Quality Management Mechanism, Job Satisfaction and Performance Audit

Kuang-Hua Wang[1] & Wun-Hong Su[1, 2]

[1] Feng Chia University, Taiwan

[2] Shantou University, China

Correspondence: Wun-Hong Su, Shantou University, China.

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Abstract

This paper extends the literature evaluating the relation between the quality management mechanism implementation of Taiwanese government audit and the job satisfaction of government auditors for the government auditors' identification of the influential factors to improve performance audit. The questionnaire survey was employed in this study. A total of 613 questionnaires were sent and 535 valid responses were collected. The return rate is 87.28%. The empirical results demonstrate that most government auditors fulfill the governmental policies and are satisfied with the current job condition after the senior executives strive to establish the auditing quality management mechanism. The influential factors of performance audit enhancement for government auditors appear significance.

Keywords: Governmental Auditing Institutions, Performance Audit, Quality Management Mechanism, Job Satisfaction

1. Introduction

Government audit is the systematic and professional examination of financial, administrative and other operations of a public entity, the governmental company and/or a governmental program by the government auditors. The inherent function of the government audit is to ensure the validity and effectiveness of the financial information from the governmental bodies and provide the professional opinion (Berry et al., 1987; Bowerman and Hawksworth, 1999; Hayes and Baker, 2014). The functions of the government audit are also deduced to executive the performance audit for the economy, efficiency and effectiveness of the administration plans. Meanwhile, the government audit is anticipated to point out the defects of the present system and offer the positively constructive suggestions. Thus, the demand of the performance audit appears particularly concernment (Brazelay, 1996; Christopher and Hilkka, 1997; Woodside et al., 2016).

Taiwanese governmental auditing institutions implement a unified auditing management mechanism. The given function includes the supervision of the financial budget and the examination of annual final accounts. The management mechanism consists of the compliance audit and the performance audit. The compliance audit is to primarily examine whether the process of the financial operation conforms with the budget arrangements and the relevantly financial regulations. Recently, the domain of the government audit is extended from the traditionally financial audit to the performance audit which even more emphasises the government administrative efficiency, and stresses Economy, Efficiency and Effectiveness (Jan and Wu, 2010; Woodside et al., 2016). Consequently, the performance audit becomes the key indicator of performance management for the government.

In 2007 National Audit Office, R.O.C (Taiwan) (NAO) has promulgated "the mechanism establishment of strategy management and performance evaluation for the auditing institutions to promote the auditing function and quality". In 2011, "the mechanisms of strategy management and performance evaluation" are implemented as a trial step for the governmental auditing institutions Meanwhile Balanced Scorecard (BSC) is implemented to evaluate the overall auditing performance by six strategy goals and thirteen performance evaluations on the basis of the operating result, customer service, human development and internal process. The governmental auditing institutions positively promote the strategy management and performance evaluation.

However, there remains no organisational culture and commercial characteristics for whole quality management mechanism. Deming (1986) regards the continuous improvement as the significantly basic for whole quality management, which is a key way to improve the organisational competitiveness. The whole quality management can not only aid the improvement of output and services but also better meet the requirements of the customers

(Karapetrovic and Willborn, 1998; Bowerman and Hawksworth, 1999; Wu and Wang, 2004; Wang et al., 2007; Brown et al., 2016). The organisations also viewed the quality management as a strategical indicator of striving excellent services (Berry et al, 1987; Rezaee, 1996; Cheng et al., 2001; Jan and Wu, 2010; Hayes and Baker, 2014; Brown et al., 2016).

Lately, the international professional auditing organisations (Note 1) all positively dig into the research of auditing quality management and extremely advocate establishing the auditing quality management mechanisms as the standard-compliant for performing auditing work. A set of comprehensive quality management mechanism remains lack in Taiwan as the existing related operation rules (Note 2) and the relevant provisions of auditing quality (Note 3) are too scattered. In 2010, NAO promulgated "actively establishing the quality management mechanism for the auditing institutions to further improve the government auditing quality". In 2012 NAO proposed "the quality management mechanism of auditing institutions" based on "Auditing Quality Management mechanism" from Office of the Auditor General of Canada. The proposal primarily aims to promote the quality of service and auditing report from the auditing institutions and achieve the better execution results of performance audit.

Prior studies (Note 4) mainly explore the executive power of government performance audit, the impact of government auditors' professional skill on increasing working performance and the result of auditing work by conducting the computer technology. The issues relating to the job satisfaction and performance audit are also widely discussed. The relevant researches (Note 5) involve the impact of the personal characteristics and working character on the benefit of auditing job and job satisfaction, the knowledge and skills of auditors in the auditing institutions, the empirical study of government performance audit and the performance evaluation model of the auditing institutions.

However, the relation between the implementation of quality management mechanism by government audit, the job satisfaction of government auditors for the influential factors of performance audit enhancement remains unconsidered. This study attempts to fill the gap of the insufficient literatures by surveying government auditors who work in the central and local governmental institutions for the implementation of quality management mechanism, the job satisfaction and identification of influential factors to improve performance audit.

The remainder of the paper is organised as follows. In the following section, an overview of the quality management mechanism implementation by government audit and prior research into accounting for the job satisfaction of government auditors and the influential factors of performance audit enhancement are introduced. Meanwhile hypotheses are developed. In Section 3 the research design is described and includes the various measures and control variables used in the analyses. Section 3 also presents the sample selection. Section 4 provides some preliminary descriptive results and sets out the main results of the analysis regarding the relations between the implementation of quality management mechanism by government audit and the job satisfaction of government auditors for the influential factors of performance audit enhancement. Finally, the conclusions are presented in Section 5.

2. Literature Review and Hypothesis Development

The quality management of public audit includes organisation (auditing institution), people (auditor) and the auditing process (Karapetrovic and Willborn, 1998; Bowerman and Hawksworth, 1999; Brown et al., 2016). Based on "Auditing Quality Management Mechanism" from Office of the Auditor General of Canada, Taiwanese government established "the quality management structure of auditing institutions". The five essential factors of quality management mechanism for the Taiwanese auditing institutions are thus, ensured: leadership, people, auditing work, customer and continuous improvement. Therefore, Taiwanese auditing institutions are more likely to strengthen the assessment function of government audit, improve auditing quality and enhance quality efficiency.

Prior studies (e.g. Karapetrovic and Willborn, 1998; Cheng et al., 2001; Wang et al., 2007) indicate that there is a significantly positive relation between the promotion of quality management mechanism and job satisfaction of auditors. The promotion of quality management mechanism results in the significantly rise of job satisfaction and organisational identification from auditors. The excellent quality management mechanism can increase the satisfaction of clients and auditors (Rezaee, 1996; Karapetrovic and Willborn, 1998; Cheng et al., 2001; Wang et al., 2007). The adoption of quality management mechanism can not only lower execution cost and increase job performance but also enhance the job satisfaction of auditors, the satisfaction of clients and the enterprise competitiveness (Karapetrovic and Willborn, 1998; Cheng et al., 2001; Koustelios, 2001; Wang et al., 2007). Wang et al. (2007) find the introduction of quality management mechanism by public sector significantly improves job satisfaction of auditos. Accordingly, this study examines the relation between the implementation of governmental auditing quality management mechanism and job satisfaction of government auditors. This is reflected in the following hypothesis:

H1: The implementation of quality management mechanism is positively associated with the job satisfaction of government auditors.

The establishment of quality management mechanism has significantly impacted on job performance by improving ability and responsibility. The implementation efficiency of quality management mechanism crucially influences the organisational performance (Karapetrovic and Willborn, 1998; Bowerman and Hawksworth, 1999; Cheng et al., 2001; Wang et al., 2007; Jan and Wu, 2010; Brown et al., 2016; Woodside et al., 2016). The essential factors to affect the auditing execution of government performance include the staff capacity, organisational commitment, self-condition of policy, resource input of policy and target group support (Brazelay, 1996; Woodside et al., 2016). Christopher and Hilkka (1997) investigate and find that auditors utilise quality management structure to ensure the quality of performance audit. Auditing institutions, therefore, have to strengthen quality management mechanism to increase the quality of performance audit.

In 2011 NAO promulgated "Guidelines on performance audit of auditing institutions" in view of the role of government audit transforming from the traditional supervision into the examination of public sector and supervision institution. The promotion of performance audit plays a very important role in supporting value-added services. The performance audit emphasises efficiency and benefit of public activities (Pollitt et al., 1999). The performance audit is also a mean to accomplishing performance responsibility and promote administrative progress (Barzelay, 1996). Based on public policy and public plan the public expenditure must be systematically analysed to review the benefit / result of government budget input and the efficiency of resource usage (Chang, 2006).

The primary aim of the present performance audit in Taiwan is to evaluate the administrative performance of government sectors and institutions. The evaluation scope of performance audit includes not only financial activities but also the input, output and result of government. Accordingly, this study intends to examine the relation between the implementation of auditing quality management mechanism and the influential factors of increasing performance audit. The purpose is to investigate whether the present promotion of quality management mechanism by government auditing institutions contributes to the influential factors of improving performance audit. This leads to the following hypothesis:

H2: The implementation of quality management mechanisms is positively associated with the influential factors of increasing performance audit.

The job satisfaction of government auditors mirrors the organisational identification (Bullen and Flamholtz, 1985), job accomplishment (Gregson, 1990; Fisher, 2001) and promotion reward (Bullen and Flamholtz, 1985; Gregson, 1990; Fisher, 2001). Job satisfaction consists of the workers obtaining the joyful sense and positive emotion from work (Porter and Lawler, 1968; Campbell, 1970). Job satisfaction is related with the work (Porter and Lawler, 1968). Therefore, job satisfaction (Note 6) includes the satisfaction extent of job independence, job achievements, job creation, job turnover, personal promotion and the relationship with the supervisors and colleagues (Hoppock, 1935; Seashore and Taber, 1975; Baron, 1983; Cheng et al., 2001; Koustelios 2001; Wang et al., 2007; Sharma et al., 2016).

The higher job satisfaction leads to better organisational performance (Seashore and Taber, 1975; Shore and Martin, 1989). Smith, Kendall and Hulin (1969) reveal that increasing relevant welfare and improving working condition can result in the higher job satisfaction and organisaional performance. Additionally, the job values are significantly related with job satisfaction (Cheng et al., 2001; Koustelios, 2001; Wang et al., 2007; Sharma et al., 2016). The job satisfaction is statistically associated with job performance. In order to increase the satisfaction and performance audit the government should put a high premium on working conditions and strengthen the communication and interaction with the government auditors. Accordingly, this study aim to shed light on the impact of the job satisfaction of government auditors on the identification of increasing performance audit by evaluating the relation between them. This is reflected in the following hypothesis:

H3: The job satisfaction of the government auditors is positively associated with the identification of the influential factors to improve performance audit.

The prior studies (Rezaee, 1996; Karapetrovic and Willborn, 1998; Bowerman and Hawksworth, 1999; Cheng et al., 2001) demonstrate that the introduction of quality management mechanism to the organisation leads to the higher service quality. The job satisfaction affects the organisational management performance. The organisational culture is positively and significantly related with the job satisfaction. The job satisfaction has also positively and statistically impacted on the organisational performance (Seashore and Taber, 1975; Cheng et al., 2001; Koustelios, 2001; Wang et al., 2007; Sharma et al., 2016). This study is intended to investigate whether the higher job satisfaction of the government auditors results in the higher auditing performance subsequent to the implementation of the quality management system.

This study verifies the mediation effect and the moderation effect of the job satisfaction to examine the role of government auditors' job satisfaction. The study verifies whether the implementation of auditing quality management mechanism has affected the identification of influential factors to increase performance audit. The study then verifies whether the job satisfaction of the government auditors can strengthen the relation between the implementation of auditing quality management mechanism and the identification of the influential factors to increase performance audit. Accordingly, this is reflected in the following hypothesis:

H4-1: By the mediation effect of government auditors' job satisfaction the implementation of auditing quality management mechanism is positively associated with the identification of influential factors to increase performance audit.

H4-2: The government auditors' job satisfaction can positively strengthen the relation between the implementation of auditing quality management mechanism and the identification of influential factors to increase performance audit.

3. Research Design

3.1 Research Framework

Figure 1 is the framework of this study drawn from the literature review and empirical hypotheses described above. In terms of governmental auditing institutions, the quality management mechanism of government audit involves five facets: leadership commitment, human resources, auditing work, customer service and continuous improvement. The investigation for the job satisfaction of the government auditors also includes five facets: working environment, competent leadership, interpersonal relationship, salary and welfare, and promotion evaluation. The influential factors of improving performance audit comprise four facets: personnel competence and organisational identification, policy conditions, policy resource input and target group support.

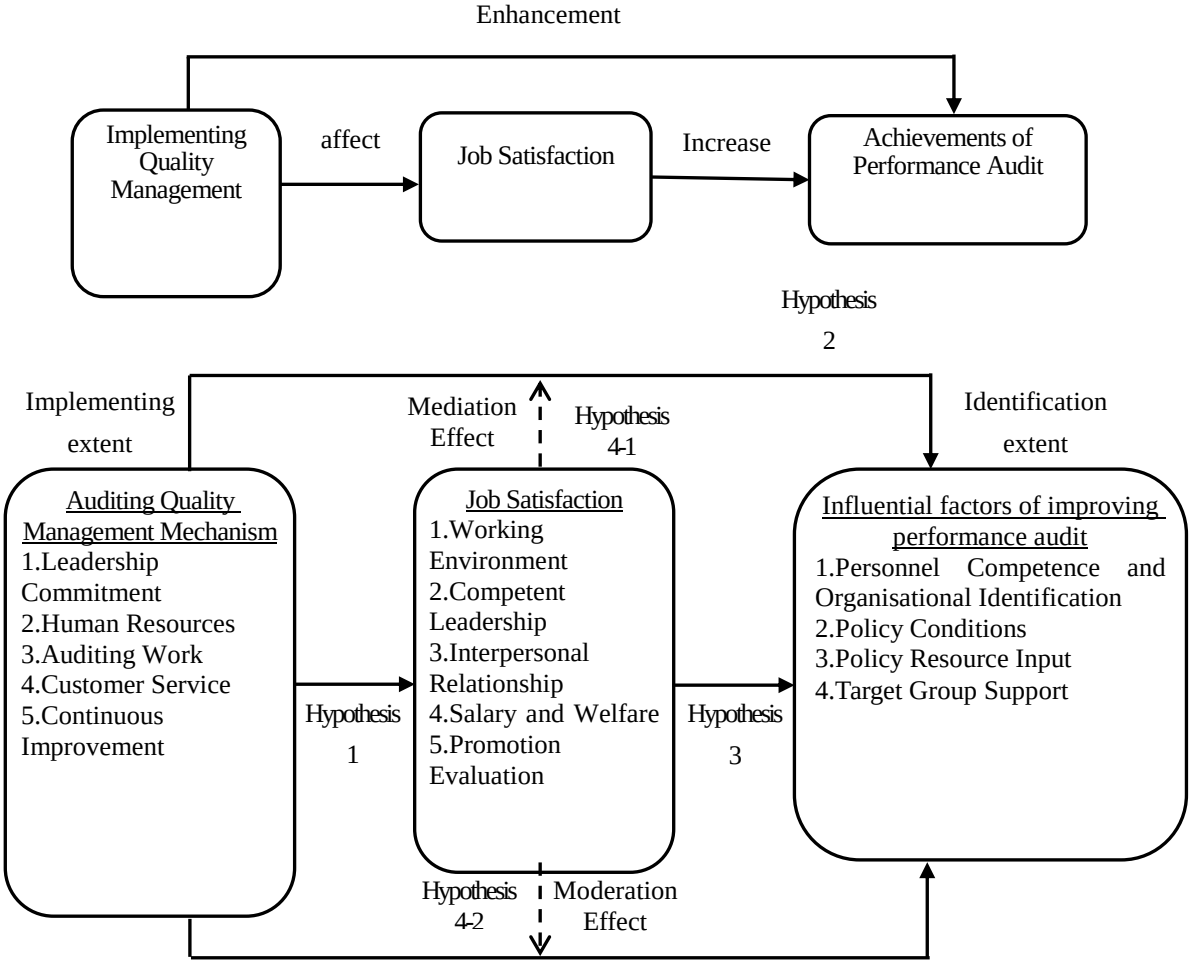


Figure 1. Research Framework

3.2 Questionnaire Objects

The government auditors serving in Nation Audit Office and its affiliated auditing offices by the end of March, 2014 are qualified to fill out the questionnaires. Those government auditors comprise four official ranks: senior, associate, junior and elementary. The government auditors with grades eleven above make up the senior rank, while those with grades seven to ten comprise the associate rank. The fourth to sixth grades compose the junior rank, whereas the first through third grades belong to the elementary rank.

The 613 questionnaires were sent out. The valid recovery copies are 535. Among them, 50 from the senior rank, 88 from the associate rank, 168 from the junior rank and 229 from the elementary rank. The whole valid recovery rate is 87.28%. The empirical results of the questionnaire survey are highly reliability. The conclusions of this study are unbiased.

3.3 Research Tool

The quality management of public audit includes organisation (auditing institution), people (auditor) and the auditing process (Karapetrovic and Willborn, 1998; Bowerman and Hawksworth, 1999; Brown et al., 2016). In order to strengthen the assessment function of government audit, improve quality of auditing work and enhance auditing efficiency Taiwanese government established "the quality management structure of auditing institutions" in 2012. The structure is established by comparing the practice operational model of auditing institutions between Taiwan and other countries and referring to "Guidelines on Audit Quality Management Systems" from Asian Organisation of Supreme Audit Institutions (ASOSAI) and "Achieving Audit Quality: Good Practices in Managing Quality within SAIs" from European Organisation of Supreme Audit Institutions (EUROSAI). The establishment of quality management structure is also based on "Auditing Quality Management System" from Office of the Auditor General of Canada.

The five essential factors of auditing quality management for auditing institutions are therefore, ensured: leadership, people, auditing work, customer and continuous improvement. By the competent leadership of top manager, the allocation and recruitment of human resource, training and capacity development of human resource, proper planning of auditing work, the feedback of interested party and internal review and self-assessment auditing institutions can then consistently develop high quality of auditing work, establish good reputation, satisfy the demand of interested party and increase self-value.

4. Research Result

4.1 Descriptive Statistics

In terms of gender the male respondents own 49.16% while female ones hold 50.84%. In the light of marital status the married respondents to 71.59% are higher than the single ones 28.41%. The age of most respondents is 30-49 taking over 70%. About 35.33% of the respondents are 30-39 years old while the respondents aged 40-49 are accounted to 39.44%. Regarding the educational level the respondents with master degree above hold 49.91% while those respondents with bachelor degree own 45.79%. Those respondents with mater and bachelor degree are the primary personnel to promote government auditing working.

By duty the respondents with elementary rank to 42.61% are the highest while the next to 31.59% is the junior rank. Relating to the length of service approximately half of respondents serve for 6-19 years. Among those respondents serving 6-10 years are accounted to 21.12% while ones serving 11-19 years occupy 29.35%. Over thirty percent of respondents in the basic level serve less than 5 years. The respondents serving less than 3 years hold 20.56% while those serving 3-5 years own 10.09%. Consequently, the directors should spend more time instructing the junior auditors. In terms of serving institutions the 64.11% respondents work in local auditing office while 35.89% ones serve in central auditing office.

4.2 Descriptive Statistical Analysis of Reliability and Research Variables

Table 1 is the reliability and descriptive statistical analysis of questionnaire factor facets. This study examines the correlation coefficient of total from item by item at first stage. The deletion criteria for item is the correlation coefficient less than 0.5. This study then examines whether Cronbach's α coefficient of item increases subsequent to the deletion. The survey questionnaire for three variables consists of 5, 5 and 4 factor facets respectively. The factor facets comprise 23, 17 and 14 questionary items separately. The correlation coefficient for those 54 questionary items to total is all over 0.5. The corresponding Cronbach's α coefficient fails to increase subsequent to deleting items. The questionary items appear the difference effect and good internal consistency. Therefore, there is no questionary item deleted.

Table 1. The reliability and descriptive statistical analysis of the questionnaires

Variables	Factor facets	Mean	S.D.	Max	Min	Reliability
Implementation of government auditing quality management mechanism	Leadership Commitment	4.98	0.998	7	2.00	0.923
	Human Resources	4.95	1.005	7	2.00	0.831
	Auditing Work	5.01	0.879	7	2.56	0.936
	Customer Services	5.15	0.891	7	1.33	0.836
	Continuous Improvement	5.10	1.007	7	1.33	0.932
Job satisfaction of government auditors	Working Environment	4.85	1.156	7	1.75	0.950
	Competent Leadership	4.94	1.193	7	1.00	0.945
	Interpersonal Relationship	5.28	1.036	7	2.00	0.896
	Salary & Welfare	4.82	1.152	7	1.00	0.955
	Promotion Evaluation	4.60	1.163	7	1.00	0.947
Identification of influential factors to improve performance audit	Personnel Competence and Organizational Identification	5.19	0.986	7	2.25	0.933
	Policy Conditions	4.81	1.066	7	1.33	0.911
	Policy Resource Input	3.83	1.313	7	1.00	0.903
	Target Group Support	4.73	0.962	7	1.60	0.876

Table 2 exhibits the descriptive statistical analysis for each questionary items of factor facet. The mean for each questionary items from 5, 5 and 4 factor facets are 4.75 ~ 5.28, 4.56 ~ 5.30 and 3.73 ~ 5.37 respectively. The estimated variance for each item from the factor facets are all statistically significant at the 1 per cent level ($F=4.332$; $p=0.008$, $F=25.113$; $p=0.000$ and $F=148.404$; $p=0.000$ separately).

Table 2. The descriptive statistical analysis of each questionary item

Implementation of government auditing quality management mechanism					Job satisfaction of government auditor					Identification of influential factors to improve performance audit				
Factor Facets	Item	Mean	S.D.	Sequence	Factor Facets	Item	Mean	S.D.	Sequence	Factor Facets	Item	Mean	S.D.	Sequence
Leadership Commitment	1	4.75	1.161	23	Working Environment	1	4.95	1.156	5	Personnel Competence & Organisational Identification	1	5.37	1.072	1
	2	5.04	1.164	12		2	4.81	1.259	10		2	5.18	1.055	3
	3	5.24	1.066	2		3	4.85	1.285	9		3	5.20	1.077	2
	4	5.01	1.126	15		4	4.79	1.255	13		4	4.99	1.118	4
	5	4.85	1.189	20		Sum	4.85	1.156	3		Sum	5.19	0.986	1
	Sum	4.98	0.998	4		5	5.06	1.274	3		5	4.98	1.117	5
Human Resources	6	4.82	1.149	21	Competent Leadership	6	5.00	1.325	4	Policy Conditions	6	4.60	1.202	10
	7	5.24	1.135	3		7	4.90	1.310	6		7	4.85	1.151	9
	8	4.78	1.205	22		8	4.80	1.240	12		Sum	4.81	1.066	2
	Sum	4.95	1.005	5		Sum	4.94	1.193	2		8	3.73	1.404	14
Auditing Work	9	5.02	1.112	14	Interpersonal Relationship	9	5.25	1.113	2	Policy Resource Input	9	3.93	1.347	13
	10	5.12	1.016	7		10	5.30	1.064	1		Sum	3.83	1.313	4
	11	5.05	1.001	10		Sum	5.28	1.036	1					
	12	4.86	1.128	19		11	4.87	1.175	8					
	13	4.90	1.097	18	Salary & Welfare	12	4.90	1.216	7		10	4.86	1.113	8
	14	4.93	1.254	16		13	4.81	1.235	11		11	4.56	1.110	11
	15	5.11	1.003	8		14	4.71	1.282	14	Target Group Support	12	4.87	1.175	7
	16	4.92	1.107	17		Sum	4.82	1.152	4		13	4.97	1.233	6
	17	5.21	0.993	4	Promotion Evaluation	15	4.64	1.240	15		14	4.37	1.241	12
	Sum	5.01	0.879	3		16	4.56	1.206	17		Sum	4.73	0.962	3
Factor Facets	Item	Mean	S.D.	Sequence	Factor Facets	Item	Mean	S.D.	Sequence	Factor Facets	Item	Mean	S.D.	Sequence
Customer Services	18	5.28	0.970	1		17	4.59	1.228	16					
	19	5.04	1.025	13		Sum	4.60	1.163	5					
	20	5.14	1.083	5										
	Sum	5.15	0.891	1										
Continuous Improvement	21	5.05	1.093	11										
	22	5.14	1.057	6										
	23	5.10	1.071	9										
	Sum	5.10	1.007	2										
Variance		4.332 (0.002)***			Variance		25.113 (0.000)***			Variance		148.404 (0.000)***		

Note: 1.7-point Likert scale is used for each questionary item. The value of each factor facet is the mean of its own questionary items.

2.The estimated mean of each questionary item and factor facet is significantly different from 4.0 at the 1 per cent level.

3.ANOVA is employed for the variance test of each questionary factor facet. *** : Denotes significance at the 1% level.

4.3 Hypothesis Test

Linear structural equation model is employed in this study. Firstly, confirmatory factor analysis (CFA) is utilised for each factor facet and affiliated questionary item. Linear structural relation model is then applied to develop linear structural model and verify each hypothesis, affected effect as well.

4.3.1 Goodness-Of-Fit Test

Table 3 presents the result of model test for goodness-of-fit. Overall, the ratio of Chi-square to degree of freedom ($\chi 2$/df) fails to reach the criterion. The baseline comparisons fit indices (NFI, IFI, NNFI, CFI) appear closely criterion. The parsimony-adjusted measurement fit indices (PNFI and PCFI) and the root mean square error of approximation (RMSEA) fit in with criterion. Therefore, the goodness-of-fit of model in this study falls in with the acceptable domain (Fornell and Larcker 1981; Bagozzi and Yi 1988; Browne and Cudeck 1993).

Table 3. The checklist for goodness-of-fit test of models

Test item	Standard value	Implementation of government auditing quality management mechanism	Job satisfaction of government auditor	Identification of influential factors to improve performance audit
χ^2/df	< 5 (Ideal value: < 3)	15.849	11.709	14.707
NFI	>0.9	0.680	0.877	0.837
IFI	>0.9	0.694	0.886	0.846
NNFI	>0.9	0.631	0.848	0.780
CFI	>0.9	0.693	0.886	0.845
PNFI	>0.5	0.566	0.659	0.590
PCFI	>0.5	0.577	0.666	0.596
RMSEA	>0.08	0.075	0.063	0.080

4.3.2 Test of Overall Model Fit

Table 4 shows the test results for overall model fit. All fit indices, but the ratio of Chi-square to degree of freedom (χ2/df) are close to criterion. The overall models employed in this study are good fit. Accordingly, the conclusion of this study is unbiased.

Table 4. The checklist for test of overall model fit

Test item	Standard value	Result	Status
χ^2/df	< 5 (Ideal value: < 3)	6.070	Acceptable
NFI	>0.9	0.937	Fitness
IFI	>0.9	0.947	Fitness
NNFI	>0.9	0.935	Fitness
CFI	>0.9	0.947	Fitness
PNFI	>0.5	0.762	Fitness
PCFI	>0.5	0.770	Fitness
RMR	<0.05	0.042	Fitness

4.3.3 Affected Effect and Correlation Detection

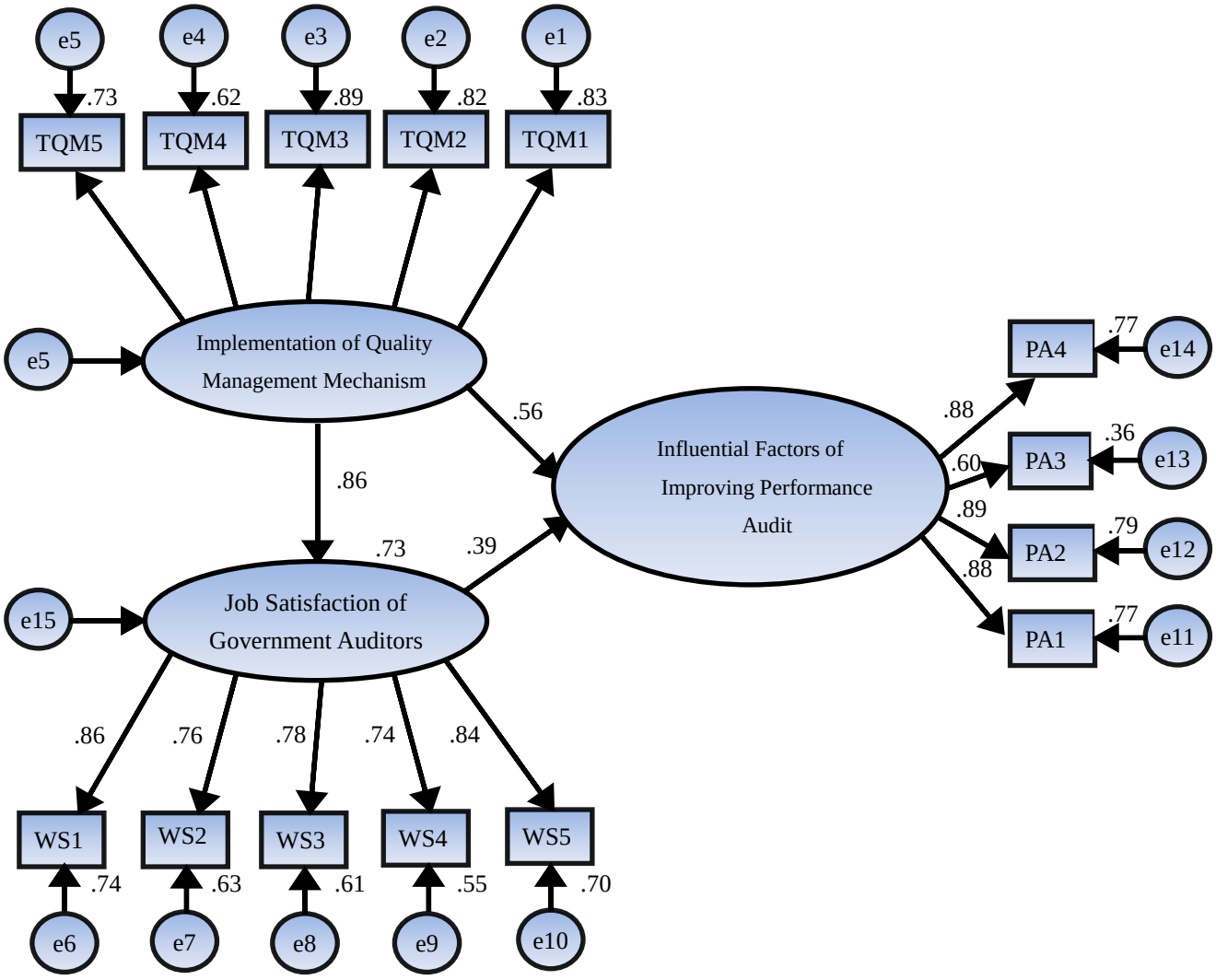
Among five factor facets from the implementation of government auditing quality management mechanism, the loading estimated value for auditing work is the highest, 0.943. The R-square value is 0.889. The explanatory power is high. Therefore, the auditing work plays a very important role in the implementation of government auditing quality management mechanism. The positive promotion of auditing work can greatly improve the quality management mechanism of government audit.

By contrast, the loading estimated value for customer services is the lowest, 0.784. That factor facet is unlikely the key factor for overall effect of quality management mechanism. However, in practice customer services remains attached weight. The loading estimated value for working environment is the highest, 0.858 amid five factor facets from the job satisfaction of government auditors. The value of R-square for working environment is 0.736. In addition the loading estimated value for promotion evaluation is 0.838. The more satisfaction of the government auditors the greater overall job satisfaction.

Amongst four factor facets from the identification of influential factors to improve performance audit, the loading estimated value for policy condition is the highest, 0.886. The value of R-square for policy condition is 0.785. The

loading estimated value for personnel competence & organisational identification and target group support are 0.878 and 0.877 separately. Accordingly, the auditors appear to acknowledge the influential factors of improving performance audit.

Figure 2 shows the correlation among the implementation of government auditing quality management mechanism, the job satisfaction of government auditors and the identification of influential factors to improve performance audit.



Standardised estimates

Chi-square=449.181 (P=.000) D.F.=74 $\chi 2$/df =6.070

GFI=.889 AGFI=.843 NFI=.937 CFI=.947

Figure 2. Overall Model Fit

The path coefficient between the implementation of government auditing quality management mechanism and job satisfaction of government auditor is 0.86. The t-value is significantly 22.059 at the 1 per cent level. The implementation of government auditing quality management mechanism is positively and significantly associated with job satisfaction of government auditor. The higher the implementation of government auditing quality management mechanism the more job satisfaction of government auditors (Rezaee, 1996; Karapetrovic and Willborn, 1998; Cheng et al., 2001; Wang et al., 2007; Brown et al., 2016). Accordingly, there is support for H1.

The path coefficient between the implementation of government auditing quality management mechanism and the

identification of influential factors to improve performance audit is 0.56. The t-value is significantly 9.919 at the 1 per cent level. The implementation of government auditing quality management mechanism is positively and statistically related with the identification of influential factors to improve performance audit. Therefore, the higher the implementation of government auditing quality management mechanism the more performance audit (Karapetrovic and Willborn, 1998; Bowerman and Hawksworth, 1999; Cheng et al., 2001; Wang et al., 2007; Jan and Wu, 2010; Brown et al., 2016; Woodside et al., 2016). The H2 is supported.

The path coefficient between the job satisfaction of government auditor and the identification of influential factors to improve performance audit is 0.39. The t-value is significantly 6.984 at the 1 per cent level. The job satisfaction of government auditor is positively and conventionally associated with the identification of identification factors to improve performance audit. The more job satisfaction of government auditors the higher the identification of influential factors to improve performance (Baron, 1983; Cheng et al., 2001; Koustelios, 2001; Wang et al., 2007; Jan and Wu, 2010; Woodside et al., 2016; Sharma et al., 2016). Accordingly, the results support H3.

4.3.4 Test of Mediation Effect

The four testing conditions by Baron and Kenny (1986) are employed in this study to investigate whether the job satisfaction of government auditor plays an important mediation role between the implementation of government auditing quality management mechanism and the identification of influential factors to improve performance audit.

The testing condition 1: The figure 3 displays the results. The path coefficient between the implementation of government auditing quality management mechanism and the identification of influential factors to improve performance audit is 0.895. The t-value is 24.916. Accordingly, there is a significant association between the implementation of government auditing quality management mechanism and the identification of influential factors to improve performance audit. The testing condition 1 is supported.

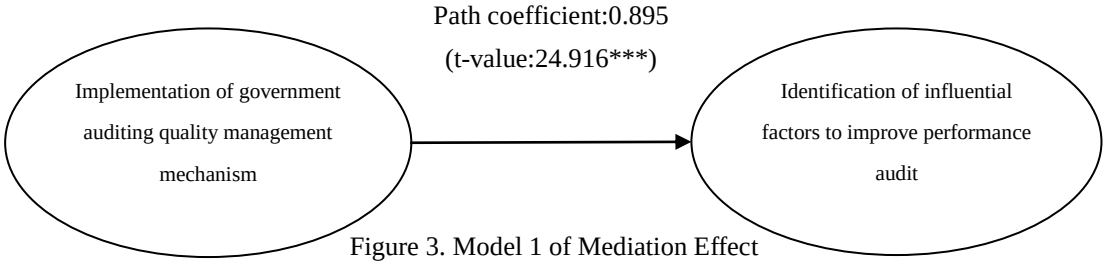


Figure 3. Model 1 of Mediation Effect

The testing condition 2: The figure 4 shows the results. The path coefficient between the implementation of government auditing quality management mechanism and job satisfaction of government auditor is 0.854. The t-value is 21.542. Accordingly, the implementation of government auditing quality management mechanism is statistically related with the job satisfaction of government auditor. The testing condition 2 is supported.

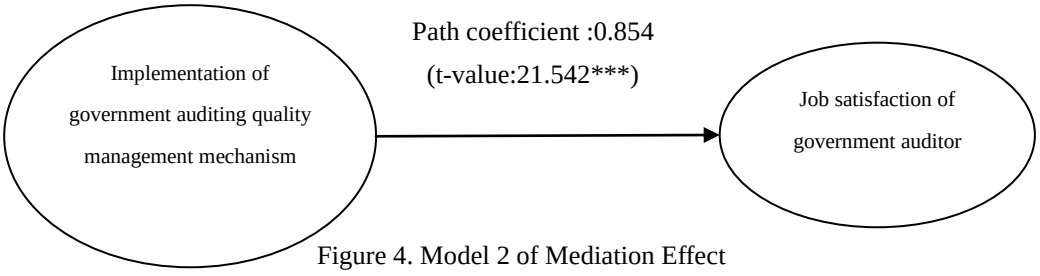


Figure 4. Model 2 of Mediation Effect

The testing condition 3: Both the implementation of government auditing quality management mechanism and job satisfaction of government auditor are set as the predictive variable. The identification of influential factors to improve performance audit is analysed by the structural equation model. The figure 5 presents the results. The path coefficient between the job satisfaction of government auditor and the identification of influential factors to improve performance audit is 0.392. The t-value is 6.984. Accordingly, there is a significantly relation between the job satisfaction of government auditor and the identification of influential factors to improve performance audit. The results support the testing condition 3.

The testing condition 4: Figure 5 shows the path coefficient for the implementation of government auditing quality management mechanism alone predicting the identification of influential factors to improve performance audit is 0.560 (t-value=9.919). That path coefficient is less than the one between those two combined 0.895 (t-value=24.916). Accordingly, the job satisfaction of government auditor indeed plays the mediation role (Note 7).

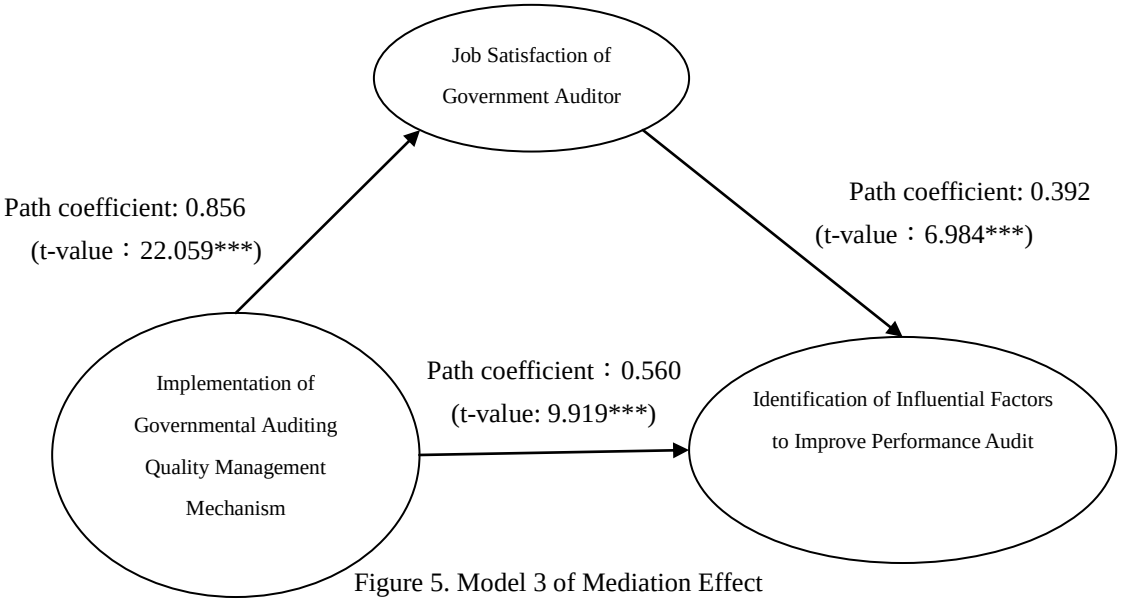


Figure 5. Model 3 of Mediation Effect

Table 5 shows the specific results of each effect for overall models. The mediation effect (indirect effect) for the job satisfaction of government auditor refers to the implementation of government auditing quality management mechanism multiplies the two direct effects (0.335=0.56*0.856). Z value of Sobel test for that mediation effect is significantly 157.662 at the 1 per cent level. Accordingly, there is support for H4-1.

Table 5. The analysis of affected effect among variables

Dependent Variable	Independent Variable	Direct Effect	Indirect effect	Total effect
Identification of influential factors to improve performance audit	Implementation of governmental auditing quality management mechanism	0.560*** (t=9.919)	0.335(0.56×0.856) (z=157.662)***	0.895*** (t=24.916)
	Job satisfaction of government auditor	0.392*** (t=6.984)		0.392*** (t=6.984)
Job satisfaction of government auditor	Implementation of government auditing quality management mechanism	0.856*** (t=22.059)		0.856*** (t=22.059)

4.3.5 Test of Moderation Effect

Based on the two-level test by Jöreskog and Sörbom (1996), this study employs the K-means cluster analysis to divide all factor facets of the job satisfaction of government auditor into two groups at the first step. There are 283 and 252 observations for high and low packet group respectively. The packet group effectiveness is examined by the discriminatory analysis and t-test of independent sample. The results reveal that the accuracy rate for low and high

packet group is 98.8 per cent and 97.9 per cent separately. The t-test of independent sample for each group demonstrate statistically significance. Accordingly, the group effectiveness for the recovery questionaries is well.

Table 6 presents the results of goodness-of-fit test for the sample model. Overall the goodness-of-fit for three sample models is acceptable. In addition, this study sets up two models so as to execute the path coefficient identity test. One is the benchmark model assuming that there is no identity between groups. Other is the identity model (moderation model). Chi-square value, freedom degree and path efficient for two models are compared.

Table 6. The checklists for goodness-of-fit test of the sample model

Statistical test items	Standard Value	Whole sample model	High packet group sample model	Low packet group sample model
Chi square degree of freedom(χ^2/df)	< 5	6.019	4.050*	4.399*
Goodness of fit indices(GFI)	> 0.9	0.889**	0.861**	0.845**
Adjusted Goodness-of-Fit index(AGFI)	> 0.9	0.844**	0.806**	0.783
Normed Fit Index(NFI)	> 0.9	0.937*	0.867**	0.805**
Comparative-Fit Index (CFI)	> 0.9	0.947*	0.896**	0.841**
Root mean square residual (RMR)	< 0.05	0.047*	0.50*	0.069

Note: *:denotes according standard; **:denotes approaching standard

Table 7 is the results for goodness-of-fit test of single-sample model. The results demonstrates that the Chi-square difference between benchmark model and identity model is 0.678. However, the Chi-square value for a freedom degree difference between benchmark model and identity model is 3.84(α=0.05). The Chi-square difference between them is insignificant. There appears to be no moderation effect for the job satisfaction of government auditor. Accordingly, there is no support for H4-2.

Table 7. The checklists for goodness-of-fit test of the single-sample model

Model	Chi-square value	Freedom degree	Chi-square difference with benchmark model
Benchmark Model	599.189	148	
Identity Model (Moderation Model)	599.867	149	0.678

5. Conclusion

The objective of this study was to explore relation between the implementation of government auditing quality management mechanism and government auditors' job satisfaction for the identification of influential factors to improve performance audit. The quality management mechanism promoted by governmental auditing institutions is examined whether the higher job satisfaction of government auditors can result in the more identification of influential factors to improve performance audit. Meanwhile, the job satisfaction of government auditor with mediation effect or moderation effect is acknowledged. A total of 613 questionnaires were sent and 535 valid responses were collected. The return rate is 87.28%. The mean of each questionary item for the implementation of government auditing quality management mechanism is 4.75 ~ 5.28. The respondents appear to positively implement the quality management mechanism and the improve the quality of government audit (Rezaee, 1996; Bowerman and Hawksworth, 1999; Cheng et al., 2001; Wang et al., 2007; Jan and Wu, 2010; Brown et al., 2016).

The average value of each questionary item for the job satisfaction of government auditor is 4.56 ~ 5.30. The participant auditors are satisfied with the interpersonal relationships such as the mutual concerns and supports among colleagues, mutual cooperation sense in workplace and the competent leadership (Cheng et al., 2001; Koustelios, 2001; Wang et al., 2007; Sharma et al., 2016). The mean of each questionary item for the influential factors to

improve performance audit is between 3.73 ~ 5.37. The participant auditors tend to see personnel competence & organisational identification as the significantly influential factors to improve performance audit (Brazelay, 1996; Christopher and Hilkka, 1997; Jan and Wu, 2010; Woodside et al., 2016). Moreover, goodness-of-fit for all models in this study is acceptable. The t-value of the latent variables for the relations between the implementation of government auditing quality management mechanism, the job satisfaction of government auditor and the identification of influential factors to improve audit are all significant. The path coefficients for the external variables and latent variables reach significance and obtain certain explanatory power. Thus, each questionary item indeed affect the factor facets.

Based on Baron and Kenny (1986), this study finds that there are significantly associations between the implementation of government auditing quality management mechanism, the job satisfaction of government auditor and identification of influential factors to improve performance audit. The path coefficient estimated value for the implementation of quality management mechanism alone predicting identification of influential factors to improve performance audit is less than that between them. Accordingly, the job satisfaction of government auditor indeed plays the mediation role for them. Employing the two-level test by Jöreskog and Sörbom (1996), this study divides all factor facets of the government auditors' job satisfaction into two groups. The examinations for the packet group effectiveness by the discriminatory analysis and t-test of independent sample are well. Overall the goodness-of-fit for the sample models is acceptable. The Chi-square difference between benchmark model and identity model is 0.678.

However, the Chi-square value for a freedom degree difference between benchmark model and identity model is 3.84(α=0.05). The Chi-square difference between them is insignificant. There appears to be no moderation effect for the job satisfaction of government auditor.

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Notes

Note 1. Those organisations include The International Organisation of Supreme Audit Institution (INTOSAI), The Institute of Internal Auditors (IIA), Asian Organisation of Supreme Audit Institutions (ASOSAI) and European Organisation of Supreme Audit Institutions (EUROSAI).

Note 2. e.g. strategy management and risk management.

Note 3. e.g. performance indicator, self-assessment, supervision and verification of local audit.

Note 4. e.g. Berry, Harwood and Katz, 1987; Brazelay, 1996; Christopher and Hilkka, 1997; Karapetrovic and Willborn, 1998; Bowerman and Hawksworth, 1999; Jan and Wu, 2010.

Note 5. e.g. Hoppock, 1935; Seashore and Taber, 1975; Baron, 1983; Rezaee, 1996; Karapetrovic and Willborn, 1998; Bowerman and Hawksworth, 1999; Cheng et al., 2001; Koustelios, 2001; Wu and Wang, 2004; Wang et al., 2007; Jan and Wu, 2010.

Note 6. Minnesota satisfaction questionnaire 20-item short form MSQ (Weiss et al., 1967)

Note 7. The path coefficient estimated value (0.560, t=9919) remains significance so that the effect for the job satisfaction of government auditor is the partly mediation.