

## The Effect of External Auditor Industry Specialization on Audit Quality: Audit Risk Assessment as a Mediator Variable

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### Abstract:

The aim of the study is to investigate the effects of the auditors' role in industry specialization on audit quality as well as Audit Risk Assessment. In order to achieve this, the study used a quantitative analysis, specifically a confirmatory factor analysis (CFA) to test the validity of the assumed relationships among these variables as well as structural equation modeling (SEM) through (AMOS). The study obtained several results, most important of which indicated that Auditor Industry Specialization has a positive correlation with audit quality. In addition, the results showed that audit risk Assessment had played an important role as mediating variable in resulting a higher indirect positive impact of auditor industry specialization on audit quality. This research contributes to the limited prior studies in this area of research using quantitative experiment. This research provide a significant contribution especially in developing countries where confidentiality and Arab culture restrict the undertaking of experimental studies in the accounting and auditing literature.

**Keywords:** Auditor industry Specialization, Audit quality, Audit risk assessment.

### المخلص:

هدفت الدراسة إلى تحديد الأثر المباشر للتخصص القطاعي للمراجع الخارجي على جودة المراجعة، والأثر غير المباشر في وجود متغير تقدير مخاطر المراجعة كمتغير وسيط، وجمعت بيانات الدراسة باستخدام الاستبانة التي وزعت على عينة من المراجعين الخارجيين الليبيين الحاصلين على رخصة مراجع خارجي من نقابة المراجعين الخارجيين الليبية (LAAA). ولتحقيق ذلك واختبار صحة العلاقات المفترضة استخدمت الدراسة التحليل الكمي، وبالتحديد اختبار التحليل العاملي التوكيدي (CFA) ونمذجة المعادلات الهيكلية (SEM) باستخدام (AMOS). وتوصلت الدراسة إلى العديد من النتائج، ولعل أهمها التي أشارت إلى إن هناك تأثير إيجابي مباشر للتخصص القطاعي للمراجع الخارجي على جودة المراجعة، بالإضافة إلى ذلك أظهرت النتائج أن تقدير مخاطر المراجعة قد لعب دوراً هاماً كمتغير وسيط في تحقيق تأثير إيجابي غير مباشر للتخصص القطاعي للمراجع الخارجي على جودة المراجعة.



### ***1. Introduction.***

Audit firm industry specialization is becoming more important in the literature (Cahan et al. 2008). Willenborg (2002) indicates that audit firms benefit from specialization in (2) ways. First, benefits results due to enhanced audit effectiveness. Second, enhanced audit efficiency lead to benefits. Prior studies investigate the link between Industry Specialization of external auditor and audit quality, and find a positive relationship (e.g., Balsam et al. 2003), (Reichelt and Wang 2010) and (Lowensohn et al. 2007). A reason for this positive relationship is the existence of industry expertise for Industry Specialization of external auditor. To improve the evidence of the effect of experience of Industry Specialization of external auditor on performance, Moroney and Carey (2011) investigate the relative influence of industry- and task-based experience on auditor performance. They find that non-specialist auditors benefit from industry-based experience. As they use only mid-tier firms, their results are not generalizable to big four firms, but it does seem that big for firms have advantages from their industry experience and, on top of that also benefits from specialization. Moroney and Carey (2011) state that, measures for industry-based experience have to be more defined in future research to get more powerful results. The current study extends the literature by investigating the longitudinal effect of Industry Specialization of external auditor on audit quality through audit risk assessment. When the audit quality not only increases in the same year, but also in the upcoming year, knowledge about their clients increases, and therefore auditors can provide better audit quality. In the long run, due to increased knowledge about the industry, errors in the audit will be eliminated, resulting in an increased audit quality. It is also expected that investigation of this research area will function as a vehicle for comparative studies. In the effect of industry specialization, audit risk Assessment and audit quality.

### ***2. Problem of the study and Theoretical background.***

The common concept of specialization has been approached in several studies, which is, in general, someone who works in a certain field continuously, in a continuous manner, and gains experience more than others in the same industry (e.g., Dunn et al., 2000; Stanley and DeZoort, 2007; Gul et al., 2009; Robkob et al., 2011; Sun and Liu, 2011).



For example, Solomon et al. (1999) defined industry specialists as auditors whose training and experience are largely concentrated in a particular industry and they spend most of their time auditing clients in the one industry setting. Another studies defined industry specialization as an increasing function of market share, which may include a share of the industry total assets (e.g., Mayhew and Wilkins, 2003; Dunn and Mayhew, 2004; Francis et al., 2005). Cahan et al. (2008) expected that the industry's attractiveness for specialization will be directly related to the amount of industry-specific knowledge requirements needed to complete the audit, and that these requirements are likely to vary widely across industries. Developing an industry specialization is costly since it requires significant investment of resources. From a cost-benefit perspective, such an investment (cost) is justified because audit firms making those investments are expected to provide high quality audits, attract more clients and, ultimately, make profit on their investments (Habib, 2011: 118). The main direction in the literature confirms the importance of industry specialization in maximizing auditor performance and improving audit quality. Prior research explored the importance of industry specialization in audit firms (e.g., Hogan and Jeter, 1999; Mayhew and Wilkins 2003; Dunn and Mayhew 2004) and found that market leaders continued to increase their market share, suggesting that there are returns to investing in specialization. Another study by Low (2004) has important implications for audit effectiveness and efficiency as auditors' knowledge of the client's industry was found to affect not only the auditors' risk assessments, but also the nature, quality, and risk-sensitivity of their planning decisions. Findings of more recent studies are consistent with the theory that auditors specialize in various industries to achieve product differentiation and provide higher quality audits (e.g., Moroney and Carey, 2007; Gul et al., 2009). Dowling and Moroney (2008) stated that industry-specialist auditors outperform non-specialists because they develop "industry-specific skills and expertise over and above normal auditor expertise" (Craswell et al., 1995).

The main objective of audit firms is improving the audit quality to achieve superiority in the audit market. Notwithstanding, all audits are assumed to meet minimum legal and professional standards of quality (Reichelt and Wang, 2010). The effectiveness of the auditor in reducing information asymmetries and the associated risks and detecting misstatements is a function of audit quality (Fernando et al., 2010). There are many



quality attributes (i.e., market share, audit firm size, industry specialization, auditor tenure, and type of auditor opinion) which are examined in prior literature (e.g., Craswell et al., 1995; Francis, 2004; Fernando et al., 2010) to identify the effect of those attributes on the audit quality. Fernando et al. (2010) results evidenced the importance of the last four attributes of audit quality. In addition, a study by Francis (2004) found evidence of voluntary differential audit quality along a number of dimensions such as firm size and industry specialization. It is possible that auditor specialization creates both a differentiated product of higher quality and production efficiencies (Zerni, 2012: 320). In general, auditing is viewed as a differentiated service with substantial variation observed in audit fees (Zerni, 2012). An important differentiation strategy, as described by Casterella et al. (2004), to be applied in audit firms is specialization strategy. By specializing in auditing certain industries, auditors may be able to differentiate their product from those of non-specialized auditors. The association between industry specialization and audit quality was not much discussed in the academic research until 2001. However, there is substantial volume of academic literature that assesses the effect of audit firm industry specialization on audit quality at present (Habib, 2011: 118). Some studies investigated the relationship between the auditor industry market share (as a proxy for industry specialization) and audit quality (e.g., Gramling et al., 2001; Carcello and Nagy, 2002; Cadman and Stein, 2007). These studies provided mixed results. Cadman and Stein (2007) found little evidence to support the conjecture that high market share auditors (specialists) provide higher quality audits within the Big 4. Their results do not support the use of market share as a proxy for industry specialization.

Moreover, most studies that examined the relation between audit quality and industry specialization had proxies for audit quality such as bid-ask spreads (e.g., Schauer, 2002; Almutairi et al., 2009). The bid-ask spread provides a direct measure of the reduction in information asymmetry associated with higher audit quality (Schauer, 2002). These studies provided evidence of positive association between audit quality and industry specialization. Moreover, prior studies reported less abnormal accruals for clients of national industry specialists (e.g., Balsam et al., 2003; Krishnan, 2003), clients audited by national industry specialists disclosed information of higher quality (e.g., Dunn and Mayhew, 2004), and national industry specialists are more likely to issue a going-concern



audit opinion (as a proxy for audit quality) (e.g., Lim and Tan, 2008). These studies provided evidence that auditors' national industry expertise is associated with better audit quality. Reichelt and Wang (2010) extended this line of research and examined the impact of auditors' national and city-specific industry expertise on audit quality. Their results provided consistent evidence that audit quality is higher when the auditor is both a national and city-specific industry specialist.

Also, more recent analysis builds on prior studies arguing that auditor industry specialization is positively related to audit quality (e.g., Lowensohn et al., 2007; Robkob et al., 2011). Robkob et al. (2011) provided recent evidence from Thailand to support the positive relation between industry specialization and audit quality. They investigated the association between the components of audit specialization (audit particular capability, audit specific knowledge, and audit especial experience) and audit quality. Their results indicated that the greater degree of audit specialization is more likely to achieve higher audit quality. In addition, Popova (2013) supported that audit quality is affected by prior client-specific experience. Overall, the results of most studies on auditor specialization suggested that industry specialist auditors deliver higher audit quality than do non-specialists and that this difference in quality is recognized by the audit market (Zerni, 2012).

In summary, some studies evidenced the positive relation between audit quality and earnings quality (e.g., Francis, 2004; Albring et al., 2004). Other studies have proxied for audit quality by a combination of FRQ measures, on the presumption that if auditors provide a high quality audit then it should be reflected in financial statements which, too, will be of high quality as measured by the FRQs (Habib, 2011: 118). In addition, several studies documented an association between measures of higher quality auditors (such as industry expertise) and higher quality of financial reporting (e.g., Krishnan, 2003; Balsam et al., 2003). This association is based on the argument that high-quality auditors are more likely to detect risk assessment by management than low-quality auditors (Gul, 2009).

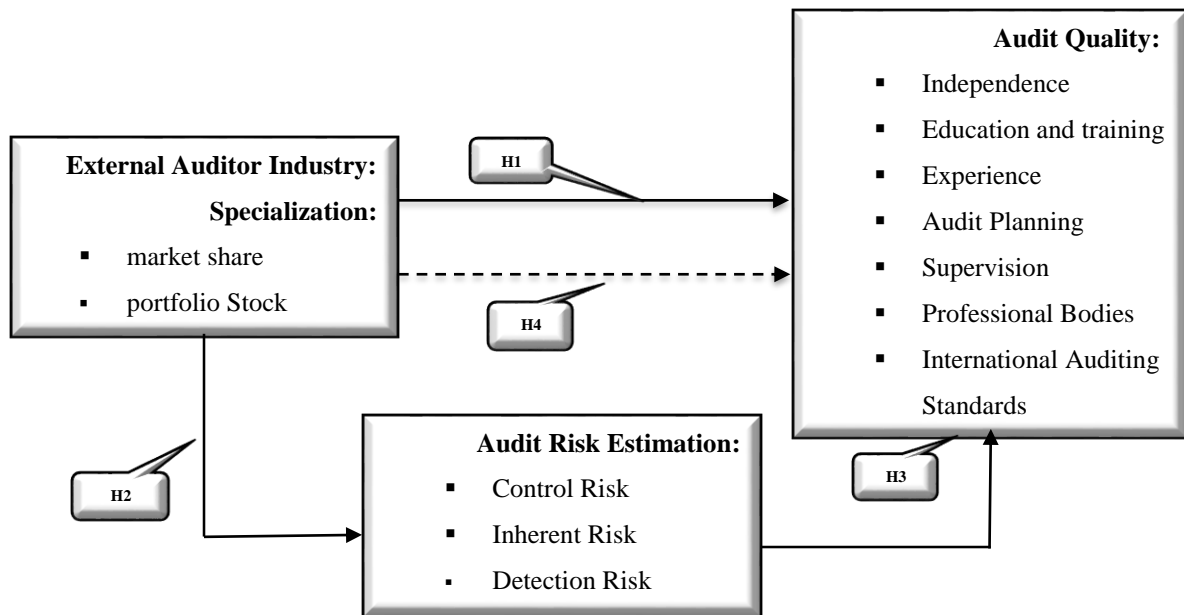


Figure 1. Research Framework.

### 3. The objective of the study.

This study aimed to examine how effect external auditor industry specialization on audit quality directly and indirectly through audit risk assessment in Libya. Thus, the study attempt to achieve the following specific objectives:

- 2.1. To examine the impact of external auditor industry specialization on audit quality.
- 2.2. To investigate the indirect impact of external auditor industry specialization on audit quality through the mediator variable of audit risk assessment.

### 4. Hypotheses.

In order to achieve the objectives designed for this study, the following research hypotheses are stated based on the revelation in the review of literature concerning External Auditor Industry Specialization and audit quality

**Hypotheses 4.1:** *There is significant positive correlation between external auditor industry specialization and audit quality.*

**Hypotheses 4.2:** *There is significant positive correlation between external auditor industry specialization and audit risk assessment.*

**Hypotheses 4.3:** *There is significant positive correlation between audit risk assessment and audit quality.*

**Hypotheses 4.4:** *There is significant positive correlation between external auditor industry specialization and audit quality through audit risk assessment.*

### 5. Research methodology.



### **5.1 Data Collection.**

In Libya, as a developing country, both mail and electronic questionnaires are more difficult to achieve than personally administered questionnaire so, this study chose the personally administered questionnaire. The advantages of personal delivery include (a) the respondent can be helped to overcome difficulties with the questions; (b) good response rate can be reasonably ensured and (c) personal involvement of the researcher is useful to explain the complex questionnaires. The main disadvantage of personally administered questionnaire could be related to either time and geographical location or scope and the extent to which this method can be used (Walliman, 2001; Sekaran, 2003, p. 236). These difficulties and others were minimized in the current study by collecting data from Libyan external auditor who works in Tripoli and Benghazi wherein 85% of Libyan audit offices are located including the biggest ones. This process turned these disadvantages to advantages. This view is supported by Sekaran (2003, p. 236) who considers that personally administered questionnaire is the best method when the data are collected from organizations located close to one another-Based on the foregoing arguments, the data of this study were collected by the personally administered questionnaire. This questionnaire contains closed-ended questions requesting the respondents to choose among a number of alternatives given by the researcher (Sekaran, 2003, p. 239). The closed-ended questions were chosen for the current study, because this model is convenient for collecting data and easy to analyses, and respondents in the kind can respond more easily and quickly than other types of questions (Sekaran, 2003, p. 239).

### **5.2 Population study.**

The population of this study is comprised of Libyan Association of Accountants and Auditors (LAAA); LAAA is the regulatory body of the accounting profession in Libya which was established by the Libyan government Law No. 116/1973. Paragraph 23 of Law No. 116 of 1973 was limited to those practicing the profession is a member of LAAA, as well as paragraph 24 which restricts membership to the citizens of Libya only. Registration as a LAAA's member requires at least a bachelor's degree in accounting and five years' experience of accounting work in audit office after graduation. These education and experience conditions provide a guarantee on the ability of LAAA's members to evaluate audit quality. The total current LAAA numbers was not available at

the time when the empirical study was being carried out. Therefore, the researcher had to rely on latest list of the LAAA members. According to LAAA the total number of members in February 2020 was 1,996 The directory lists the names of LAAA members according to their audit offices, and shows also addresses and telephone of audit offices.

### **5.3 Sampling Design.**

Several issues must be considered when the sample size is determined, which include: (1) the response rate that would determine the final number of usable cases. (2) the statistical requirements and (3) manageability of the administration of the survey and cost (Sekaran 2003, p. 295), indicated some researcher's guidance in identifying the sample size: (1) sample size larger than 30 and less than 500 are appropriate and (2) in multivariate study, it should be at least ten times as large as the variables' number. The target number is 320 of usable questionnaires, which is a sufficient for the statistical requirements (64questions  $\times 5 = 320$  questionnaire). It is logical to find various reasons why some of LAAA's members are unable to answer the questionnaire such as too busy or tight schedule; some returned questionnaires are unsuitable for analysis, and some LAAA's members could not be reached either due to wrong address or office moved elsewhere. Furthermore, some LAAA's members had stopped practicing the profession or had changed their audit office and they had not yet notified the LAAA of those events. For above reasons and also as a result to Libya situation before and during the field study, 500 LAAA's member is the target number of questionnaires for distribution. However, only 394 questionnaires were +returned, which accounted for nearly 79%. For those incomplete returned questionnaires, they were not used in this study as they missed important information. Therefore, the useable questionnaires used for analysis in this study were 356.

### **6. Statistical analysis used in this study**

In the previous sections, the sample size and method of data collection for the current study are explained but not the analysis. This is the purpose behind the current subsection tries. The data were analyzed by using the software of Structural Equation Modeling (Amos) version 23.0. This subsection includes the following points:

#### **6.1 Confirmatory Factor Analysis.**

In order to test the validity constructs and the research hypotheses the Structural Equation Modeling (AMOS) model-fitting program is used. The model fit is evaluated by using



four indices of the model goodness-of-fit: (1) the comparative fit index (CFI) (2) the chi-square statistics McDonald and Marsh (1990); (3) (RMSEA) between (0.08) to (0.10) indicates a mediocre fit Browne and Cudeck (1993) and would not employ a model a RMSEA greater than 0.1 ( $>0.1$ ) (MacCallum et al., 1996). (4) The minimum value of the discrepancy between the observed data and the hypothesised model divided by degrees of freedom (CMIN/DF) or normed chi-square. Marsh and Hocevar (1985).

### 6.1.2 Construct Validity.

According to Hair, Black, Babin, Anderson and Tatham (2006) the employment of factor loading composite reliability (CR) and average variance extracted (AVE) to determine the convergent validity if it equals to or greater than 0.5 ( $\geq 0.5$ ) and the composite reliability equals to or greater than 0.7 ( $\geq 0.7$ ) if were recommended by Hair et al. (2006). Also, (AVE) reading values should be greater.

## 7. Data analysis and result discussions

### 7.1. Confirmatory Factor Analysis for Variables and Measurement Scales.

#### 7.1.1 External Auditor Industry Specialization (CFA).

The outcome of the goodness-of-fit of the end revision of the first factor of External Auditor Industry Specialization variable displayed that normed chi-square (CMIN/DF) was (3.034) which did not exceed (5), the (CFI) was (0.982) which was higher than (0.90), and the RMSEA index was (0.076) which was less than (0.080). Figure (2) shows the adequacy of the final revised of the External Auditor Industry Specialization model.

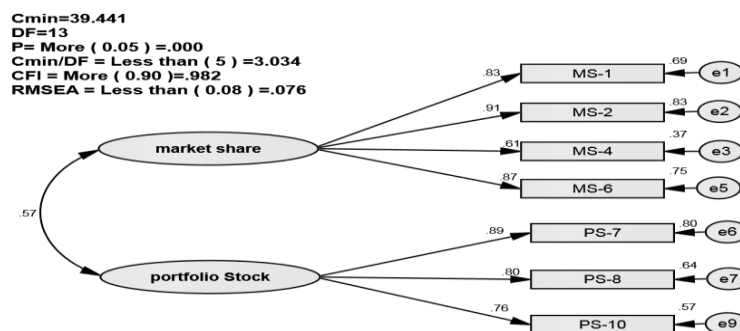


Figure 2. External Auditor Industry Specialization model after amendment

#### 7.1.1.1. Construct Validity.

In the present study, loading for the parameters factor ranged from 0.61 to 0.91, with all parameters were above 0.5 ( $\geq 0.5$ ). In addition, the AVE reading was 0.66 for the first

dimension (market share), While the second dimension (portfolio Stock) was 0.67 where the values were greater than 0.5 ( $\geq 0.5$ ). Consequently, all results fulfilled the AVE, and the parameters factor discriminant validity of the model. In general, the measurement model of the External Auditor Industry Specialization model was fit and fulfilled the construct as depicted in Table (1).

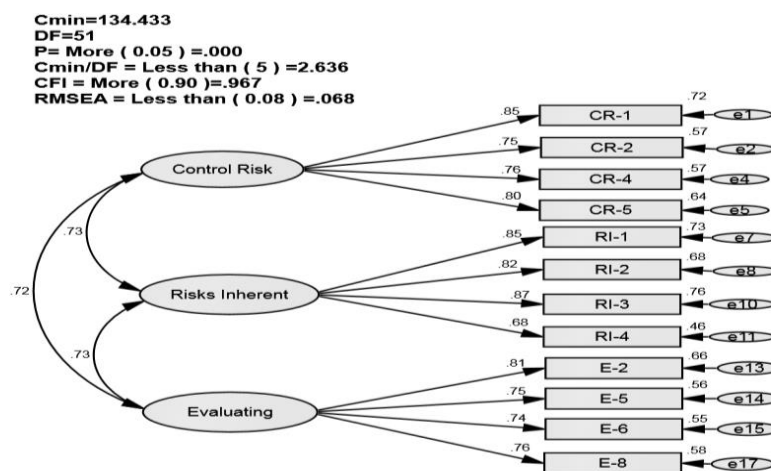
**Table 1. Construct Validity of the External Auditor Industry Specialization model.**

Dimension	Items	Estimate	S. E.	C. R.	P	Loading	R	AVE
market share	MS-1	0.966	0.046	20.995	0.000	0.83	0.69	0.66
	MS-2	1.000	-	-	-	0.91	0.83	-
	MS-4	0.687	0.053	12.867	0.000	0.61	0.37	-
	MS-6	0.921	0.041	22.406	0.000	0.87	0.75	-
portfolio Stock	PS-7	1.000	-	-	0.000	0.89	0.80	0.67
	PS-8	0.917	0.054	16.883	0.000	0.80	0.64	-
	PS-10	0.873	0.055	15.841	0.000	0.76	0.57	-

*S.E.*: Standard Error, *C.R.*: Critical Ratio, *P*: Probability, *SMC*: Squared Multiple Correlations. *AVE*: Average Variance Extracted.

### 7.1.2. Audit Risk Estimation (CFA).

The results of the goodness-of-fit of the second factor of audit risk estimation variable model displayed that normed chi-square (CMIN/DF) was (2.636) which did not exceed (5), the (CFI) was (0.967) which was higher than (0.90), and the RMSEA index was (0.068) which was less than (0.080). Figure (3) shows the adequacy of the final revised of the risk assessment model.



**Figure3. Risk Assessment model after amendment.**

### 7.1.2.1. Construct Validity.

In this study, the lodging for the parameters factor ranged from 0.74 to 0.87, with all parameters was greater and above 0.5 ( $\geq 0.5$ ). In addition, the AVE readings were (0.62, 0.65 and 0.58). Consequently, all results fulfilled the AVE, and the parameters factor ranged of the model. In general, the measurement model of the Supervisor's model was fit and fulfilled the construct as depicted in Table (2).

**Table2. Construct Validity of the Risk Assessment model.**

Dimension	Items	Estimate	S. E.	C. R.	P	Loading	R	AVE
<b>Control Risk</b>	CR-1	1.0000	-	-	-	0.85	0.72	<b>0.62</b>
	CR-2	.8812	.0554	15.914	0.000	0.75	0.57	-
	CR-4	.8728	.0543	16.058	0.000	0.76	0.57	-
	CR-5	.9577	.0557	17.206	0.000	0.80	0.64	-
<b>Inherent Risk</b>	IR-1	1.0000	-	-	-	0.85	0.73	<b>0.65</b>
	IR-2	.8834	.0470	18.806	0.000	0.82	0.68	-
	IR-3	.9947	.0487	20.439	0.000	0.87	0.76	-
	IR-4	.7829	.0553	14.147	0.000	0.68	0.46	-
<b>Detection Risk</b>	DR-2	.9924	.0661	15.013	0.000	0.81	0.66	-
	DR-5	.9519	.0690	13.794	0.000	0.75	0.56	<b>0.58</b>
	DR-6	.9600	.0701	13.693	0.000	0.74	0.55	-
	DR-8	1.0000	-	-	-	0.76	0.58	-

*S.E.*: Standard Error, *C.R.*: Critical Ratio, *P*: Probability, *SMC*: Squared Multiple Correlations. *AVE*: Average Variance.

### 7.1.3. Audit Quality (CFA).

The outcome of the goodness-of-fit of the end revision of the audit quality model displayed that normed chi- square (CMIN/DF) was (2.975) which did not exceed (5), the (CFI) was (0.906) which was higher than (0.90), and the RMSEA index was (0.075) which was less than (0.080). Figure (4) shows the adequacy of the final revised of the Audit Quality model.

#### 7.1.3.1 Construct Validity.

In the present study, the lodging for the parameters factor ranged from (0.66 to 0.90); with all parameters were above 0.5 ( $\geq 0.5$ ). Furthermore, the AVE readings were (0.67, 0.61, 0.62, 0.64, 0.55, 0.66) where the value was greater than (0.5) ( $\geq 0.5$ ). Universally, the measurement model of the Audit Quality model was fit and met the criteria as shown in Table (3) and Figure (4).

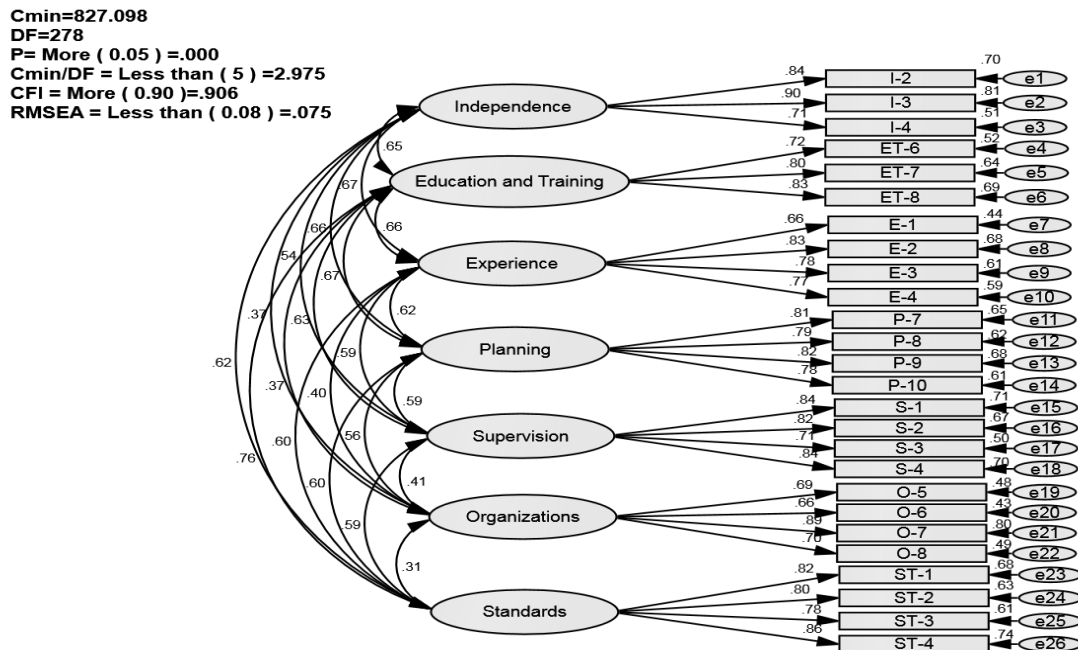


Figure 4. Audit Quality model after amendment.

Dimension	Items	Estimate	S. E.	C. R.	P	Loading	R	AVE
Independence	I-2	0.9081	0.0469	19.358	0.000	0.84	0.70	0.67
	I-3	1.0000	-	-	-	0.90	0.81	-
	I-4	0.7796	0.0504	15.475	0.000	0.71	0.51	-
Education and Training	ET-6	0.8548	0.0593	14.420	0.000	0.72	0.52	0.61
	ET-7	0.9856	0.0608	16.202	0.000	0.80	0.64	-
	ET-8	1.0000	-	-	-	0.83	0.69	-
Experience	E-1	0.8668	0.0699	12.396	0.000	0.66	0.44	0.62
	E-2	0.9844	0.0621	15.851	0.000	0.83	0.68	-
	E-3	1.0000	-	-	-	0.78	0.61	-
	E-4	0.9889	0.0677	14.616	0.000	0.77	0.59	-
Auditing Planning	AP-7	0.9980	0.0583	17.122	0.000	0.81	0.65	0.64
	AP-8	0.9304	0.0564	16.510	0.000	0.79	0.62	-
	AP-9	1.0000	-	-	-	0.82	0.68	-
	AP-10	0.9414	0.0573	16.432	0.000	0.78	0.61	-
Supervision	S-1	1.0000	-	-	-	0.84	0.71	0.64
	S-2	0.9079	0.0505	17.971	0.000	0.82	0.67	-
	S-3	0.8587	0.0585	14.682	0.000	0.71	0.50	-
	S-4	0.9780	0.0528	18.520	0.000	0.84	0.70	-
Professional Bodies	PB-5	0.7608	0.0550	13.829	0.000	0.69	0.48	0.55
	PB-6	0.7251	0.0556	13.036	0.000	0.66	0.43	-
	PB-7	1.0000	-	-	-	0.89	0.80	-
	PB-8	0.7656	0.0546	14.025	0.000	0.70	0.49	-
International Auditing Standards	IAS-1	0.9601	0.0502	18.904	0.000	0.82	0.68	0.66
	IAS-2	0.9433	0.0528	17.890	0.000	0.80	0.63	-
	IAS-3	0.8817	0.0509	17.376	0.000	0.78	0.61	-
	IAS-4	1.0000	-	-	-	0.86	0.74	-

Table3. Construct Validity of the Audit Quality model.

### 8. Testing the Theoretically Hypothesized Research Model Using Integral Structural Equation Modeling (SEM).

After certifying the observed relationships between the underlying variables and the factors as formerly reviewed, the main hypotheses of the research model were tested as follows:

#### 8.1. (H1): There is significant positive correlation between external auditor industry specialization and audit quality.

The research hypothesis confirmed the positive and direct effect of external auditor industry specialization on audit quality. Based on the research model illustrated in Figure (5), Table (4) showing the output of Amos, this research hypothesis was of statistically significant level since the (C. R) was (3.8014), which was greater than (1.964), and the value of the significance level (0.000) was lower than (0.05). In addition, the path coefficient was (0.38), a decisive direction, which confirms that the industry specialization used in external auditor to an increase in the development of the audit quality.

**Table 4. Results of the levels of correlations between the variables**

Latent Variable	S. R. W	Latent Variable	Estimate	S. E	C. R	P-Value	S. R. W
External Auditor Industry Specialization	---	Audit Quality	0.3742	0.098	3.8014	0.000	0.38
External Auditor Industry Specialization	---	Audit Risk Estimation	0.8197	0.079	10.313	0.000	0.81
Audit Risk Estimation	---	Audit Quality	0.607	0.059	6.386	0.000	0.62

R.S.W: Standardized Regression Weights, C.R: Critical Ratio, S.E: Standard Error, E: Estimate.

#### 8.2. (H2): There is significant positive correlation between external auditor industry specialization and risk assessment.

The second research hypothesis also confirmed a presence of a decisive and direct effect of external auditor industry specialization revision on the risk assessment. As depicted in Figure (5) of the research model and the output of Amos in Table (4), the impact was statistically significant as the (C. R) value was (10.313), being greater than (1.964), and the significance level (0.000) was less than (0.05). Furthermore, the path coefficient was (0.81), suggesting that the impact was in a decisive direction and confirming that the

industry specialization used in external auditor an increase in the Risk Assessment. Thus, (66%) of the risk assessment is attributed or explained by external auditor industry specialization, which is considered as a major influence of the underlying variables since it is higher than (25%), (cohen,1988).

**8.3. (H3): There is significant positive correlation between risk assessment and audit quality.**

Concerning this, the results of the third research hypothesis showed the presence of a decisive and direct effect of the risk assessment on audit quality. This is evidenced as seen in the research model displayed in Figure (5) and Table (4). The impact stated in this research hypothesis was statistically significant because the (C. R) value was (6.386), which was greater than (1.964), and the significance level (0.000) is less than (0.05). Moreover, the path coefficient was (0.62), which indicates that there is a positive direction, highlighting the evidence that the increased attention to the risk assessment to the development of audit quality. The results also show that the overall impact on the of the audit quality was estimated (0.91), which means that (91%) of the audit quality was due to both external auditor industry specialization and risk assessment.

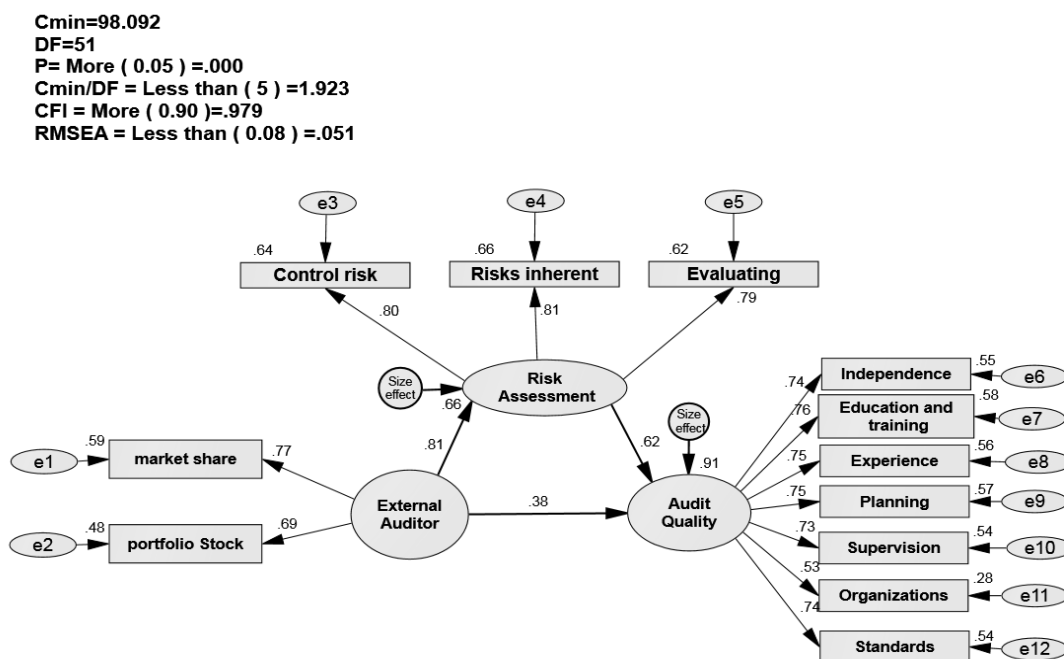


Figure 5. Structural Model.



**8.4. (H4): There is significant positive correlation between external auditor industry specialization and audit quality through risk assessment.**

The study's hypothesis confirmed the positive and indirect effect of external auditor industry specialization on the audit quality through risk assessment. According to the outcome in table (5), the value of this indirect impact (0.50) was the resultant rate of multiplying the path coefficient of the relationship between external auditor industry specialization and the risk assessment (0.81) and the path coefficient of the relationship between risk assessment and the audit quality (0.62). The overall impact was (0.88), which a result of adding the direct and indirect impact between external auditor industry specialization and the audit quality (0.50+0.38=0.88).

**Table 5. Results of the levels of effect between the factors of the model**

Independent	Mediation	Dependent	Indirec Effect	Total Effect	Indirec Effect Test		
					Result	Sobel Test	
					<u>S.T.S</u>	<u>O.T.P</u>	<u>T.T.P</u>
External Auditor	Audit Risk Estimation	Audit Quality	0.50	0.88	7.338	0.000	0.000

*T.T.P* : Two-tailed probability

*O.T.P* : One-tailed probability

*S.T.S* : Sobel

test statistics

**9. Conclusion and Discussion.**

The study aimed at investigating the effect of external auditor industry specialization on audit quality and audit risk estimation. Based on the results of the study, external auditor industry specialization had a positive impact on audit quality. Specifically, this positive impact was estimated at (0.38) with positive direction. This indicates that the external auditor industry specialization factor contributes to increasing audit quality. Such result corroborates results reported in previous related research (e.g., Hogan and Jeter, 1999; Mayhew and Wilkins 2003; Dunn and Mayhew 2004, e.g., Moroney and Carey, 2007; Gul et al., 2009, e.g., Lowensohn et al., 2007; Robkob et al., 2011). Robkob et al; 2011 and Craswell et al., 1995). Moreover, in measuring the relationship between the external auditor industry specialization factor and the audit risk estimation, it was estimated around is (0.81), thus suggesting that it was a positive correlation. The results also show that there is value direct impact between the two variables (0.66). Furthermore, the impact



of the audit risk estimation factor on the factor of audit quality was (0.62), which is positive as well. These results support those reported in some previous studies (Reichert and Wang, 2010,). It was found that overall effect on audit quality was 93%, which implies that 91% of audit quality could be attributed to good external auditor industry specialization and the audit risk estimation. In this study, external auditor industry specialization positively (0.50) and indirectly through the audit risk estimation impact. This particular result agrees with result obtained by (e.g., Francis, 2004; Albring et al., 2004). Based on the results, it is important for external auditor industry specialization to focus developing industry specialization relevant to development or improvement of audit quality.

#### ***10. Recommendations and Future Studies.***

The reported results should be considered in light of the normal limitations that apply the study. Although this study focused effect of external auditor industry specialization on audit quality and audit risk estimation. It is possible that the results could differ if additional audit firms were used in another study. The current study between both specialists inside the same audit firm and. Future research could extend this study to different industries and between audit firms in Libya or any country. The comparison between industry specialist audit firm and non-specialist firm may provide additional insights and support the current findings that will contribute in generalizing the results.

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