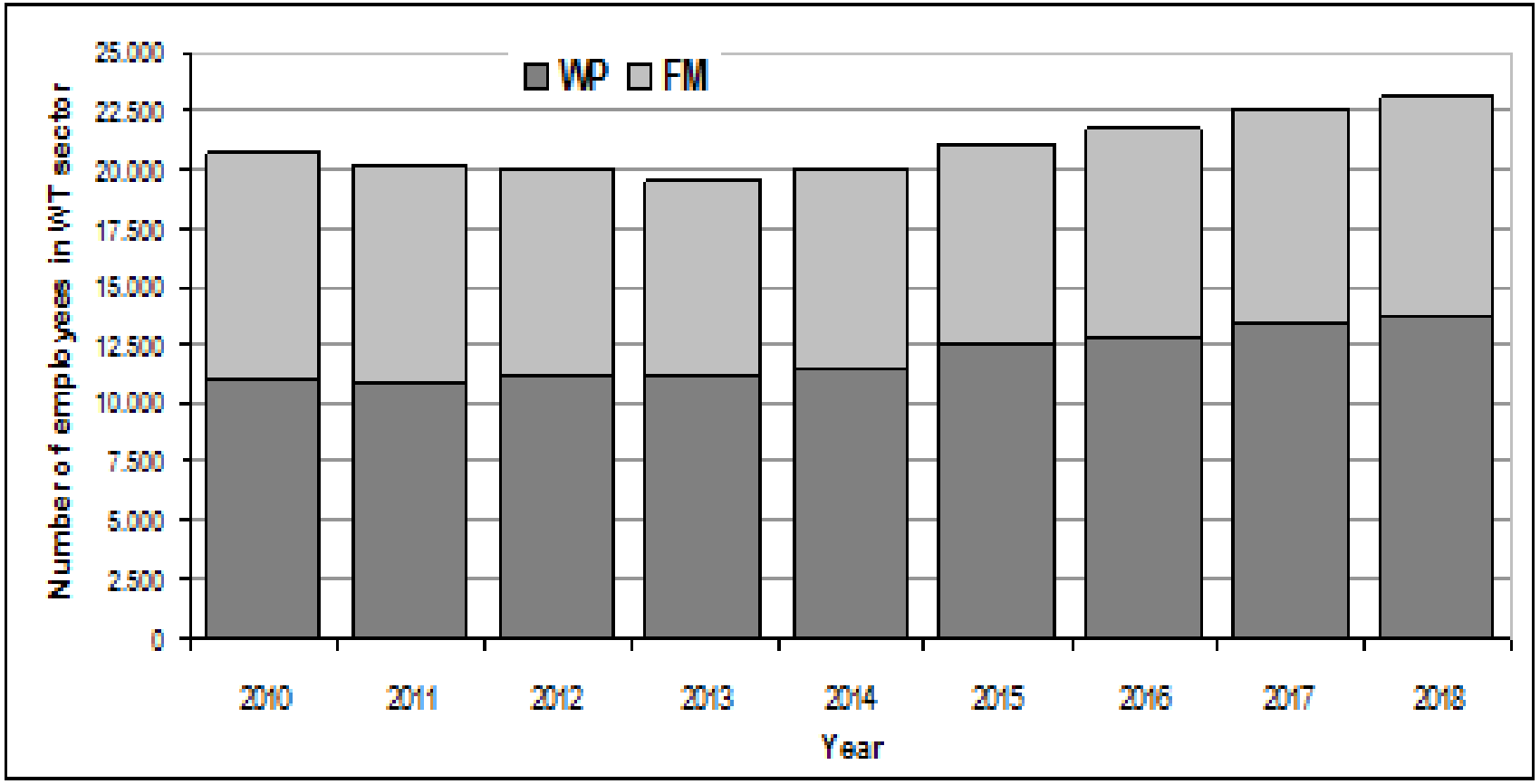

Figure 1. Number of Employees in WP and FM since 2010

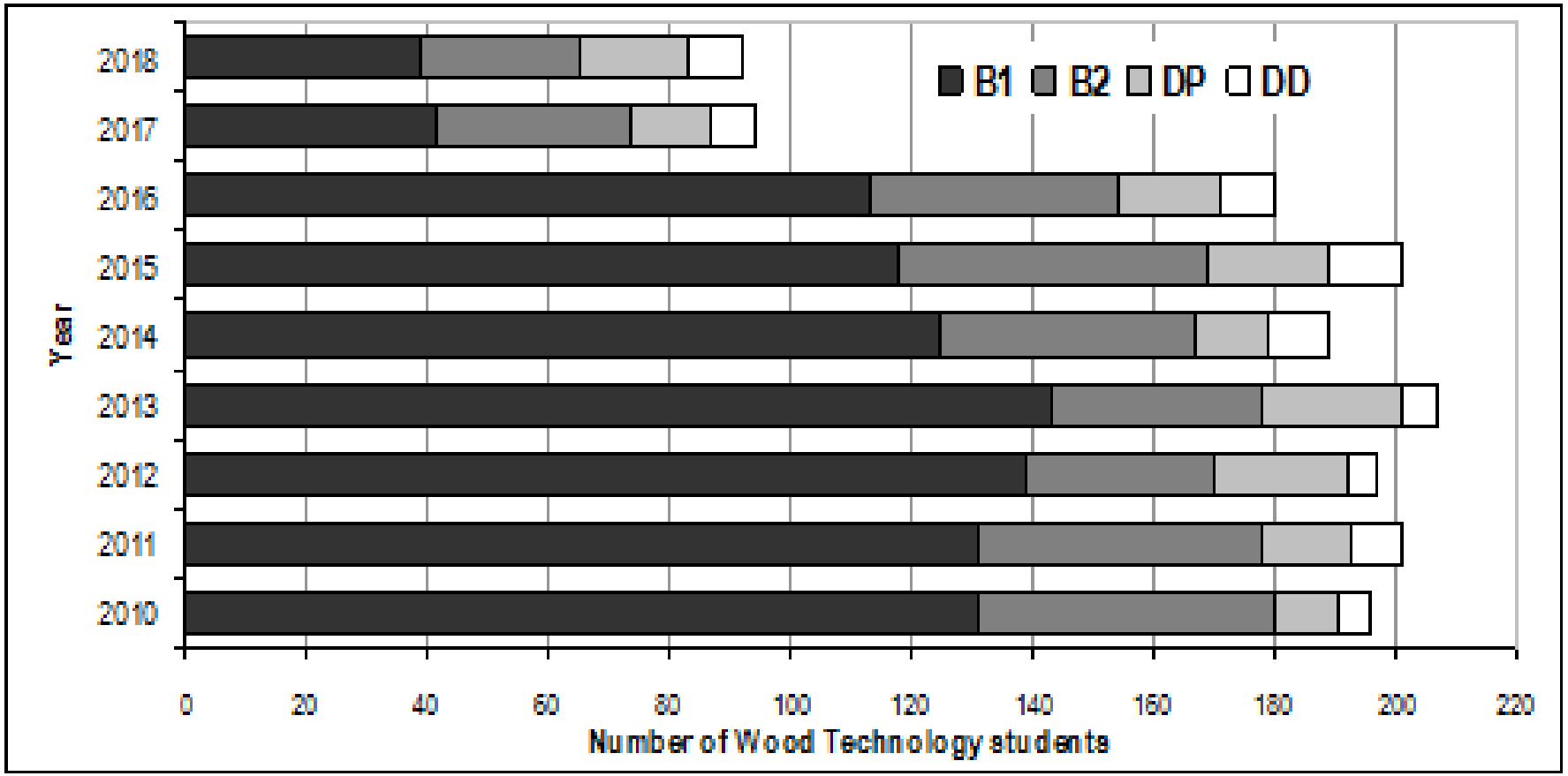

Figure 2. Number of Students since Academic year 2010/2011

Table 3. Statistics for analyzed variables

Variable	Valid N	Mean	Std.Dev.	Conf.L. -95%	Conf.L. +95%	Minimum	Median	Maximum	Coef. Var.
WP	9	12.006	1.129	11.138	12.875	10.839	11.521	13.765	0,09
FM	9	8.989	437	8.653	9.325	8.443	8.944	9.676	0,05
B1	9	109	40	78	140	39	125	143	0,37
B2	9	39	9	33	46	26	41	51	0,22
DP	9	17	4	13	20	11	17	23	0,26
DD	9	8	2	6	10	5	8	12	0,30

The most interesting thing that we can see from the table above is abnormality in distribution of the number of students in the 1st Bachelor's year of studing Wood Technology (B1).

Although is average number of students in last nine academic years 109, and 95% confidence interval between 78 and 140 students, also we can see that minimum (39) is almoust equal standard deviation (40).

The irregularity in distribution was caused by the surprisingly small number of enrolled students in the first Bachelor's year for the last two academic years (42 in 2017, and 39 in 2018).

Looking for the impact of employees trends on the number of students, indices analysis was followed. The basic indices for all variables are presented with a common reference year, currently year 2014 = index 100.

Table 4. Basic and chain indices for all variables

Year	Basic indices (b=2014)						Chain indices					
	WP	FM	B1	B2	DP	DD	WP	FM	B1	B2	DP	DD
2010	95,9	114,6	104,8	116,7	91,7	50,0	-	-	-	-	-	-
2011	94,1	110,8	104,8	111,9	125,0	80,0	98,1	96,7	100,0	95,9	136,4	160,0
2012	96,1	105,3	111,2	73,8	183,3	50,0	102,1	95,0	106,1	66,0	146,7	62,5
2013	96,1	100,0	114,4	83,3	191,7	60,0	100,0	95,0	102,9	112,9	104,5	120,0
2014	100,0	100,0	100,0	100,0	100,0	100,0	104,1	100,0	87,4	120,0	52,2	166,7
2015	108,5	101,9	94,4	121,4	166,7	120,0	108,5	101,9	94,4	121,4	166,7	120,0
2016	111,6	105,9	90,4	97,6	141,7	90,0	102,9	104,0	95,8	80,4	85,0	75,0
2017	116,1	109,2	33,6	76,2	108,3	70,0	104,1	103,0	37,2	78,0	76,5	77,8
2018	119,5	110,5	31,2	61,9	150,0	90,0	102,9	101,2	92,9	81,3	138,5	128,6

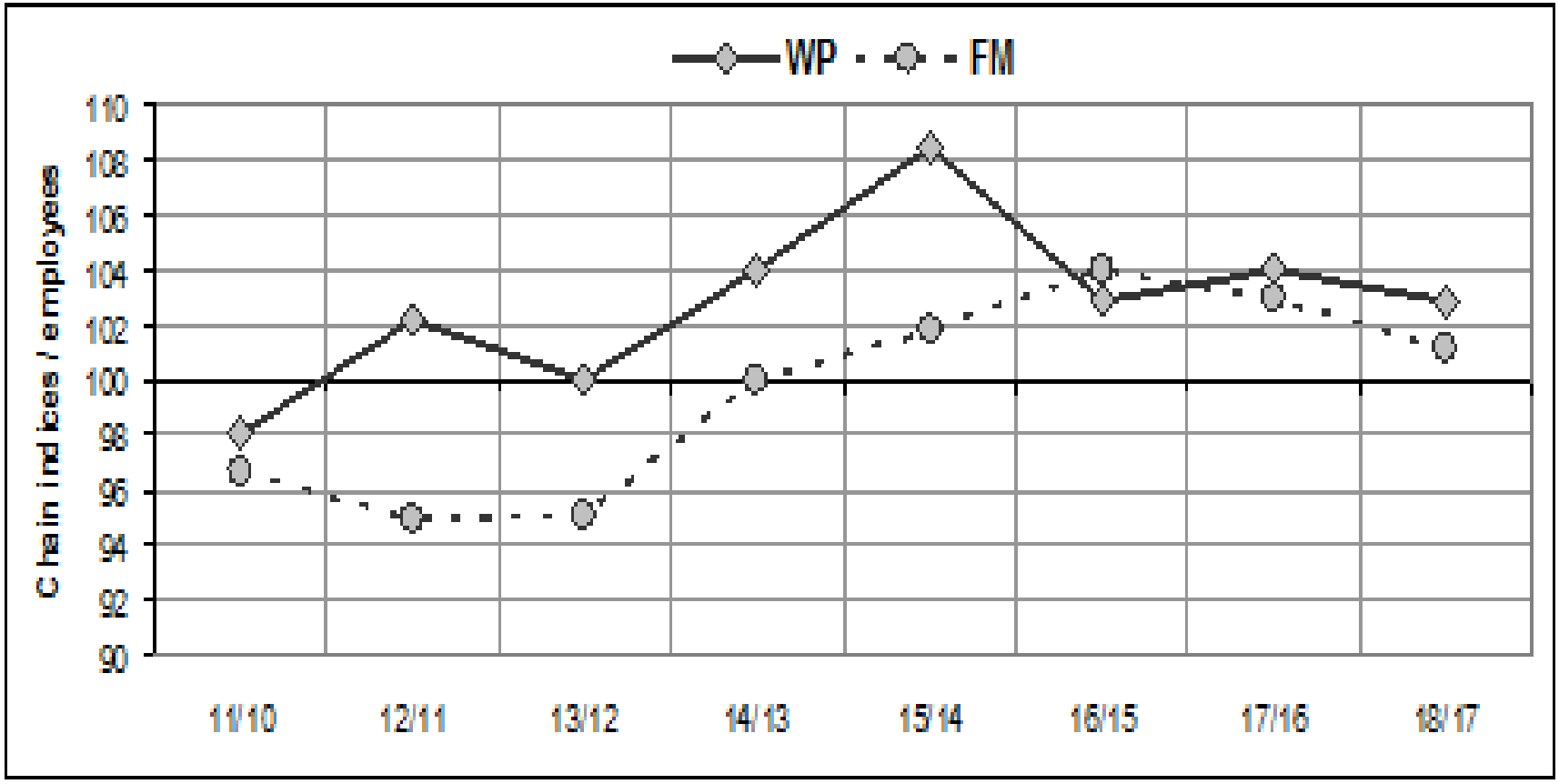

Figure 3. Comparison of the chain indices for number of employees

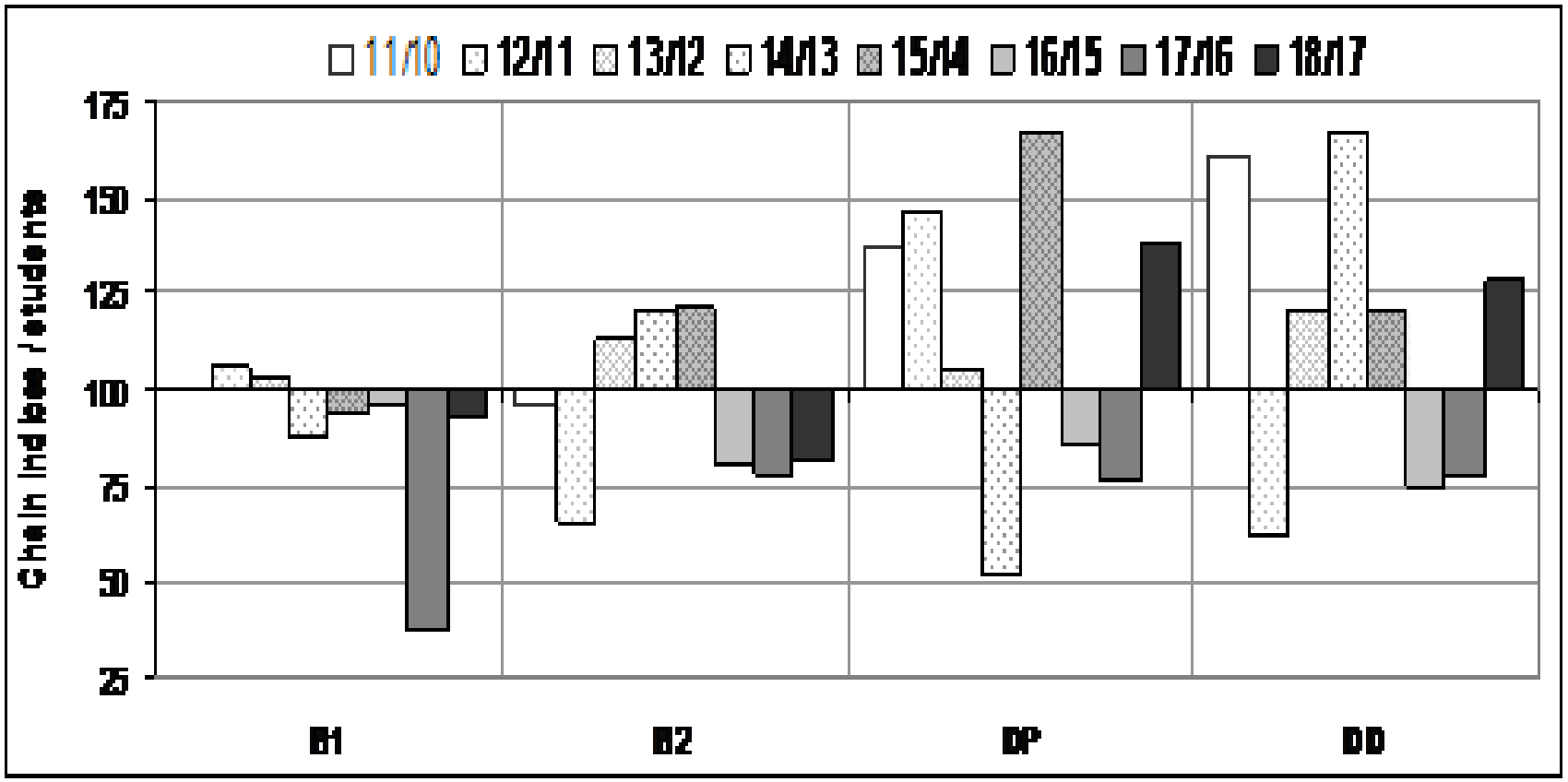

Figure 4. Comparison of chain indices for number of students

CONCLUSION

Although we recognize some trends in the number of employees in wooden sectors C16 and C31 since year 2010, and despite our expectation, it's not possible to find the influence of those trends on the number of wood technology students enrolled in the various study programms.

CONCLUSION

Results of this research indicates that drop-out rates for the students of wood technology are the highest at the end of the first academic year.

First-year students are particularly vulnerable to dropping out of higher education, since their expectations might be very different from what they actually encounter.

THANK YOU ALL FOR YOUR ATTENTION