

## **Does board of director's age impact earnings management in agriculture? Case of Serbian agricultural sector**

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**Vladan Pavlović**

PhD in Accounting

Institution: University of Pristina temporary cited in K. Mitrovica, Faculty of Economics

Address: Kolašinska 156, Kosovska Mitrovica, Serbia

38220 Kosovska Mitrovica

(Corresponding author)

Email: [vladan.pavlovic@pr.ac.rs](mailto:vladan.pavlovic@pr.ac.rs)

**Goranka Knežević**

PhD in Accounting

Institution: Singidunum University, Faculty of Business

Address: Danijelova 32, Belgrade, Serbia

11000 Belgrade

Email: [gknezevic@singidunum.ac.rs](mailto:gknezevic@singidunum.ac.rs)

**Radica Bojičić**

PhD in Mathematics

Institution: University of Pristina temporary cited in K. Mitrovica, Faculty of Economics

Address: Kolašinska 156, Kosovska Mitrovica, Serbia

38220 Kosovska Mitrovica

Email: [radica.bojicic@pr.ac.rs](mailto:radica.bojicic@pr.ac.rs)

### **Abstract**

This paper investigates if board of director's age impact earnings management activities which will make a contribution to this very actual topic. Our sample is consisting of all Serbian agriculture companies listed on the Belgrade Stock Exchange for the period of 2013-2016. For detecting earnings management practices we have used the Performance ADJ Jones Model, which is showed as the most appropriate for companies in our sample. The results show that there is no impact of board of director's age on earnings management practices. We also find no evidence of impact of chairman's age on earnings management practices. Relationship between gender diversity and earning management practices has not been found; even when a woman is the chairman no relationship between the variables was revealed. The women made 22% of the whole members of the boards, and 55% of boards are mixed-gender. But we have discovered that the women members of the boards of directors are significantly younger than men members. In 42.11% of mixed-gender boards, the woman is the youngest member of the board of directors, while in 60.87% of mixed-gender boards, women are younger than the average age of the members of these boards. This finding throws new light on gender studies.

**Keywords:** Earnings management. Age. Gender. Agriculture companies.

## 1. Introduction

It is widely considered that age, gender, education and religion attitude influence cognitions, values and perceptions, while cognitions values and perceptions influence the propensity to unethical behavior or even crime. This phenomenon has been firstly investigated by sociologist and criminologists. Most criminologists agree that violent crimes and those involving property offenses occur most frequently with young people, specifically with males. (WELLS, 1990, p.88) Sociologists have observed that the size of age and sex cohorts within a population can influence diverse outcomes, including economic well-being (Easterlin, 1980), mobility patterns (Reed, 1978; Stewman & Konda, 1983), crime rates (Maxim, 1985), and marriage practices (Guttentag & Secord, 1983). (ANCONA, CALDWELL, 1992, p 321) On the end of the last millennium, the same general concept has begun to be applied to organizational phenomena. (ANCONA, CALDWELL, 1992, p. 321) In the last two decades, (un)ethical behaviors in organizations have received increased scholarly attention. (JACOBS, ET AL, 2014, p.64) As Loe, Ferrell and Mansfield (2000, p. 200) warn, there is a difference between studying ethics in the personal lives of individuals and the ethical decisions made in organizations, because people in organizations are influenced by the corporate culture and role relationships. (LOE ET AL, 2000, p. 200) The extant literature in organization theory and behavior suggests that the strategies taken, and decisions made, on behalf of a business enterprise reflect the decision-making styles and values of top executives in general. (RASHAD ABDEL-KHALIK, 2014, p. 245) Within this, numerous researchers investigate the influence of the board of directors, CEOs and CFOs' cognitions, values and perceptions on the ethical decisions made, especially on the quality of financial statements and fraudulent reporting as well. It should be known that it is sometimes hard to distinguish earnings management and financial fraud.

A major issue central to accountings research is the extent to which management is allowed to manage reported earnings, as well as the extent to which it becomes financial fraud (MARAI, PAVLOVIĆ, 2013, p.39). But, both activities are considered as unethical. As a consequence of financial crises and big financial and accounting scandals there was the increase in the interest on these topics. However, the topic of the reality of financial

statements gets scholarly attention even before the financial crisis. Distrust in financial statements dates before the last global crisis. As Wimalasiri, Pavri, and Jalil (1996, p. 1331) state on the middle of the last decade of the XX century, the main reason has been the erosion of the integrity of the business community by flagrant abuses of trust and honesty as reported in the media. (WIMALASIRI, ET AL, 1996, p. 1338)

There are different opinions concerning the responsibility for earnings management and financial fraudulent activities. One group of authors (HAMBRICK, MASON, 1984; BURNS, KEDIA, 2006; BERGSTRESSER, PHILIPPON 2006; HERRMANN, DATTA, 2006; EFENDI ET AL., 2007; HAMBRICK, 2007; SUNDARAN, YERMACK, 2007; BOIVIE, ET AL., 2011; HUANG, ET AL., 2012; ZONA, ET AL., 2013; RASHAD ABDEL-KHALIK, 2014; HO, ET AL., 2015; BEAUDOIN, ET AL. 2015; PALVIA, ET AL., 2015; CAPEZIO, MAVISAKALYAN, 2016; BRAVO, ET AL., 2018) consider that CEO influences these unethical activities while the second group thinks that these activities are more influenced by CFO (KAUFMAN, 2003; GRAHAM, ET AL., 2005; GEIGER, NORTH, 2006; BARUA, ET AL., 2010; JIANG, ET AL., 2010; PENI, VÄHÄMAA, 2010; GORE, ET AL., 2011; VÄHÄMAA, 2014; SUN, ET AL, 2017). Feng, Ge, Luo, and Shevlin (2011, p. 21.) find that CFOs are involved in material because they succumb to pressure from CEOs, rather than because they seek immediate personal financial benefit from their equity incentives. Given that CFOs are subordinates of CEOs, CFOs manipulate the financial reports under pressure from CEOs. (FENG, ET AL, 2011). As Qi, Lin, Tian and Lewis (2017, p. 143) state, top management undoubtedly plays a major role in an organization's strategic choices and, ultimately, its performance. In legal systems where the board of directors governs the company, the influence of the board of directors on earnings management and fraudulent report has been investigated. (BEASLEY, 1996; KLEIN, 2002; SHARMA, 2004; AHMED, DUELLMAN, 2007; ALZOUBI, 2012; SWASTIKA, 2013)

Under Serbian corporate law ("Official Gazette of the Republic of Serbia", no. 36/2011, 99/2011, 83/2014 - and 5/2015), companies may operate under either a one-tier or two-tier corporate governance. In both systems, it could be one or more directors. The director, i.e. the board of directors is governing the company. Public joint stock companies must have board of directors with 3 members at least (Article 383). All companies in our sample have a board of directors. So, it will be analyzed if board of director's age impact earnings management.

## 2. Theoretical Aspect of Age Effect on Ethical Behavior and Earnings Management

Since the turn of the millennium, the field of aging and decision making has dramatically expanded. (STROUGH, ET AL, 2015, p. 1-2) The hypothesis that older employees are more ethical than the younger one is nowadays widespread in the literature. An individual's age is expected to influence strategic decision-making perspectives and choices. (WIERSEMA, BANTEL, 1992, p. 97) Serwinek (1992) found that older workers had stricter interpretations of ethical standards. The results of Ruegger and King's (1992) survey also suggest that age is a determining factor in making ethical decisions.

Daboub, Rasheed, Priem, and Gray (1995) find that age and education of top executives can significantly affect a firm's illegal activities. Sundaram and Yermack (2007) find that older individuals are more ethical and conservative. (QI, ET AL, 2017, p.147) Wimalasiri, Pavri, and Jalil (1996) also suggest that age, education and religious orientation seemed to have influenced cognitive moral development stages of the respondents.

Having in mind that earnings management is one of the two most debated issues in the corporate world (ALQUHAIF, ET AL, 2017), the scholars attention on age effect on earnings management decisions was expected. Numerous studies confirmed that age of the decision maker is positively related to the quality financial reporting (DABOUB, ET, AL, 1995; HUANG, ET AL, 2012; SUN ET AL, 2017; QI, ET, AL, 2017), as well as religion attitude (KANAGARETNAM, ET AL., 2015; DU, ET AL., 2015). Age and religion attitudes have always been given an independent variable status in earnings management studies. But it seems that there is a strong connection between them. Namely, many studies (Crandall, 1980; Hunsberger, 1985; Levin, Taylor, 1997; Sherkat, Ellison, 1999; Ingersoll-Ddayton, et al, 2002; Idler 2006; Wuthnow, 2007) has supported that there is a tendency toward increased religiosity in older age. (See: BENGTON, ET AL., 2015; BENGTON, ET AL, 2016). One possible explanation is that such age contrasts are the result of aging or developmental processes that lead to individuals becoming more religious as they get older (Argue, Johnson, and White 1999; Krause 2008). (BENGTON, ET AL., 2015, p. 363) Life experience may influence religiosity. (See: SILVERSTEIN, BENGTON, 2018) But, others explanations of this phenomenon could also be find. (See more in: BENGTON, ET AL., 2015).

There is different point of view why CEO age is a determinant of financial reporting quality. It is widely considered that older top executives tend to be more conservative and risk-averse and it is expected that they have more ethical behavior as consequence.

(CARLSSON, KARLSSON, 1970; HAMBRICK, MASON, 1984; PÅLSSON, 1996; BERTRAND, SCHOAR, 2003; HERRMANN, DATTA, 2006; SUNDARAM, YERMACK, 2007; RASHAD ABDEL-KHALIK, 2014; SUN, ET AL, 2017; QI, ET AL, 2017). Few reasons of that are mentioned in the literature. Daboub, Rasheed, Priem, and Gray (1999, p. 160.) mention that older executives are less susceptible to pressures from organizational context. The executives' ages can be viewed both as a proxy for the extent of their experience and as a signal of their resistance to risk-taking and change (Escriba-Esteve, et al, 2009). (QI, ET AL, 2017, p.147) As Wiersema and Bantel (1992, p. 97) indicate, older executives tend to be more concerned about their financial and career security, while younger managers, tend to be more risk oriented. Upper echelons theory suggests that the manager's age cohort can affect his/her values, cognitive styles, and thus his/her decisions. (BAMBER, ET AL, 2010, pp. 1137) It was shown that individuals who experienced war and Great Depression are more conservative (Zemke, et al. 2000) as well as the individuals who experienced lower stock returns (Malmendier and Nagel 2008) or crash (Blanchard, 1993) during their investing lives. (BAMBER, ET AL, 2010, pp. 1137) But, older employees have not just a longer life experience. They also have different life circumstance. The youngest employees tend to be unmarried, and slightly older employees tend to be newly married with young children, while middle-aged employees may be divorced and have parents who need special care, and older employees tend to look forward to quiet lives without dependents and with grandchildren. (ZENGER, LAWRENCE, 1989, p.353) Beside that, older people have well-established social circles, spending traits, and expectations about their retirement income. (QI, ET AL, 2017, p.147) Younger employees have highest unsatisfied needs, and highest living cost, especially if they have children.

Older top executives, especially those with high salaries, have already satisfied their existential needs. As Zenger and Lawrence (1989, p.356) state, people tend to become more satisfied with work as they grow older, regardless of their tenure, gender, occupational level, income, and education. Besides that, they have much more to lose with an unethical behavior than their younger colleagues. Research has also reported positive associations between age and job involvement (Saal, 1978) and between age and commitment (Morris & Sherman, 1981). There is also negative association reported between age and intention to quit job (Mobley, Horner, & Hollingsworth, 1978). (ZENGER AND LAWRENCE, 1989, p.356-357) So, their risk-averse attitude is logical and expected. Therefore, older top executives who are

near retirement age are expected to engage in less earnings management. (QI, ET AL, 2017, p.147).

Numerous studies explored the gender effect on earnings management with mixed results (see: PAVLOVIC, ET AL, 2018) but the most of that did not pay attention of the age of female and men CEO's members. The recent study of Sun, Kent, Chi and Wang (2017) which find that younger male are less conservative and risk averse than others, is of rare study which pay attention on that. Until now, two papers explored earnings management in Serbian agricultural sector. Milic, et al. (2018) investigate the influence of profitability and leverage on earnings management practices, while Pavlovic, et al. (2018) investigate the influence of gender diversity on earnings management practices.

### 3. Hypothesis Development and Variable Description

The paper tests the hypothesis related to the board of director's age and its effects on earnings management practices of Serbian agricultural companies in the period 2013–2016.

We posted the following hypothesis:

H 0: There is association between board of director's age and earnings management.

H 1: There is association between the chairman of the board of director's age and earnings management.

We decided to measure these effects using the following variables: *dependent variable* is earnings management practices, while *independent* are the average board of director's age and the age of the board of director's chairman. Accounting variables are calculated from the firm's financial statements for the three year period 2013–2016.

### 4. Data and Methodology of the Research

The influence of board of director's age on earnings management is tested on a sample consisting of all Serbian agriculture companies (agriculture, fishing, forestry sector) listed on the Belgrade Stock Exchange for the period 2013-2016. This includes 34 companies. The

financial information was obtained from the Serbian Business Register Agency web site for the analyzed period. The board of director's age has been also shown at the Serbian Business Register Agency web site. Women are identified by their name from the list of the board of directors. In our sample, thirty-three companies have a three-member board of directors, and one company has a five-member board.

The first step is to identify the appropriate method for detecting earnings management. (see: JONES, 1991; DECHOW, ET AL, 1995; HEALY, WAHLEN, 1999; HEALY, ET AL, 2014; MARAI, PAVLOVIC, 2014; PAVLOVIC, ET AL, 2018). Pavlović, Knežević and Bojičić (2018) have already find that the most appropriate method for detecting earnings management for the sample of Serbian agricultural companies listed on Belgrade stock exchange, which is the same sample of companies used in this research, is the *Performance ADJ Jones Model*. They have tested:(1) Jones Model ( $ACC = \beta_i 1/TA_{-1} + \beta_{1i} \Delta SALES + \beta_{2i} PPE + \epsilon_{it}$ ); (2) Modified Jones Model ( $ACC = \beta_i 1/TA_{-1} + \beta_{1i} \Delta SALES - \Delta RECEIV + \beta_{2i} PPE + \epsilon_{it}$ ); (3) Performance ADJ Jones Model ( $ACC = \beta_i 1/TA_{-1} + \beta_{1i} \Delta SALES - \Delta RECEIV + \beta_{2i} PPE + PERFORMANCE + \epsilon_{it}$ ); (4) Modified Jones Panel Data ( $ACC = \beta_i 1/TA_{-1} + \beta_{1i} \Delta SALES - \Delta RECEIV + \beta_{2i} PPE + \epsilon_{it}$ ) and (5) Performance ADJ Jones Panel Data ( $ACC = \beta_i 1/TA_{-1} + \beta_{1i} \Delta SALES - \Delta RECEIV + \beta_{2i} PPE + PERFORMANCE + \epsilon_{it}$ ). (PAVLOVIC, ET AL, 2018, p. 347)

Where:

ACC = total accruals

TA = total assets at the end of year  $t_1$

$\Delta SALES$  = the change in sales from year  $t_1$  to  $t$

$\Delta RECEIV$  = the change in receivables from year  $t_1$  to  $t$

PPE = gross property, plant, and equipment in year  $t$  for firm  $i$ .

$\epsilon_{it}$  = error term in year  $t$  for firm  $i$ .

**Table 1: Performance ADJ Jones Panel Data model**

xtreg tacts TA1 chrev_rec ppeta ROA, fe vce(robust)			
Fixed-effects (within) regression	Number of obs	=	144
Group variable: number	Number of groups	=	36



R-sq: within = 0.6787	Obs per group: min = 4
between = 0.1401	avg = 4.0
overall = 0.3660	max = 4
F(4,35) = 83.10	
corr(u_i, Xb) = -0.6788	Prob > F = 0.0000
(Std. Err. adjusted for 36 clusters in number)	
-----	
Robust	
tacts	Coef. Std. Err. t P> t  [95% Conf. Interval]
-----+-----	
TA1	-16300.76 12440.93 -1.31 0.199 -41557.19 8955.671
chrev_rec	-.0071859 .0248818 -0.29 0.774 -.0576987
	.0433269
ppeta	.0050822 .018824 0.27 0.789 -.0331326 .043297
ROA	.9367527 .0521863 17.95 0.000 .8308088 1.042697
_cons	.0244675 .036115 0.68 0.503 -.0488499 .0977849
-----+-----	
	sigma_u   .1040239
	sigma_e   .07656414
	rho   .64862115 (fraction of variance due to u_i)
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Source: PAVLOVIC, ET, AL, 2018, p.348

## 5. Key Findings on Influence of Board of Director's Age on Earnings Management

The ANOVA table shows that this relationship is significant at the level Sig. 0.567 which is higher than 0.005. The Adjuster R square shows negative relationship between variables (-0.031) at the level of significance of 0.567. According to the results obtained, this relationship can be considered as statistically insignificant. According to the above mentioned this relationship can be considered as statistically insignificant with the F value of 0.749.

**Table 2: Influence of the board of director's age on earnings management for the period 2013-2016**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.306 <sup>a</sup>	0.094	-0.031	7.35105

a. Predictors: (Constant), 2013. 2014. 2015. 2016.



**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	161.892	4	40.473	0.749	0.567 <sup>b</sup>
	Residual	1567.101	29	54.038		
	Total	1728.992	33			

a. Dependent Variable: Average board age

b. Predictors: (Constant), 2013. 2014. 2015. 2016.

Source: Author's own calculations

The ANOVA table shows that this relationship is significant at the level Sig. 0.188 which is higher than 0.005. The Adjuster R square shows positive relationship between variables (0.074) at the level of significance of 0.188. According to the results obtained, this relationship can be considered as statistically insignificant.

**Table 3: Influence of the chairman's age on earnings management for the period 2013-2016**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.431 <sup>a</sup>	0.186	0.074	12.259

a. Predictors: (Constant), 2013. 2014. 2015. 2016.

**ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	994.665	4	248.666	1.655	.188 <sup>b</sup>
	Residual	4358.276	29	150.285		
	Total	5352.941	33			

a. Dependent Variable: Chairman

b. Predictors: (Constant), 2013. 2014. 2015. 2016.

Source: Author's own calculations

The ANOVA table shows that this relationship is significant at the level Sig. 0.189. The Adjuster R square shows positive strong relationship between variables (0.0487) at the level of significance of 0.189. Because significance is higher than 0.05, this relationship can be considered as statistically insignificant.

**Table 4: Influence of chairman's age on earnings management where woman is the chairman for the period 2013-2016**

Model	R	R Square <sup>b</sup>	Adjusted R Square	Std. Error of the Estimate
1	0.811 <sup>a</sup>	0.658	0.487	0.027

a. Predictors: 2013., 2014., 2015, 2016.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.003	1	0.003	3.845	0.189 <sup>b</sup>
	Residual	0.002	2	0.001		
	Total	0.004	3			

a. Dependent Variable: Woman chairman

b. Predictors: (Constant), 2013., 2014., 2015, 2016.

Source: Author's own calculations

## 6. Interpretation of the Results

This is the first study, not only in Serbia, but in the whole region, which analyzes the influence of board of director's age on earnings management practices, which made its results significant for this very actual topic.

The analysis shows that the average age of board's member is close to 51 years with huge dispersion. The youngest board has in average 37 years, while the older one has close to 71 years, with standard deviation of 7.23835. The women made 22% of the members of the board. The average age of the chairman is close to 51 years, which is very similar to the average age of the board members. But the standard deviation of the average age of the chairman is 76% higher than the average age of the standard deviation of the average board age. The youngest chairman has 32 years, while the oldest one has 77 years. In 4 enterprises women are the board's chairman.

We find no evidence of the significant linear relationship between board of director's age and earnings management. The results of the analysis suggest that there is an *insignificant relationship* between board of director's age and earnings management. In the above table we can see that R square for the analyzed period is 0.094 with the standard error of the estimate of 7.35105, while the Sig. is 0.567 which is higher than 0.05.

We also find no evidence of the significant linear relationship between chairman's age and earnings management. The results of the analysis suggest that there is an *insignificant relationship* between chairman's age and earnings management. In the above table we can see that R square for the analyzed period is 0.186 with the standard error of the estimate of 12.259, while the Sig. is 0.188. So, there is a weak correlation with is not significant.

But, our analysis reveals something unexpected. Namely, the women members of the board of directors are significantly younger than men. The women made 22% of the whole members of the boards, and 55% of boards are mixed-gender. Four women are the chairman, and the youngest of all chairmen in the sample is a woman. The oldest woman chairman has 55 years, what is 22 years less than the oldest man chairman. In average, women in boards are younger than men. In 42.11% of mixed-gender boards, the woman is the youngest member of the board, while in 60.87% of mixed-gender boards' women are younger than the average age of the members of these boards. The average age of woman members of board (without the chairman) is approximately 49 years which is closely than 8 ½ years less than the average age of man board members (without the chairman).

## 7. Conclusion

Agricultural sector is very important sector for Serbia, with significant influence on the whole economy (see: FILIPOVIC, ET AL, 2011; VUKOVIC, ET AL, 2017; KNEZEVIC, ET AL, 2017). It is the reason why researches in this sector, including earnings management researches, are particularly important. Due to fact that earnings management in Serbia is under control of the board of directors, it has been investigated if board director's age influence these activities. It is well known that the meaning of life is strongly influenced by aging. So, it was not a surprise when many researchers argue that age is connecting with ethical behavior and from that it is expected that ethical behavior influence truthfulness and fairness of financial reporting. Our study did not confirm impact of board of director's age on earnings management. We did not find evidence of gender diversity on earnings management as well, even when a women is the board's chairman.

But, our analysis reveals something unexpected witch throws new light on gender studies. From our research results it was quite obvious that female members are much younger than their male counterparts. In 42.11% of the mixed-gender boards, female member is at the same time the youngest member of the board. In 60.87% of mixed gender boards,

female is even younger than the average age of the rest of the board members. The oldest female when she is the chairman of the board at the same time is 22 years younger than its male chairman counterpart. Average age of female members of board without chairman is 8 ½ years younger than the average age of male board members without chairman. In the leading companies from the Fortune 500 and the S&P 500 Indexes (CRIST, VOLTER, 2017, p. 64), the youngest CEO female is 45 years old, what is 13 years more than the youngest female which is the board chairman of Serbian agricultural companies, while the oldest female is 64 years old whereas the oldest female which is the board chairman is 55 years, what is 9 years less. The average age of sitting CEOs female is USA's companies is 56 years, while the average age of sitting female in boards of directors of Serbian agricultural companies is 47, what is 9 years younger than its USA counterpart. It seems that is it more likely for women if she is younger to participate in the board of directors of Serbian agricultural companies, and it is almost the rule that a woman should be younger than her other colleagues in the board. As it could be seen from these results, this is not the case elsewhere (for example, this is not the case in the USA). Having in mind that younger person seems to have less authority than the older one, the absence of influence of gender diversity on decision making could be partially be explained by this fact. This effect seems to be stronger when a female is surrounded by older male counterparts, especially when she is the youngest member of the board, what is the case in almost half gender-mixed companies in Serbian agriculture sector.

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