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## Article

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## The effectiveness of internal audit in Jamaican commercial banks

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**Abstract:** Banks play a vital role in every economy as they hold the savings of the public, provide a means of payment for goods and services, and finance the development of businesses. The financial sector experienced a meltdown, which some critics argued was the result of inadequate regulatory oversight from regulatory bodies and the auditing function. This highlights the ever-increasing attention which should be placed on internal control systems and the critical role being played by the internal audit function in ensuring that weaknesses are minimized and that exposures to risks are adequately identified and managed. Banks in developing countries and especially those in Jamaica might find it difficult to absorb such failures due to severe resource constraints. As a result, this study seeks to investigate the factors that influence the effectiveness of the internal audit function in Jamaican commercial banks. The study found that the quality of audit investigation, organizational independence, professional proficiencies and management support have a significant impact on internal audit effectiveness. It is imperative that the various stakeholders and policy makers understand the important role internal audit plays in the financial viability and financial health of any financial institution.

**Keywords:** Commercial banks, internal audit, internal controls, Jamaica.

**JEL codes:** M41

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## 1. Introduction

Banks play a critical role in every economy as they hold the savings of the public, provide a means of payment for goods and services, and finance the development of business and trade (Siddiqui & Podder, 2002). The importance of banks is further supported by Latibeaudiere (2002) who posits that a well-functioning and efficient financial system is vital for achieving robust economic performance and that integrity and confidence are the fundamental tenets on which the operations of the financial system rests.

The rapid technological advancements, dynamic and challenging business environment, allegations of corruption and fraudulent financial reporting, and the global financial crisis have caused some financial institutions to experience financial woes and closures. Some critics argue that the global financial crisis is due mainly to inadequate regulatory oversight from the regulatory bodies and the audit function. In a single case at the Canadian Federal Government Sponsorship Program, as much as \$50 million of the \$338 million allocated to the program went missing (Neu *et al.*, 2013). Other local examples in Jamaica are the Trafigura Beheer incident, Manat, Phelps and Phillips case and the closure of Century National Bank. These cases highlight the ever-increasing attention which should be placed on internal control systems and the critical role being played by the internal audit (IA) function in ensuring that weaknesses are minimized and that exposures to risks are adequately identified and managed (Karagiorgos *et al.*, 2009).

The internal audit department is critical to the process of ensuring efficiency and effectiveness in the financial sector (Latibeaudiere, 2002). Thus, the role of an internal auditor of a bank is very crucial (Siddiqui & Podder, 2002). The internal auditor's role has been revolutionized from performing traditional internal audit functions to focusing on value adding services in organizations such as reporting irregularities, identifying business risks and advising management on the internal control environment (Cashell & Aldhizer, 2002; Leung *et al.*, 2004; Mautz, 1964).

The aftermath of the global financial crisis and the vigorous regulatory activity have most financial institutions, especially banks, grappling to strike a balance among risk management, maximization of profits, and achieving regulatory compliance. While at the country level, Jamaica, an island in the English-speaking Caribbean has a heavy debt to GDP ratio of over 113% (Williams and Jones, 2010). The country has a fragile economy in which most of its foreign exchange is earned from tourism, remittances and the declining bauxite/alumina industry. The Jamaican economy faces serious problems with high interest rates, growing internal debt, increased foreign competition, a downward sliding exchange rate, a huge trade deficit and large-scale unemployment. As a result, the economic and

social measures in Jamaica could be improved when compared to other countries in the English-speaking Caribbean and the wider developing countries/emerging economies.

However, within the western hemisphere, the United States of America (USA) is considered a reference point or baseline for social and economic measures. As a result, the comparative analysis below specifically explores the differences between Jamaica, a developing country in the English-speaking Caribbean and the United States of America, a developed country. In terms of social measure, Jamaica was ranked 85 out of 175 countries based on its corruption index, while the United States of America was ranked 17<sup>th</sup> in the same report (Ugaz, 2014). Other key measures reported in 2012 as distilled by the Department of Economic and Social Affairs (2014) report are:

<u>Measure</u>	<u>Jamaica</u>	<u>United States</u>
Corruption index	85/175	17/175
GDP per capita (current US\$)	\$5,343.1	\$51,163.3
Exchange rates (national currency per US\$)	92.56	---
Balance of payments (million US\$)	-\$1,905	-\$440,423
Consumer price index (2000=100)	319	133
Unemployment (% of labour force)	13.9%	8.1%

Based on the social and economic measures above, it is evident that Jamaica needs to improve in five areas. These are corruption, GDP per capita, exchange rate, consumer price index and its unemployment rate in relation to the USA. These improvements can be achieved through an effective internal audit function. The internal audit function can play an important role in building solutions that help organizations achieve the right balance among risk management, maximization of profits and achieving regulatory compliance, by conducting internal control environment assessments, and recommending process improvements. This claim is supported in prior studies which have shown a positive relationship between internal audit resources and internal audit effectiveness (Ramachandran and Subramanian, 2012). Other studies have highlighted the various benefits that can be gained through the implementation of international financial reporting standards. These benefits include the production of higher quality financial statements and reduced costs of capital (Grabinski *et al.*, 2014). These positive gains by firms can lead to growth and development of nations.

However, there is very few academic studies on the effectiveness of the internal audit function (Cohen & Sayag, 2010), with relatively little research in this domain in Jamaica. However, such studies are important for banks in developed and developing countries and especially those in Jamaica who might find it difficult to

absorb such failures due to severe resource constraints (Chevers, 2014). It is expected that the findings of this study will better equip bank managers to make more informed and better decisions. These decisions can create the opportunity for banks to not only to survive but to thrive. This can increase the ability of banks to offer loans and finance developmental projects, which can lead to economic growth and development, and nation building.

As a result, this study seeks to investigate the factors that influence the effectiveness of the internal audit function in Jamaican commercial banks. Prior studies discovered that professional proficiency, organizational independence, quality of audit work and support from top management were determinants of internal audit effectiveness (Al-Twajry *et al.*, 2003; Chambers *et al.*, 1988; Cohen & Sayag, 2010; Courtemanche, 1986; Fernandez & Rainey, 2006; Glazer & Jaenike, 1980). These determinants were confirmed by internal audit experts in Jamaica. As a result, in this study these four determinants were used to assess the effectiveness of the internal audit function in Jamaica. It is considered important that the various stakeholders and policy makers understand the important role the internal audit plays in the financial viability and financial health of any financial institution.

The remainder of the paper is organized as follows: The next section reviews the relevant literature, this is followed by the details regarding the research method, and this is followed by the findings and discussion and finally the conclusion.

## 2. Literature review

Today's financial institutions are faced with a dynamic and challenging environment in which they must address the needs of all stakeholders by remaining competitive, while responding to the demands of regulatory bodies, technological advancement, corporate governance concerns, and expanded product and service offerings. These developments have caused some financial institutions to experience financial woes, with Jamaica being no exception. The Jamaican commercial banking sector has experienced significant contraction over the last two decades, in response to the financial meltdown of the 1990's. During the period December 1990 to June 2014 there has been a decline in the number of commercial banks from thirteen to seven.

In responding to the financial crisis some critics argue that it was the result of inadequate regulatory oversight from the regulatory bodies (Bernanke, 2012; Olson & Wessel, 2015). They further posited that this inadequate oversight contributed to the poor corporate governance structure within financial institutions. Globally, the

collapse of companies such as Enron and WorldCom due to fraudulent financial reporting and most recently, the global financial crisis of 2007, have sparked considerable interest in assessing the effectiveness of internal controls, internal audit and audit committees (Karagiorgos *et al.*, 2009). This has led many firms to strike a balance among risk management, maximization of profits and achieving regulatory compliance. It is widely accepted that the internal audit function plays an important role in building solutions that help organizations achieve the right balance by conducting internal control environment assessments, and recommending process improvements for enterprise risk management.

Against this background, in an effort to strengthen the supervisory and regulatory framework for deposit taking institutions and responding to numerous banks failures, the Bank of Jamaica, the central bank of Jamaica, issued in July 2008, the standard of best practice for effective corporate governance of deposit-taking entities (including commercial banks). This stipulated that all commercial banks put in place an adequate internal control system. Internal control systems and as such, the internal auditor (IA) has a critical role to play in ensuring that weaknesses are minimized and that exposures to risks are adequately identified and managed. There is reference to mandatory adoption of international standards on accounting quality by some firms in an effort to minimize fraudulent acts and behaviour (Ahmed *et al.*, 2013), which by extension can increase the quality of financial reporting (Dehaan *et al.*, 2013). It is also believed that having a sound internal audit function within the banks was one of such control mechanism (Lament, 2013).

It is important to note that the auditing profession has witnessed substantial and rapid change since the 1990's. This is as a result of the accelerating growth in world economies and deepening financial crisis. According to Porter *et al.* (2005), present-day auditing has developed into new processes that build on a business risk perspective of their clients. They stated that since the early 1990s, the audit profession began to adopt increased responsibility to detect and report fraud and to assess, and report more explicitly, doubts about an auditee's ability to continue in conformance with society's and regulators' increasing concern about corporate governance matters.

The roles and functions of internal auditors and by extension the audit committee have evolved from an assurance and compliance function to a value added and forward looking one. Traditionally, the internal audit function was seen as transaction based; that is, it was developed to protect the company's assets, monitor performance against adherence to policies and procedures and to ensure that the controls were working effectively. Cashell and Aldhizer (2002) stated that internal auditors have seen their role revolutionized from performing traditional internal

audit functions to focusing on adding value services to the organization, such as reporting on irregularities, identifying business risks and advising management on the internal control environment.

This position is endorsed by Cosserat (2004) who stated that currently, internal auditors are expected not only to enhance the credibility of the financial statement, but also to provide value-added services. Similarly, Leung *et al.* (2004) claimed that the role of internal auditors has moved from mere conformance to a more convergence role (p. 23). In addition it is evident that the paradigm of independent auditing has shifted over the years. It is believed that these trends will continue in the future.

Internal Audit is considered a key pillar in the corporate governance framework and is very essential, given its independent role in assessing organizations' internal control framework. In June 1999, the Institute of Internal Auditors (IIA) offered a definition of the internal audit function as "an independent, objective assurance and consulting activity designed to add value and improve an organization's operations". In essence, it seeks to assist organizations to accomplish their objectives by bringing a systematic, disciplined approach to evaluating and improving the effectiveness of risk management, control and governance processes. As a result, it is important that the Internal Audit Department be placed at a sufficiently senior level in the organization (Hedley & Ben-Chorin, 2011), and internal auditors be given a high level of independence in reporting their findings (Fiolleau *et al.*, 2013).

From as early as the late 1980's researchers began to explore the role of internal audit in the banking sector. In a study sponsored by the Institute of Auditing, aimed at evaluating the effectiveness of internal audit departments by Albrecht *et al.* (1988), where they identified fifteen (15) criteria that were used to assess internal audit effectiveness by thirteen (13) private organizations. They concluded that among other things, management support for the internal auditing team, the fit between the auditing work and the goals set by managers and the qualifications of the internal auditor were the main drivers that determined internal audit effectiveness.

In another early study, Celal (1989) examined the function of internal audit in the banks of Turkey and concluded that the importance of internal audit in the banking sector is increased by the usage of computer and the international extension of banks. They went further to make the point that the size of the internal audit team was in direct proportion to the size of the bank and highlights the growing importance of internal auditing in business success. Furthermore, Bou-Raad (2000) argued that the strength of an IA department must be assessed with respect to the

level of independence it enjoys from management and from operating responsibilities. Chambers *et al.* (1988) differentiate between organizational independence, based on organizational support and individual factors. They argue that organizational independence is very crucial to the effectiveness on internal auditors, as it protects the internal auditor from pressure or intimidation, and increases the objectivity of the auditing work.

In a study looking at both organizational and individual factors, Nassir *et al.* (2001) found that interpersonal skills, internal auditor's commitment, audit performance and integrity, internal competencies, internal auditor's knowledge on company's business operation and industry, internal auditor's independence, support from the audit committee and Board of Directors, and the audit department efficiency were important attributes of a quality internal audit function.

In a more recent study, Ussahawanitchakit and Intakhan (2011) stated that audit effectiveness is the outcome of the internal auditors' activities, duties, professional practices and responsibilities through a high commitment with audit standards, goals, objectives, policies and procedures. Internal audit plays a key role in monitoring a company's risk profile and identifying areas to improve risk management. Also, Ramachandran and Subramanian (2012) examined the effectiveness of the internal audit function in Tanzanian commercial banks, adopting the Arena and Azzone (2009) model. The results of their study concluded that there is a positive relationship between internal audit resources and competencies and internal audit effectiveness in Tanzanian commercial banks. This suggests that an increase in the level of internal audit resources will also result in an increase in the level of internal audit effectiveness in these banks.

Similarly, Dhamankar and Khandewale (2003) examined the effectiveness of Internal Audits, given the numerous corporate governance failures in the United States of America and other parts of the world. The study found that internal audit is an important constituent of good corporate governance and effective internal auditing would be a strong tool in the hands of the management.

In terms of banking irregularities, Augustine *et al.* (2013) examined the internal control system and quality of audit work in the Nigerian Banking Sector, and posited that the main cause of banking fraud is the lack of an effective internal control system. They concluded that the management of every bank should create and establish a standard internal control system, strong enough to stand against the wiles of fraud to promote continuity of operations, ensure the liquidity, solvency and going concern of the bank, as well as to facilitate quality audit work within the bank.



In addition, Hedley and Ben-Chorin (2011) claimed that internal auditing and monitoring activities help uncover fraud, because it is an important function in highlighting potential organizational weaknesses before they become costly or public crises. They went on further to state that an effective audit function typically reports to top management and have direct communication with the audit committee of the board of directors, because an unbiased perspective is important in an audit function. A major issue such as senior managers' willingness to disclose financial information can be enhanced with good governance structure and effective audit function (Damak-Ayadi & Klibi, 2015).

In another study Coram *et al.* (2008) examined a population of 324 Australian and New Zealand organizations and concluded that those with an internal audit function are more likely than those without such a function to detect and self-report fraud through misappropriation of assets. Given, those finding, it is clear that an effective internal audit unit helps to keep the organization in check and could lead to improve organizational performance. Despite numerous studies being conducted on internal audit effectiveness, there is the call for further research into this domain. Badara and Saidin (2013), suggest that more research should be conducted on internal audit effectiveness both in the public and private sectors.

Similar studies have been conducted on the effectiveness of internal audit in various countries, but no such research has been conducted in the Jamaican or the English-speaking Caribbean context. Given the importance of internal audit in the corporate governance structure, it is imperative that the various stakeholders and policy makers understand the important role internal audit plays in the financial viability and financial health of Jamaican financial institutions in the English-speaking Caribbean and the wider developing countries/emerging economies contexts.

Emerging economies are countries that have some characteristics of developed countries, but do not meet the standard to be classified as a developed country. The five largest emerging economies are Brazil, Russia, India, China and South Africa, commonly called 'BRICS'. They collectively hold an estimated \$4 trillion in foreign reserves and represent one-third of the world's six billion population (Marquand, 2011). The five countries have a combined nominal GDP of US\$16 trillion, which comprise 20% of the gross world product. Table 1 provides further details regarding various social and economic measures between Jamaica and the 'BRICS' countries.

**Table 1. Social and economic measures between Jamaica and the ‘BRICS’ countries for year 2014**

Measure	Jamaica	Brazil	Russia	India	China	South Africa
Corruption	85/175	69/175	136/175	85/175	100/175	67/175
GDP per capita (current US\$)	\$5,343.1	\$11,346.8	\$14,177.7	\$1,516.3	\$6,069.7	\$7,336.2
Exchange rate (national currency per US\$)	92.56	2.05	30.37	54.78	6.29	8.50
Balance of payment (million US\$)	-\$1,905	-\$54,246	\$72,016	-\$91,471	\$193,139	-\$20,016
Consumer price index (2000=100)	319	214	---	217	133	198
Unemployment (% of labour force)	13.9%	5.5%	5.5%	---	2.8%	25.1%

(Source: Department of Economic and Social Affairs (2014) and Ugaz (2014))

Again, just like the comparison with the USA, Jamaica needs to improve its performance in about four measures. These are GDP per capita, exchange rate, consumer price index and its unemployment rate in relation to the ‘BRICS’ countries. However, it is important to note that China’s corruption index is the lowest among the six countries, and India’s GDP per capita and balance of payment are the lowest.

In looking closer in the English-speaking Caribbean of which Jamaica is a member, a similar comparison was done between Jamaica and five other member countries. The English-speaking Caribbean refers to members of the Caribbean Community and Common Market (CARICOM) whose first language is English (Duggan & Virtue, 2004). The comparison produce a similar result in which Jamaica is low in all six measures, as shown in Table 2. The measures are corruption, GDP per capita, exchange rate, balance of payment, consumer price index and unemployment. Hence, Jamaica needs to improve its performance in all these social and economic measures.

Jamaica’s social and economic measures are low when compared to the United States of America, or the ‘BRICS’ countries or five English-speaking Caribbean countries. This is coupled with the fact that Jamaica’s commercial banking industry accounts for over 75% of the deposits held by the country’s deposit-taking institutions and these comprise only seven banks (Harriott *et al.*, 2010). The larger banks have consistently secured 75% of the revenue generated in the industry. In fact, the two largest banks – National Commercial Bank and Bank of Nova Scotia – collectively operate 85 of the 130 branches (65.4%) throughout the island and

account for over 75% of the industry's revenue (Harriott *et al.*, 2010). Hence, the smaller banks exert relatively little competitive pressure on the larger banks. Against this background, it is important for Jamaica to understand the determinants of effective internal audit, with the hope that this knowledge can increase the likelihood of improving the country's social and economic measures.

**Table 2. Social and economic measures between Jamaica and the ESC  
for year 2014**

Measure	Jamaica	Antigua & Barbuda	Bahamas	Barbados	St. Vincent & the Grenadines	Trinidad & Tobago
Corruption	85/175	---	24/175	17/175	29/175	85/175
GDP per capita (current US\$)	\$5,343.1	\$13,207.2	\$21,623.9	\$16,004.3	\$6,348.8	\$17,365.2
Exchange rate (national currency per US\$)	92.56	2.70	1.00	2.00	2.70	6.43
Balance of payment (million US\$)	-\$1,905	-\$79	-\$1,500	-\$218*	-\$216	\$2,899
Consumer price index (2000=100)	319	131	129	170	154	206
Unemployment (% of labour force)	13.9%	---	---	11.6%	---	5.9*

(Source: Department of Economic and Social Affairs (2014) and Ugaz (2014))

Note \* = 2010 figure

It is widely felt that commercial banks play a critical role in every economy as they hold the savings of the public, provide a means of payment for goods and services, and finance the development of business and trade (Siddiqui & Podder, 2002). As a result, this empirical study assessed the effectiveness of internal audit in Jamaican commercial banks. The research questions seek to evaluate the following.

1. What is the relationship between quality of audit work and internal audit effectiveness in Jamaican Commercial Banks?
2. What is the relationship between organizational independence and internal audit effectiveness in Jamaican Commercial Banks?
3. What is the relationship between professional proficiency and internal audit effectiveness in Jamaican Commercial Banks?
4. What is the relationship between top management support and internal audit effectiveness in Jamaican Commercial Banks?

Hence the four hypotheses emerging from these research questions are:

- H1: There is a positive relationship between quality of audit work and internal audit effectiveness.
- H2: There is a positive relationship between organizational independence and internal audit effectiveness.
- H3: There is a positive relationship between professional proficiency of internal auditors and internal audit effectiveness.
- H4: There is a positive relationship between management support and internal audit effectiveness.

These hypotheses are similar to those used in Cohen and Sayag (2010) study, which evaluated the determinants of internal audit effectiveness in Israeli organizations. It is hoped that this study will assist in unearthing meaningful information regarding the factors with the greatest influence on internal audit effectiveness, as well as stimulate other researchers to conduct further research in this domain.

### **3. Methodology**

This was a quantitative study in which the unit of analysis was the firm. The study sought to determine the extent to which internal audit is considered effective in Jamaican commercial banks. The study is considered relevant given the relative importance placed on the role and function of internal auditors and the mandate for commercial banks to have a permanent internal audit structure.

A questionnaire was used to collect data from the selected respondents using closed-ended questions. According to Bird (2009) questionnaires are considered stable, consistent, free of variations, uniform, and demonstrate high levels of reliability and validity when used in surveys. A pilot study was conducted to ensure that the research instrument was well understood. This pilot study was conducted at JMMB Merchant Bank in Jamaica. A sample of twenty five (25) persons was selected from various departments to answer the questionnaire. This institution was selected because it had similar characteristics to the commercial banking sector. Upon completion of the pre-test the questions were deemed to be straightforward and simple in language to prevent ambiguity in responses. The questionnaire was developed using a five point Likert scale measuring from Strongly Agree (5) to Strongly Disagree (1). All questions were arranged in one direction and all the constructs were operationally defined. Three methods of distribution were used for the questionnaire: (a) Facsimile (b) E-mail and (c) Personal delivery.

One hundred and fifty (150) questionnaires were distributed to employees in three commercial banks in Jamaica that were willing to participate in the survey. Survey responses were sought from persons working in the treasury, finance, operations, and risk management departments. The questionnaires were administered to supervisors, middle management and senior management who have been in direct contact with the internal auditors during an audit of the various sections of the three commercial banks surveyed. A convenience sampling technique was used to collect the data. In addition, given the absence of research on this area in Jamaica, preliminary discussions were held with internal auditors in the local commercial banking sector and one of the leading auditing firms in Jamaica, to identify what factors they considered relevant in measuring internal audit effectiveness in the local context.

Based on the interviews conducted, it was derived that the quality of the internal auditor's work, the evaluations of the auditees and the added contribution of IA were found to be the three most appropriate dimensions that encompass the concept of internal audit effectiveness; this was supported by a study conducted by Cohen and Sayag (2010). Hence, the dependent variable - internal audit effectiveness - which is the ability of the internal auditors to achieve established objective of the internal audit function, was measured by these three indicator variables. The four independent variables were adopted from a study conducted by Cohen and Sayag (2010), as well as discussions with the Chief Internal Auditors from the three (3) commercial banks that participated in the survey. The variables are professional proficiency, quality of audit work, organizational independence and top management support (as shown in Table 3).

The data from the survey was analyzed using Statistical Package for Social Scientists (SPSS) – version 20. The output included, descriptive statistics (means, standard deviation, frequencies and factor analysis), and inferential statistics (correlations and regressions).

**Table 3. Variables and reliability result**

<b>Indicator Variable</b>	<b>Cronbach Alpha</b>
Professional Proficiency	0.744
Quality of Audit Work	0.774
Organizational Independence	0.891
Top Management Support	0.640
Audit Quality	0.609
Auditees' Evaluation	0.811
Added Contribution of IA	0.683

To ensure accuracy, consistency, completeness and reliability of the instrument was established using Cronbach's coefficient Alpha test. It is widely accepted that reliability is established at 0.7 and above, but values of 0.6 to 0.70 is considered the lower limit of acceptability (Hair, Black, Babin and Anderson, 2010). Based on this threshold reliability is established as all the readings were above 0.6 as shown in Table 3.

## **4. Findings**

Out of the one hundred and fifty (150) questionnaires that were issued, one hundred and thirty (130) were returned which lead to a response rate of 86.7%. But out of the 130 questionnaires that were collected, eleven (11) questionnaires were incomplete and therefore rejected for the purpose of analysis. This makes the remaining one hundred and nineteen (119) responses which represent the valid response rate of 79.3%. According to Hair et al. (2010), a response rate of 30% is acceptable for survey.

The majority of the respondents were female (64%) while male constituted the remaining 36%. Most responses were received from middle managers (45.4%), followed by supervisors (31.9%) and senior management (22.7%). In terms of duration of employment with the organization, the majority of the respondents (37%) had been employed by their respective employer for over 10 years, followed by those between 1 – 5 years constituting 30.3%, 6 – 10 years accounting for 29.4% and 3.3% being employed for less than one year. The result revealed that the majority (64.5%) of the respondents were between 21 – 40 years of age, with those between 41 – 60 years accounting for 35.5%. There were no respondents below 20 years and above 60 years old.

The result of the descriptive statistics is shown in Table 4. The analysis is done on the basis of the 1 – 5 scale, where 1 is strongly disagree and 5 is strongly agree. The results in table 4 was populated and sorted in descending order of mean using information from the independent variables (Professional Proficiency, Quality of Audit Work, Organization Independence and Management Support). The results from the table revealed that internal auditors understanding of the business (4.51), participation in training and development by the internal auditors (4.38) and the focus of the audit plan (4.28) were the most important factors based on mean values, while follow up by the internal audit department was considered the least important with mean values of (3.77). The weighted score for independent variables (factors that expected to influence internal auditing effectiveness) ranged from 3.77 to 4.51 (75.4% to 90.2%) out of five, indicating that the respondent almost agree that the selected independent variables influencing internal audit effectiveness.

**Table 4. Descriptive statistics**

N = 119				
Survey Items	Min	Maxi	Mean	Standard Deviation
Internal Auditors should understand the business well enough to be able to look beyond the apparent facts, and identify root cause of problems.	1	5	4.51	.862
The organisation allows internal auditors to participate in training and development programs in order to maintain their skills and keep up to date in the field.	1	5	4.38	.736
The annual audit plan focuses on areas relevant to the organisation's stakeholders	2	5	4.28	.700
Management is sufficiently aware of the needs of IA, as demonstrated in the budget allocation to the department.	1	5	4.20	.850
The audit results will be useful in enhancing the overall effectiveness of the organisation's controls, policies and procedures.	1	5	4.10	.796
The Internal Auditors displayed technical competence and proficiency whilst conducting the review.	1	5	4.09	.725
Top management provides IA with the support needed	1	5	4.06	.773
IA operates totally independent and can audit area of the organisation it considers in need of auditing	1	5	4.06	.773
The areas to be audited are decided after identifying risks, quantifying them and determining appropriate risks levels.	2	5	3.95	.790
Adequate human resources are provided to the IA department and are sufficient given the amount of work required.	2	5	3.95	.757
The employment and termination of the Chief Internal Auditor requires approval from the Audit Committee, and/or the Board of Directors.	2	5	3.95	.757
IA has access to the organisation's information, records and locations.	2	5	3.95	.757
The audit work performed was consistent with the initial scope and objectives conveyed during the planning meeting.	2	5	3.95	.769
The audit scope and objectives were clearly communicated and agreed on during the planning phase of the audit.	2	5	3.93	.851
The audit team kept you informed of key issues identified during the audit.	2	5	3.90	.877
All organizational data pools are accessible to the Internal Auditor	2	5	3.89	.779
Regular and direct working relations with the Audit Committee, strengthen independence	2	5	3.89	.779
Detailed Budget proposals are included in the Audit Plan	2	5	3.87	.853
There is regular follow-up by the IA Department to examine actions taken to address audit findings.	1	5	3.77	.934

#### 4.1 Correlation analysis

The correlation analysis of the variables under study was subjected to a two-tailed test of statistical significance at  $p < 0.01$  level. Table 5 below shows that the correlations between all variables under study were statistically significant at  $p < 0.01$  level. Pearson correlation test was employed to establish the relationship between the independent and dependent variables. The results are detailed below:

**Table 5. Results of the hypothesis test**

Hypotheses	Variable	Result
H1	Quality of audit work	Supported***
H2	Organizational independence	Supported***
H3	Professional proficiency	Supported***
H4	Management support	Supported***

Note: \*\*\*  $p \leq 0.001$

#### 4.2 Multiple regression analysis

Linear regression estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable. Table 6 presents the results of the regression analysis.

**Table 6. Results of multiple regression analysis at 5% significant level**

Dependent Variable	Independent Variable	Adjusted R Square	Durbin-Watson	F-stats	Sig.	Constant	$\beta$	VIF
IA Effectiveness	Quality of Audit Work	0.797	1.511	117.14	.000	11.518	.226	2.473
	Organizational Independence						.855	2.405
	Professional Proficiency						.339	1.485
	Management Support						.530	1.251

- The adjusted  $R^2$  was 79.7%, which reflects the explanatory power for the independent variables to explain about 79.7% of the changes in the dependent variable - Internal Audit Effectiveness (IAE).
- Durbin-Watson statistic (which was 1.511) indicates that there is no serial correlation (autocorrelation) in the dependent variable, since it is so close from the optimal value (2).



- F-statistic and its significant denote the goodness of fit. In other word, f-statistic indicates that the model is properly specified to reflect the effect of independent variables on the dependent variable. In this study, the significance test value is less than ( $<0.001$ ) than the critical value of 0.05, which means that at 5% type 1 error rate or at 95% confidence interval, the model fits well in explaining the relationship that exist among the factors. The regression model which is used to explain the relationship among the factors is as follows:  
$$IAE = \alpha + \beta_1 \text{Organizational Independence} + \beta_2 \text{Professional proficiency} + \beta_3 \text{Quality of audit work} + \beta_4 \text{Management Support} + \epsilon$$
- Finally the, variance inflation factor (VIF) was low for all independent variables, indicating the absence of multi-collinearity problem.

The findings revealed that quality of audit work, organizational independence, professional proficiencies and management support significantly contribute to internal audit effectiveness at a 5% significant level.

## 5. Discussion

The study was designed to assess the factors that influence internal audit effectiveness in Jamaican commercial banks. Internal audit effectiveness was measured by quality of audit work, auditees' evaluation and added contribution of IA, while the independent variables were quality of audit work, organizational independence, support from top management and professional proficiency. The study confirmed the notion that the internal audit function is revolutionized from performing the traditional internal audit role of compliance and monitoring to focusing on value adding services. This claim is made based on the fact that all four hypotheses were found significant.

In addition, the findings are consistent with prior studies in which it was discovered that there is significant relationship between:

- Professional proficiency and internal audit effectiveness in the Jamaican commercial banks, ( $r = 0.339$ ,  $p < 0.01$ ). Hypothesis 1 (H1) was supported and the findings were consistent with Al-Twaijry et al. (2003) and Cohen and Sayag (2010) studies. This finding means that internal auditor's knowledge on company's operation, interpersonal skills and integrity are key influential factors on audit effectiveness in Jamaica.
- Organisational independence and internal audit effectiveness in Jamaican commercial banks, ( $r = 0.864$ ,  $p < 0.001$ ). Hypothesis 2 (H2) was supported and the findings were in alignment with those of Courtemanche (1986), Chambers et al. (1988), Bou-Raad (2000), Nassir et al., (2001) and Cohen and Sayag (2010). This finding supports the notion that internal auditor's

should be empowered and given the associated authority to seek compliance to the recommendations in their reports.

- Quality of audit work and internal audit effectiveness in Jamaican commercial banks, ( $r = 0.744$ ,  $p < 0.001$ ). H3 was consistent with Glazer and Jaenike (1980), who argued that performing auditing work in line with the auditing standards contributes significantly to the effectiveness of auditing. Based on this finding it is evident that the internal auditor's function should add value and improve efficiency in the operations of Jamaican banks.
- Top management support and internal audit effectiveness in Jamaican commercial banks, ( $r = 0.526$ ,  $p < 0.001$ ). The findings (H4) were thus consistent with the findings of Fernandez and Rainey (2006), who postulated that top management support and commitment to change play a crucial role in organisational renewal, as senior managers can mobilize the critical mass needed to follow through on efforts launched by one or two visionary thinkers.

The findings of this research are somewhat similar to the study conducted by Cohen and Sayag (2010). The regression results in this study revealed a positive relationship between quality of audit work, organizational independence, management support and professional proficiency on internal audit effectiveness in Jamaican commercial banks. This implies that increase in the level of quality of audit work; organizational independence; management support and professional proficiency will also result in an increase in the level of internal audit effectiveness. This high level of performance is critical in Jamaica who is plagued with resource constraints, as do most developing countries. Based on the constraints being experienced by Jamaican commercial banks it is important that operational weaknesses are minimized and risks are adequately identified and managed. Banks in Jamaica might find it difficult to absorb such failures due to resource constraints.

## **6. Conclusion**

The study found that the quality of audit investigation, organizational independence, professional proficiencies and management have a significant impact on internal audit effectiveness. It was expected that both organizational and individual factors could influence the effectiveness of the internal audit function.

The findings of this study will contribute to the internal audit literature and also provide insight to enhance internal audit effectiveness in Jamaican commercial banks. These insights can strengthen corporate governance structure of these institutions. However, the findings of this study are not generalizable. They are limited to the scope of commercial banks in Jamaica.

Although limited in scope, a few recommendations are made in the context of Jamaica. Policies makers, such as the Central Bank of Jamaica, can use the research to assess the impact internal audit have on the efficient operation of the banking sector. Other financial institutions and the commercial banks that did not participate in the can also use the findings of this study to design and implement a system to assess the effectiveness of internal audit as a governance tool. Internal auditors should seek to maintain professional proficiency, organisational independence and the quality of work performed to maintain internal audit effectiveness. Future research could be conducted on the effectiveness of internal audit in other sectors, both public and private. In addition further study should concentrate on the examination of other factors that contribute to internal audit effectiveness which were not included in this study.

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