



Does Complexity Audit Task, Time Deadline Pressure, Obedience Pressure, and Information System Expertise Improve Audit Quality?

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ABSTRACT

A survey of 216 auditors was conducted to investigate about the potential determinants of audit quality. This study using multiple linear regression technique. We find that complexity audit task, obedience pressure and information system expertise positively related to audit quality. This finding suggest that complexity audit task, obedience pressure and information system expertise play a significant part to improve the quality of audit. Further, complexity audit task and obedience pressure from superior can not make auditor fails to complete the required work and they remains improve audit quality. This study also find that there is no significant effect of time deadline pressure on audit quality. Information system expertise will greatly helpful auditors to expedite the auditing (shorten the time of the auditing) and will be useful in determination of audit procedures, so that can reduce the complexity of task and, in turn, can produce a quality audit reports.

Keywords: Complexity Audit Task, Time Deadline Pressure, Obedience Pressure, Information System Expertise, Audit Quality

JEL Classifications: M42, M51, M15

1. INTRODUCTION

Much attention has been given recently to audit quality by regulators and researchers (Francis, 2011; Knechel et al., 2013; European Union, 2014; IAASB, 2014). The concept of audit quality is, however, difficult to define or describe, and there is still little consensus on how to measure it. Business-to-business (B2B) and business-to-customers (B2C) integration began with large and midsized companies mandating methods of receiving business information technology. B2B or B2C integration means the integration, automation and optimisation of key business processes of a companies organisation. B2B E-commerce is particularly challenging for auditors because it spans organizational boundaries that link firms through their collaborative work processes and interlinking transactions (Subramaniam and Youndt, 2005). An understanding of the information system will also assist the auditor in determining appropriate audit procedures that can reduce the complexity of auditing and reduce the pressure caused by limited time budget. In addition to knowledge of accounting and auditing, an E-commerce auditor must possess knowledge of

systems, networks, and data bases (Raghunathan and Raghunathan, 1994). Many studies showed that there were differences in auditor judgment taken on a high task complexity and task complexity is low (Abdolmohammadi and Wright, 1987; Chung and Monroe, 2001). The study showed that the high complexity of the audit appear as the high variability and ambiguity in the task of auditing and ultimately an indication of the cause of decline in audit quality.

Considerations on organizational and environmental pressure have prompted many researchers to focus his research on how auditors respond to the pressure of professional social influence that comes from within the company. In particular, some researchers have previously provided evidence that auditors are susceptible to social influence pressure from superior (boss) to perform the behavior deviates from the norm or professional standards (DeZoort and Lord, 1994) and co-workers (peers) (Ponemon, 1992) in the company.

Prior research has often relied upon a general definition of time pressure and in reviewing the prior research it has often been

necessary to review the exact process that was used in varying time pressure to determine if the research was oriented toward examining time budget or time deadline pressure (Margheim et al., 2005). Auditors constantly have to trade off the time dedicated to auditing with the cost of performing it (Otley and Pierce, 1996). Pierce and Sweeney (2004) found that time pressure has increased in audit firms and is far higher than optimal on auditors performance. In general, time pressure has been shown to have a detrimental impact on individuals' decision-making ability (Svenson and Edland, 1987). Research by Margheim et al. (2005) examined the impact of time budget pressure and time deadline pressure on auditor. The results indicated that both types of time pressure had negative effects on the occurrence of the auditor quality. However, information system expertise will very helpful auditors to expedite the auditing (shorten the time of the auditing), which could ultimately result in a higher quality audit reports (Bierstaker et al., 2001). There is a scarce number of auditing research has assessed what interrelations the deadline pressure have on audit quality. When time deadline pressure increased, audit effectiveness declined and their efficiency improved (McDaniel, 1990). Choo (1995) indicates that as deadline pressure increases to higher levels, performance declines because relevant cues are also ignored.

Issues regarding the need for audit quality resulting from the audit work by staff of auditors which the quality of any work produced auditor staff will ultimately affect the quality of the audit is the background of the research questions that will be answered in this study. The objective of this study is to investigate the effect of complexity audit task, time deadline pressure, obedience pressure and information system expertise on audit quality. This study was conducted using a survey on auditors who work in a big4 and the second tier of accounting firm in Indonesia. The analysis units are the auditor in junior, senior, and supervisor. Data were analysed using multiple linear regression.

This paper will first discuss theoretical development followed by the research method, including data collection and measurement. Results will be presented empirically, with discussion and limitations establish the final section of this paper.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Complex Audit Tasks

The complexity of the audit based on the individual's perception of the difficulty of a task audit. Some of the audit assignment considered as task with high complexity and difficult while others perceive it as an easy task (Jiambalvo and Pratt, 1982).

Audits are becoming increasingly complex due to the difficulty (task difficulty) and the variability of the task (task variability) audit of the higher (Gupta et al., 1999). Further, Gupta et al. (1999) defines complexity as the complexity of the task and the ability to analyze a task and the availability of standard operating procedures. While the task is defined as the degree of variability in familiar task or not, regular or irregular, frequent or otherwise.

Research conducted by Abdolmohammadi and Wright (1987) found that there were differences in auditor judgment taken on a high task complexity and task complexity is low. Research conducted by Chung and Monroe (2001) also found that high task complexity affect the judgment taken by auditor. When high complexity of the audit appear as the high variability and ambiguity in the task of auditing and ultimately an indication of the cause of decline in audit quality.

H₁: Complexity audit task is negatively related to audit quality.

2.2. Time Deadline Pressure

Time deadline pressure occurs when a specific point in time (i.e., a deadline) for task completion is specified and it is difficult to complete the required work by the deadline. When time deadline pressure increased, audit effectiveness declined and their efficiency improved (McDaniel, 1990). Choo (1995) indicates that as deadline pressure increases to higher levels, performance declines because relevant cues are also ignored. In contrast, research by Glover (1997) suggested that as time deadline pressure increases from low to moderate levels, auditor judgement performance improves due to the reduction in the usage of nondiagnostic (i.e., irrelevant) cues. Research by Margheim et al. (2005) examined the impact of time budget pressure and time deadline pressure on auditor. The results indicated that both types of time pressure had negative effects on the occurrence of the auditor quality.

H₂: Time deadline pressure is negatively related to audit quality.

2.3. Obedience Pressure

Research on social influence pressure has been performed by DeZoort and Lord (1994), DeZoort and Lord (1997). In the social psychology literature describe the three types of social influence pressure include: Compliance pressure, conformity pressure and obedience pressure (Brehm and Kassin, 1990). The theory underlying of the obedience pressure states instructions boss (superior) in an organization influence behavior of individuals who ruled (subordinate) because superior has the authority to give orders (DeZoort and Lord, 1997). The higher the obedience pressure, the lower the quality of the audit decision. Auditors under the orders of superiors to deviate from professional standards tend to obey the command, so the quality of the audit will be lower. Milgram's (1974) obedience theory suggest that individuals subjected to obedience pressure will make decisions contrary to their own attitudes, beliefs, and values, in part, because they can remove themselves from responsibility for their judgements and decisions after an individual with authority directs them to an action.

H₃: Obedience pressure is negatively related to audit quality.

2.4. Information System Expertise

Auditors' requisite knowledge for effective B2B E-commerce audits entails not only the nature of financial transactions and processes, but also the technologies that enable these transactions and processes to occur (Pathak et al., 2010). Thus, an understanding of the information system will greatly help the individual auditor to complete the tasks assigned by the superior

very quickly (Bierstaker et al., 2001). This is also powered by Bierstaker et al. (2001) who argued that an understanding of the information systems very helpful auditors to expedite the auditing (shorten the time of the auditing), which could ultimately result in a higher quality audit reports. Auditor’s understanding of the information system will be useful in the determination of audit procedures that can reduce the complexity of the task and, in turn, can produce a quality audit reports.

H₄: Information system expertise is positively related to audit quality.

3. METHODS

3.1. Sample Selection

The sample is restricted to auditors in Indonesia. Initial sampel in this study were 231. Respondents in this study divided as a big 4 and non big 4 Public Accountant Firms in D.I. Yogyakarta and Bandung and who served as senior and junior auditor. The questionnaires distributed in October 2014 until December 2015. There are 186 respondents collected through snowball sampling technique and 45 questionnaires through paperbased techniques. However, 15 questionnaires were not returned. The final sample in this study totals 216 respondents.

3.2. Empirical Model

To test the hypotheses, we employ a multiple linear regression model and predict a positive sign on the coefficient of variables as presented below.

$$AQ = \beta_0 + \beta_1 CAT + \beta_2 TDP + \beta_3 OP + \beta_4 IS + \epsilon \tag{1}$$

Where, AQ is audit quality, CAT is complexity audit task of auditors, TDP is time deadline pressure of auditors, OP is obedience pressure that auditors perceived and IS is information system expertise of auditors.

4. RESULTS

4.1. Descriptive Statistics and Correlation

Respondents were collected from 16 public accountant firms consist 4 public accountant firms as a big 4 international accountant firm that are located in Jakarta and 5 public accountant firms as a local public accountant firms (non big 4) that located in Yogyakarta and 3 public accountant firms as a local public accountant firms (non big 4) that located in Bandung. The big 4 public accountant firms according to the website www.big4.com consist PricewaterhouseCoopers, Deloitte Touche Tohmatsu, Ernst and Young and KPMG. There are 231 questionnaires had been send using snowball sampling technique comprised 186 questionnaires had been send by email and 45 questionnaires by paperbased techniques. However, there are 15 of 45 questionnaires that used by paperbased were not returned. The questionnaire can be used for this study is as much as 216 questionnaires.

We present descriptive statistics in Tabel 1 for the sample used in testing the hypotheses. As the data indicate, auditors in the

sample have higher complex audit task and obedience pressure from manager level in the audit firm. In the other hand, we note that auditors have information systems expertise to help them completing the audit task. Table 1 indicate that the respondent have higher time deadline pressure by superior level (supervisor or manager) in the audit firms. Table 2 present that 73.6% of auditors in the audit firm is male.

Table 1: Variable descriptive statistics

Variable	N	Minimum	Maximum	Mean±SD
Age	216	21.00	29.00	24.3796±1.68284
Gender	216	1.00	2.00	1.2639±0.44176
AQ1	216	3	5	4.88±0.354
AQ2	216	2	5	4.37±0.580
AQ3	216	3	5	4.79±0.432
AQ4	216	3	5	4.40±0.510
AQ5	216	3	5	4.59±0.529
AQ6	216	2	5	4.70±0.524
AQ7	216	3	5	4.65±0.516
AQ8	216	3	5	4.79±0.443
AQ9	216	3	5	4.81±0.424
AQ10	216	3	5	4.82±0.417
AQ11	216	3	5	4.81±0.427
AQ12	216	3	5	4.27±0.621
AQ13	216	3	5	4.76±0.467
AQ14	216	3	5	4.87±0.368
AQ15	216	3	5	4.78±0.456
AQ16	216	3	5	4.83±0.402
AQ17	216	2	5	4.83±0.435
AQ18	216	3	5	4.89±0.343
AQ19	216	3	5	4.88±0.362
AQ20	216	3	5	4.88±0.335
CAT1	216	2	5	3.91±0.707
CAT2	216	3	5	4.56±0.680
CAT3	216	2	5	4.19±0.665
CAT4	216	2	5	4.23±0.721
CAT5	216	2	5	4.37±0.722
CAT6	216	2	5	4.60±0.640
CAT7	216	2	5	4.73±0.558
CAT8	216	3	5	4.67±0.587
CAT9	216	3	5	4.68±0.560
CAT10	216	2	5	4.73±0.547
CAT11	216	2	5	4.49±0.632
TDP1	216	1	4	3.35±0.566
TDP2	216	1	5	3.58±1.045
TDP3	216	1	5	3.98±0.922
TDP4	216	1	5	3.37±0.772
OP1	216	1	5	3.97±1.063
OP2	216	1	5	3.67±1.020
OP3	216	2	5	4.25±0.994
OP4	216	1	5	3.80±1.023
OP5	216	1	5	4.00±1.080
OP6	216	1	5	2.69±1.058
IS1	216	2	5	4.51±0.765
IS2	216	1	5	4.26±0.782
IS3	216	2	5	4.67±0.639
IS4	216	2	5	4.50±0.625
IS5	216	2	5	4.34±0.677
IS6	216	1	5	4.44±1.005
IS7	216	2	5	3.73±0.802
IS8	216	1	5	4.56±0.903
Valid N (listwise)	216			

AQ₁₋₂₀: Audit quality, CAT¹⁻¹¹: Complexity audit task, TDP₁₋₄: Time deadline pressure, OP₁₋₆: Obedience pressure, IS₁₋₈: Information system expertise, SD: Standard deviation

4.2. Assessment of Classical Assumptions Test

4.2.1. Normality test

Figure 1 provide a histogram graph which indicate that the observed data have normal distribution. We also see Figure 2 provide that normal probability plot (normal P-P plot) very closed to diagonal linear and follow the pattern. Normality test results indicate that residual distributed normally in the regression model. So that, regression model meet the normality assumption.

4.2.2. Multicolinierty test

Table 3 presents Pearson correlation coefficients for the variables in the regression model. We note that only complexity audit task variable have a higher correlations with information system variable with correlations level as -0.459 or about 45.9%.

Table 2: Gender

Valid	Frequency (%)	Valid percent	Cumulative percent
Male	159 (73.6)	73.6	73.6
Female	57 (26.4)	26.4	100.0
Total	216 (100.0)	100.0	

Figure 1: Regression standardized residual. Dependent variable: Audit quality

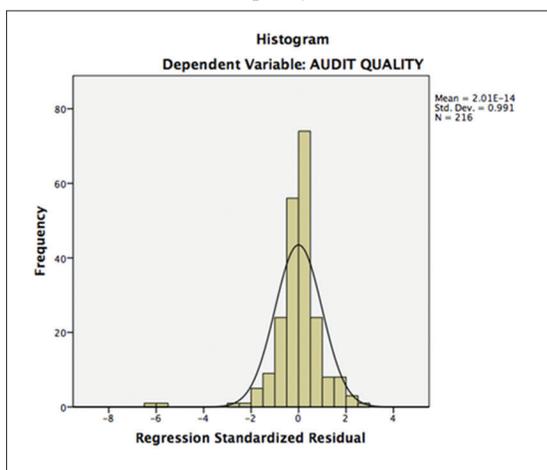
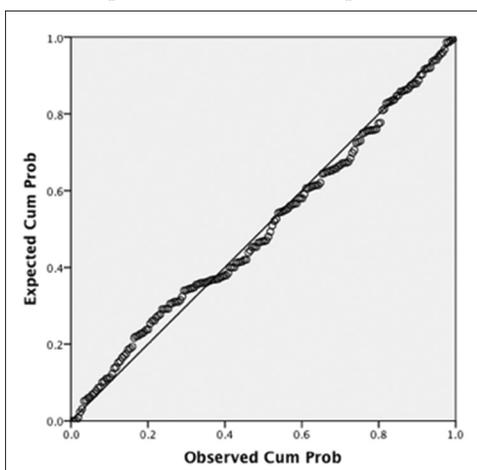


Figure 2: Normal probability plot of regression standardized residual. Dependent variable: Audit quality



However, this correlations level are no more than 95%. Therefore, there is no potential issue about multicollinearity in the regression model (Table 3).

We also note that Table 4 provide variance inflation factors (VIFs) for all variables are <10 and there is no independent variable have tolerance values <0.10 . Kennedy (2008) suggest that VIFs <10 do not warrant concern for multicollinearity when interpreting results.

4.2.3. Heteroscedastisity test

Figure 3 present heteroscedastisity test result by scatterplot pattern. In the Figure 3, we can see that there is no obvious pattern in the result and the plot spread widely in the graph line. According to this result, we note that there is no potential issue about heteroscedastisity in the regression model.

4.3. Multivariate Test Results

Table 5 present multivariate results for testing of H_1 . The positive coefficients ($P < 0.05$) on complexity audit task leads to rejections of H_1 and confirm that complexity audit task is positively related to audit quality. The finding of this study are contrast to prior research that high task complexity affect the judgment taken by auditor. When high complexity of the audit appear as the high variability in the task of auditing, auditor will be able to complete the required work and they remains improve audit quality. However, we also find that no evidence of a significant ($P > 0.05$) relationship between time deadline pressure and audit quality. These evidence leads to the rejection of the H_2 . The findings of this study indicating that there is no significant effect of time deadline pressure that perceived in individual auditor when a spesific point in time (i.e., a deadline) for task completion is specified and they will able to complete the required work by the deadline. These results contrast with prior research that Time deadline pressure have no related to audit quality.

We also find that the positive coefficients ($P < 0.05$) on obedience pressure reject the H_3 . These results leads to rejection of the theory underlying of the obedience pressure. The theory states instructions boss (superior) in an organization influence behavior of individuals who ruled (subordinate) because superior has the authority to give orders (DeZoort and Lord, 2001). According to the regression result, obedience pressure is positively related to audit quality. These results indicating that the higher the obedience pressure, can not make the lower the quality of the audit decision. Auditors under the orders of superiors remain obey from professional standards, so the quality of the audit will be higher. The coefficients on information system of Table 6 are positif and significant ($P < 0.05$) and support H_4 . These results indicating that Information system expertise is positively related to audit quality. This study robust to the prior research. Information system expertise will help the individual auditor to complete the tasks assigned by the superior very quickly as described in prior research (Bierstaker et al., 2001). Auditors' requisite knowledge for effective B2B E-commerce audits entails not only the nature of financial transactions and processes, but also the technologies

Table 3: Collinearity statistics

Coefficients ^a							
Model	Unstandardized coefficients		Standardized coefficients	t	Significant	Collinearity statistics	
	B	Standard error	Beta			Tolerance	VIF
1							
(Constant)	8.816	0.444		19.867	0.000		
Complexity audit task	0.496	0.066	0.451	7.461	0.000	0.586	1.708
Time deadline pressure	-0.081	0.100	-0.046	-0.811	0.418	0.674	1.483
Obedience pressure	0.131	0.059	0.125	2.215	0.028	0.673	1.485
Information system	0.445	0.071	0.345	6.278	0.000	0.707	1.414

^aDependent variable: Audit quality, VIFs: Variance inflation factors

Table 4: Coefficient correlations^a

Model	Information system	Time deadline pressure	Obedience pressure	Complexity audit task
Correlations				
Information system	1.000	0.009	-0.080	-0.459
Time deadline pressure	0.009	1.000	-0.399	-0.255
Obedience pressure	-0.080	-0.399	1.000	-0.206
Complexity audit task	-0.459	-0.255	-0.206	1.000
Covariances				
Information system	0.005	6.419E-005	0.000	-0.002
Time deadline pressure	6.419E-005	0.010	-0.002	-0.002
Obedience pressure	0.000	-0.002	0.004	-0.001
Complexity audit task	-0.002	-0.002	-0.001	0.004

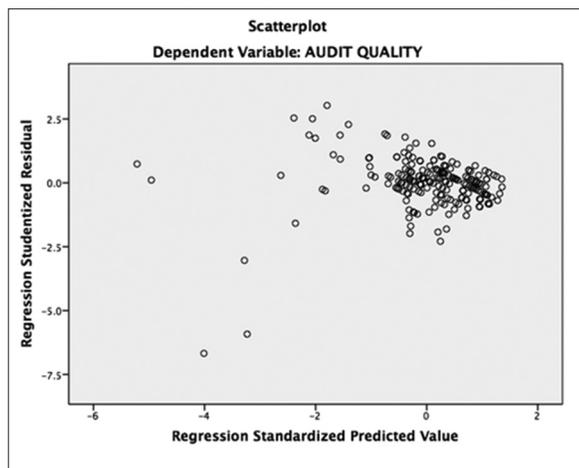
^aDependent variable: Audit quality

Table 5: Model summary

Model	R	R ²	Adjusted R ²	Standard error of the estimate
1	0.741 ^a	0.549	0.541	0.55182

^aPredictors: (Constant), information system, time deadline pressure, obedience pressure, complexity audit task

Figure 3: Scatterplot. Dependent variable: Audit quality



that enable these transactions and processes to occur (Pathak et al., 2010). Thus, information system expertise will greatly helpful auditors to expedite the auditing (shorten the time of the auditing), which could ultimately result in a higher quality audit reports. Auditor’s understanding of the information system will be useful in the determination of audit procedures that can reduce the complexity of the task and, in turn, can produce a quality audit reports.

5. CONCLUSION AND IMPLICATIONS

In this study we investigate the effect of complexity audit task, time deadline pressure, obedience pressure and information system expertise to audit quality. We find that high complexity of the audit appear as the high variability in the task of auditing, can not make auditor fails to complete the required work and they remains improve audit quality. In the other hand, this study also find that there is no significant effect of time deadline pressure that perceived in individual auditor when a specific point in time (i.e., a deadline) for task completion is specified, so they will able to complete the required work by the deadline and remains to improve audit quality. This study confirm that the higher the obedience pressure, can not make the lower the quality of the audit decision. Auditors under the orders of superiors remain obey from professional standards, so the quality of the audit will be higher. These results also provide evidence of the significant impact that information system expertise will greatly helpful auditors to expedite the auditing (shorten the time of the auditing) and will be useful in the determination of audit procedures, so that can reduce the complexity of the task and, in turn, can produce a quality audit reports.

This study suggest that at the big 4 and non big 4 audit firm should be concern about audit quality and senior and junior auditor performance will be affect to the quality of audit. Our study is subject to a limitations. Our study no focusing on fee audit that could be associated with audit quality (Bills and Stephens, 2015). However, our recommendation to the future research, may be examine with focusing on particular issues such as audit risks and

Table 6: Multiple regression test

Coefficients ^a					
Model	Unstandardized coefficients		Standardized coefficients	t	Significant
	B	Standard error	Beta		
1					
(Constant)	8.816	0.444		19.867	0.000
Complexity audit task	0.496	0.066	0.451	7.461	0.000
Time deadline pressure	-0.081	0.100	-0.046	-0.811	0.418
Obedience pressure	0.131	0.059	0.125	2.215	0.028
Information system	0.445	0.071	0.345	6.278	0.000

^aDependent variable: Audit quality

may be on the fee premiums (discounts) audit could be associated with higher (lower) audit quality.

REFERENCES

- Abdolmohammadi, M., Wright, A. (1987), An examination of the effects of experience and task complexity on audit judgments. *The Accounting Review*, 62(1), 1-13.
- Bierstaker, J.L., Burnaby, P., Thibodeau, J. (2001), The impact of information technology on the audit process: An assessment of the state of the art and implications for the future. *Managerial Auditing Journal*, 16(3), 159-164.
- Bills, K.L., Stephens, N.M. (2015), Spatial Competition at the Intersection of the Large and Small Audit Firm Markets. Forthcoming at *Auditing, a Journal of Practice & Theory*.
- Brehm, S.S., Kassim, S.M. (1990), *Social Psychology*. Boston: Houghton Mifflin Co.
- Choo, F. (1995), Auditors' judgment performance under stress: A test of the predicted relationship by three theoretical models. *Journal of Accounting, Auditing and Finance*, 10, 611-641.
- Chung, J., Monroe, G.S. (2001), A research note on the effects of gender and task complexity on an audit judgment. *Behavioral Research in Accounting*, 13, 111-125.
- DeZoort, F.T., Lord, A.T. (1994), An investigation of obedience pressure effects on auditors' judgments. *Behavioral Research in Accounting*, 6 Suppl, 1-30.
- DeZoort, F.T., Lord, A.T. (1997), A review and synthesis of pressure effects research in accounting. *Journal of Accounting Literature*, 16, 28-85.
- European Union. (2014), Directive 2014/56/EU of the European Parliament and of the Council of 16 April 2014 Amending Directive 2006/43/EC on Statutory Audits of Annual Accounts and Consolidated Accounts Text with EEA Relevance. Brussels: European Union.
- Francis, J.R. (2011), A framework for understanding and researching audit quality. *Auditing: A Journal of Practice and Theory*, 30(2), 52-125.
- Glover, S.M. (1997), The influence of time pressure and accountability on auditors' processing of nondiagnostic information. *Journal of Accounting Research*, 35, 213-226.
- Gupta, P.P., Umanath, N.S., Dirsmith, M.W. (1999), Supervision practices and audit effectiveness: An empirical analysis of GAO audits. *Behavioral Research in Accounting*, 11, 27-50.
- International Auditing and Assurance Standards Board (IAASB). (2014), *A Framework for Audit Quality: Key Elements that Create an Environment for Audit Quality*. New York: The International Federation of Accountants (IFAC).
- Jiambalvo, J., Pratt, J. (1982), Task complexity and leadership effectiveness in CPA firms. *The Accounting Review*, 57(4), 734-750.
- Knechel, W.R., Krishnan, G.V., Pevzner, M.B., Shefchik, L., Velury, U. (2013), Audit quality: Insight from the academic literature. *Auditing: A Journal of Practice and Theory*, 32 Suppl, 385-421.
- Kennedy, P. (2008), *A Guide to Econometrics*. 6th edition. Malden, MA: Blackwell Publishing.
- Lord, A.T., DeZoort, F.T. (2001), The impact of commitment and moral reasoning on auditors' responses to social influence pressure. *Accounting, Organizations and Society* 26 (3): 215-235.
- Margheim, L., Kelley, T., Pattison, D. (2005), An empirical analysis of the effects of auditor time budget pressure and time deadline pressure. *The Journal of Applied Business Research*, 21(1) 23-36.
- McDaniel, L.S. (1990), The effects of time pressure and audit program structure on audit performance. *Journal of Accounting Research*, 28(2), 267-285.
- Milgram, S. (1974), Obedience to authority. An experimental view. *Journal of Peace Research*, 11(4), 350-351.
- Otley, D.T., Pierce, B.J. (1996), Auditor time budget pressure: Consequences and antecedents. *Accounting, Auditing and Accountability Journal*, 9(1), 31-58.
- Pathak, J., Lind, M., Abdolmohammadi, M. (2010), E-commerce audit judgment expertise: Does expertise in system change management and information technology auditing mediate e-commerce audit judgement expertise? *Informatica Economica*, 14, 5-20.
- Pierce, B., Sweeney, B. (2004), Cost-quality conflict in audit firms: An empirical investigation. *European Accounting Review*, 13(1), 415-441.
- Ponemon, L.A. (1992), Auditor underreporting of time and moral reasoning: An experimental lab study. *Contemporary Accounting Research*, 9, 171-189.
- Raghunathan, B., Raghunathan, T.S. (1994), Adaptation of a planning system success model to information systems planning. *Information Systems Research*, 5(3), 326-340.
- Subramaniam, M., Youndt, M.A. (2005), The influence of intellectual capital on types of innovative capabilities. *Academy of Management Journal*, 49(3), 450-463.
- Svenson, O., Edland, A. (1987), Change of preferences under time pressure: Choices and judgements. *Scandinavian Journal of Psychology*, 29(4), 322-330.