# Effects of Internal Control towards Money Laundering Prevention: An Interrelation Perspective

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abstract

*Money launderers often target banking institutions to launder their money, attributable to the wide array of financial services offered. Many banks have anti-money laundering control activities to fight money laundering. However, the effectiveness of these control activities in preventing money laundering are still questionable, since the problem of money laundering are continuously increasing in developing countries such as Malaysia. Therefore, this research aims to determine the influence of control environment, risk assessment, information and communication, and monitoring on the effectiveness of anti-money laundering control activities. The data were collected through survey questionnaires sent to 300 branch managers of banks in the Klang Valley, with 108 responses received. The results reveal that anti-money laundering control activities were able to prevent money laundering in Malaysian banking institutions. The results also show that control environment and monitoring had a positive influence on the effectiveness of anti-money laundering control activities to prevent money laundering. Previous research has put less emphasis on the factors influencing the effectiveness of anti-money laundering control activities in preventing money laundering. Thus, this study has contributed to fill this gap by examining the factors influencing the effectiveness of anti-money laundering control activities. Moreover, this research also has practical implications in the identification of the factors that influence the effectiveness of anti-money laundering control activities that can potentially help to curb money laundering at high levels.*

*Keywords: Anti-money laundering control activities; internal control; money laundering; prevention; bank.*

## Introduction

Money is one of humanity's greatest creation and without money; a civil society will face difficulties in functioning efficiently. However, money is often misused, the prime example being incidences of money laundering (Bala 2005; Hakami et al., 2020). Malaysia is a country that faces a serious money laundering problem. The International Narcotics Control Strategies Report (2016) designated Malaysia as a country of concern when it comes to money laundering (United States Department of State 2017). The International Monetary Fund (IMF) ranked Malaysia in the top 30 among 148 developing countries with the highest illicit financial outflows in the year 2015 (Global Financial Integrity 2019). Global Financial Integrity (2020) stated that illicit flows recorded in Malaysia due to trade misinvoicing as a measure of measurable money laundering activity came to USD 38,248 million in the year 2015, USD 39,427 million in the year 2016 and USD 41,022 million in the year 2017. This statistic shows the increasing trend in money laundering activity in Malaysia. Money laundering has many negative implications on society as a whole since it stunts a nation's economic growth, weakens financial institutions directly, and also cause many social problems. Money launderers often target banking institutions to launder money due to the wide range of financial services offered by banks. Many countries are putting much effort to curb money laundering, especially in the banking sector so as to prevent the damaging aspects of money laundering (Yusarina et al. 2015; Vitvitskiy et al., 2021). Banks' effective internal controls are useful means to fight against the problem (Chatain et al. 2009).

Saperstein et al. (2015) emphasis that weak internal controls in banking institutions exposes banks to the risk of money laundering. Many banks have suffered losses due to the failure in internal controls particularly controls related to money laundering. The COSO (2013) framework outlined that all the components of internal control which include control environment, risk assessment, control activities, information & communication, and monitoring are interdependent on one another with strong interrelationships and connections which ensure the effectiveness of internal control systems. Agbejule and Jokipi (2008) and Hassan et al., (2015) revealed that based on the contingency theory a fit between internal control components will result in enhanced effectiveness of the entire control system. As such, this study predicts that other internal control elements like control environment, risk assessment, information & communication, and monitoring can influence the effectiveness of anti-money laundering control activities to prevent money laundering.

Many banks implement anti-money laundering control activities like anti-money laundering programs, policies, and procedures to fight the money laundering; however, the effectiveness of these control activities in

preventing money laundering is still questionable since the problem keeps on increasing in developing countries like Malaysia (Jamaliah et al., 2013). Therefore, the problem of this research is centered on the lack of effectiveness of anti-money laundering control activities in preventing money laundering. Since all the internal control elements are interdependent on each other with strong interrelationships between them, this research ultimately question whether other internal control components like control environment, risk assessment, information & communication as well as monitoring activities can influence the effectiveness of anti-money laundering control activities to prevent money laundering in banks. There are no past studies that examined these moderating relationships, and the scarce evidence available motivates this study. Therefore, we set our objective to examine whether other components of internal control like control environment, risk assessment, information and communication, and monitoring influence the effectiveness of anti-money laundering control activities in preventing money laundering in the banking sector.

The data were collected using survey questionnaires that were sent to 300 branch managers from banks in Klang Valley with 108 responses being received. The results revealed that anti-money laundering control activities are able to prevent money laundering in Malaysian banking institutions. The results also proved that control environment and monitoring had a positive influence on the effectiveness of anti-money laundering control activities in preventing money laundering.

This research has mainly contributed in filling the gaps of prior studies by identifying the impact of internal controls in preventing money laundering involving banks in Malaysia. This pioneering study provides empirical evidences on the moderating effects of internal control elements (control environment, risk assessment, information & communication, and monitoring) towards the effectiveness of anti-money laundering control activities in preventing money laundering. Identification of the factors that influence the effectiveness of anti-money laundering control activities is crucial to curb money laundering at high levels. If anti-money laundering control activities are effective, the banks can be well protected from being misused by money launderers to launder money, particularly in developing countries like Malaysia. This research also contributes to the research methodology by empirically testing the ability of anti-money laundering control activities in preventing money laundering in the Malaysian banking sector. The ability of anti-money laundering control activities implemented in banks to prevent money laundering needs to be empirically tested so that improvements in anti-money laundering control activities can be done to mitigate the risk of money laundering involving banks.

## LITERATURE REVIEW, THEORY AND HYPOTHESES DEVELOPMENT

### MONEY LAUNDERING

Money laundering is the process of covering up proceeds obtained from criminal activities in order to hide the true source or origin and to provide legitimacy for ill-gotten gains from crime so that the criminals can ultimately profit from the ill-gotten money (FATF 2016). Ajay Kumar (2012) defined money laundering as the process whereby huge amounts of criminally obtained funds from drug trafficking, terrorism activity, or other serious crimes are given the perception of having originated from legal sources. These illegal funds originate from serious crimes that include but are not limited to illegal arms sales, smuggling, corruption, tax evasion, insider trading, bribery, and others. Schott (2003) explained that the purpose of money laundering is to hide the true sources and nature of the properties and to hide the participation in the criminal offences that obtain these illegal properties.

Money laundering has many negative implications on society as a whole since it stunts economic growth by distorting monetary stability. Money laundering also tarnishes the good reputation of a nation which negatively impacts the inflows of foreign direct investments. Moreover, money laundering weakens financial institutions as it causes the financial institutions to lose the trust of their customers which may affect their profitable loan portfolios and also reduce their deposits which are expensive source of funding that would eventually lead to liquidity problems. Money laundering also causes many social problems. It creates a perception that crime generate revenues that can be freely used which in turn encourage the young to commit crime. Hence, money laundering needs to be curbed to prevent its damaging effects (Ajay Kumar 2012; OECD 2009; Schott 2003).

By looking at the ultimate purpose of money laundering, the banking sector is the main target of money launderers to launder their illicit proceeds since banks provide wide arrays of financial services like loans, deposits, foreign exchange, and others (Yusarina et al. 2015). The banks can initiate many anti-money laundering programs to curb money laundering. A proper system is required to ensure that anti-money laundering programs are being executed accordingly and they are functioning as intended. Hence, a sound system of internal controls can ensure that anti-money laundering programs are being executed and functioning as intended as well as to ensure their ongoing compliance (Chatain et al. 2009).

### INTERNAL CONTROL

COSO (2013) framework defined internal control as procedures intended to provide reasonable affirmation concerning the accomplishment of goals in relation

to operations, reporting as well as compliances that have effects on an organisation's board of directors, management and staff. The internal control system is the whole control system established by the management to conduct the business operation in an orderly and efficient manner, ensure compliance to management policies, safeguard the assets, and ensure completeness and accuracy of records. Internal control will increase the chances of achieving the goals set during the planning stages and to make sure that all parts of the organisation are functioning in accordance with organisational policies (Garrison et al. 2008; Hassan et al., 2015). COSO (2013) framework sets out five key elements of internal control, i.e., control environment, risk assessment, control activities, information and communication, and monitoring.

Contingency theory suggests that there is no "one best way" in managing organisations, however, the effectiveness of organisational structure and management style are dependent on contingent factors normally referring to environmental uncertainties (Tosi & Slocum 1984). Ven and Drazin (1985) stated that organisational effectiveness is dependent on fit or match between the contingent factors. Agbejule and Jokipi (2008) and Hassan et al., (2015) revealed that a fit between internal control components will result in enhanced effectiveness of the entire control system. The adoption of all the internal control components in an organisation is affected by environmental factors. This is because internal control systems are continuously changing based on the constantly evolving business models, demanding technological requirements, strict regulatory needs, globalisation, and other challenges (COSO 2013). As such, internal control components are deemed as contingent variables in the current research.

### ANTI-MONEY LAUNDERING CONTROL ACTIVITIES

Control activities are actions taken via policies and procedures which tries to ensure that management's directives are observed to negate identified risks to meet organisational goals. The control activities can be preventive or detective in nature (COSO 2013). In the context of banking sector, establishing effective control activities is crucial (Gamage et al. 2014). The control activities that specifically design for combating money laundering is referred to anti-money laundering control activities. Jamaliah et al. (2013) observed that commercial banks in Malaysia adopt such controls to prevent money laundering like Customer Due Diligence (CDD) procedures; obtaining information from clients hesitant to provide information; updating compliance programs as per laws and regulations; monitoring customers' accounts for suspicious activities; submitting Suspicious Transaction Report (STR) to regulators; and providing anti-money laundering training to employees.

Strong anti-money laundering control activities such as anti-money laundering policies and procedures act as a powerful tool to prevent money laundering (IFAC 2004). Okab (2014) also revealed that anti-money laundering control activities which include establishing Know Your Customer (KYC) policies, having automated record-keeping systems, providing training to employees, as well as monitoring customers' transaction able to curb money laundering in the case of Jordanian banking institutions.

Apart from that, contingency theory suggests that there is no one best way to manage organisations. This concept is applicable to money laundering since there is no one particular anti-money laundering control activity that can prevent money laundering. The prevention of money laundering in the banking sector is dependent on various types of anti-money laundering control activities adopted by the banks. Hence, this research proposed the first hypothesis as follows:

$H_1$: Various types of anti-money laundering control activities can help in preventing money laundering in the Malaysian banking sector.

Additionally, implementing other internal control components could act as the backbone for the operational support to control activities (Imoniana & Lopes da Silva 2019). COSO (2013) framework also indicated that all the components of internal control are interdependent on one another with strong interrelationships and connections among them. Thus, we propose and discuss the development of interaction hypotheses as below.

### CONTROL ENVIRONMENT INFLUENCE ON ANTI-MONEY LAUNDERING CONTROL ACTIVITIES

Control environment is the most crucial internal control component (COSO 2013) as it is defined as the set of standards, processes, and structures which forms the basis to carry out internal control within organisations. Control environment is the core for all aspects of internal control and it is influenced by the integrity and ethical values of the leaders in the organisation (Callaghan et al. 2007). Pramod et al. (2011) opined that the control environment is a critical element for anti-money laundering operations. A strong anti-money laundering culture refers to senior management and managerial efforts to manage money laundering and terrorist financing risks and to implement integrated controls to meet compliance objectives (KPMG 2016). Jamaliah et al. (2013) argued that the lack of top management support explains the lower level of money laundering and terrorist financing preventive measures being adopted among commercial banks in Malaysia. Besides, IFAC (2004) stated that just having anti-money laundering policies and procedures are insufficient to mitigate money laundering. In order to be effective, control activities need to be customised very specifically to the institution's control environment and risk appetite.

In addition, prior research revealed that a fit between internal control components will result in enhanced effectiveness of the control system. As such, effective anti-money laundering control activities in preventing

money laundering refers to the fit between anti-money laundering control activities and control environment. Hence, the second research hypothesis is as follows:

$H_2$: Control environment element of internal control positively influences the effectiveness of anti-money laundering control activities in preventing money laundering in banks.

### RISK ASSESSMENT INFLUENCE ON ANTI-MONEY LAUNDERING CONTROL ACTIVITIES

Risk assessment involves a dynamic and iterative process used to identify and evaluate the risks that can hinder organisations from achieving their objectives. Risk assessment forms the basis to determine how risks will be managed. Yusarina et al. (2015) emphasize that assessing the risk of money laundering is important since banks are highly exposed to money laundering. The Wolfsberg Group (2015) pointed out that risk assessment is very crucial in order to enhance anti-money laundering policies, procedures, and processes; to understand whether anti-money laundering compliance programs are aligned with the risk appetite of financial institutions' business lines; and also to initiate risk negation strategies which include relevant controls in order to reduce the business lines exposure to risks. Ebikake (2016) explained that the extent of money laundering risks that potential customers may pose to the banks need to be evaluated before accepting the clients' business to implement the right risk-based anti-money laundering controls.

As discussed earlier, all the components of internal control are interdependent on one another with strong interrelationships. Past research revealed that a fit between internal control components will lead to improve effectiveness of the control system (Agbejule & Jokipi 2008). However, there is no evidence to date whether the effectiveness of anti-money laundering control activities in preventing money laundering is influenced by risk assessment. Hence, the third research hypothesis is as follows:

$H_3$: Risk assessment element of internal control positively influences the effectiveness of anti-money laundering control activities in preventing money laundering in banks.

### INFORMATION AND COMMUNICATION INFLUENCE ON ANTI-MONEY LAUNDERING CONTROL ACTIVITIES

Information is crucial to undertake internal control responsibilities to support organisational objectives. Management generates and uses information from both internal and external parties to ensure internal controls. Communication is the iterative process of providing, sharing, and obtaining relevant information. Thus, information and communication are crucial for establishing effective internal control. Okab (2014) stressed that banks must develop information and communication systems via a set of procedures that can assist management to obtain all the data in relation to anti-money laundering operations. IFAC (2004) pointed out that money laundering deterrence needs both information and communication. The anti-money laundering controls such as KYC procedures need reliable information and successful execution of business processes. Moreover, an effective STR system will need staff in financial institutions to maintain good records and communicate effectively. Effective anti-money laundering strategies need enterprise-wide continuous and trustworthy information about the events and controls (IFAC 2004).

Besides, based on contingency theory, organisational effectiveness is subject to a fit or match between various contingent factors. Thus, effectiveness of anti-money laundering control activities in preventing money laundering may denote a fit between anti-money laundering control activities and information and communication. However, the evidence is scarce in banking sector, hence, the fourth hypothesis is as follows:

$H_4$: Information & communication elements of internal control positively influence the effectiveness of anti-money laundering control activities in preventing money laundering in banks.

### MONITORING INFLUENCE ON ANTI-MONEY LAUNDERING CONTROL ACTIVITIES

COSO (2013) stated that monitoring is ongoing evaluations, separate evaluations, or some mixtures of both are used to identify whether each of the internal control elements is functioning as intended. The findings of the evaluations are compared with established standards set by regulatory bodies and the deficiencies are communicated to top management for further actions. Bank top management should priorities monitoring efforts on internal control to fight and curb money laundering effectively (Gamage et al. 2014; Okab 2014). Monitoring assure that control activities are being carried out promptly so that any deficiencies identified can be rectified to improve these activities (Okab 2014). It is aligned with past study on contingency theory which revealed that the internal control components are interrelated (Agbejule & Jokipi 2008). Nonetheless, the evidence is limited whether interaction between anti-money laundering control activities and monitoring can prevent money laundering in banking sector. Hence, the fifth research hypothesis is as follows:

$H_5$: Monitoring element of internal control positively influences the effectiveness of anti-money laundering control activities in preventing money laundering in banks.

## Research Methodology

### SAMPLE & DATA COLLECTION

This study focused on the banking sector since banks are the main target of the money launderers to launder their illegal proceeds due to the wide range of financial services offered by banking institutions (Yusarina et.al 2015). The data are collected via a survey questionnaire. The respondents are the banks' branch managers as they are the ones responsible to oversee all the activities happening in the bank branches. The population consists of 820 bank branches operating in the Klang Valley (Selangor and Kuala Lumpur) from 45 commercial and Islamic banks as of October 2018. The statistics released by the Department of Statistics Malaysia (2020) show that the Klang Valley has recorded the highest number of crime indexes in the year 2018 and 2019. Therefore, money launderers may target the Klang Valley area to conceal their crime profits. It is aligned with Luque (2015) that found the crime rate in urban areas is 300% higher than the crime rate in countryside areas.

The responding bank branches were selected based on the purposive sampling method. The survey questionnaires were sent to the respondents by hand and also via post. Self-addressed stamped envelopes were attached with the survey questionnaires which were sent via post to ease the response process. Out of the 300 survey questionnaires sent out via hand and posted to the selected bank branches, 108 responses were received. This came to 36 percent of the sample surveyed. The responses for survey questionnaires which were sent by hand were collected after three weeks while the respondents who responded via post were given one and a half months to return the survey. Follow-up calls were made to the branch managers two weeks after the survey questionnaires were sent out by hand and three weeks after the survey questionnaires were posted out. The survey questionnaires were sent out beginning mid-October 2018 and all the responses were received by the end of December 2018.

The respondents' demographic analysis results are not tabulated for brevity. The survey was almost equally responded by both male (49.07%) and female (50.93%) branch managers. In terms of age, only a small percentage (6.5%) of respondents are aged between 21 to 30 years while the majority of the respondents are middle-aged between 31 to 40 years (32.4%) and 41 to 50 years (46.3%). This reflects the skills and experience needed to manage a branch; hence, it is justifiable that a small percentage of respondents are young while the majority of them are middle-aged. Meanwhile, most of the respondents are well-experienced in banking since they have been working as branch managers for more than 10 years (49.1%). Finally, most of the respondents work in bank branches that have a high number of employees: above 61 people (52.8%), between 41 to 60 employees (29.6%) while only a small number of respondents work in branches with less than 20 employees (4.6%). This figure is understandable as the banking requirements in Klang Valley are high reflected in the sizeable banking operations which requires more employees to be stationed in the branch.

### RESEARCH DESIGN

The Moderated Multiple Regression (MMR) method has been used to test the hypotheses. Since the current research also aims to identify the direct effect of anti-money laundering control activities towards money laundering prevention in the presence of the interaction effects, the MMR analysis was run using the mean-centred predicting variables to avoid any multicollinearity issues (Aguinis & Gotfredson 2010). The model is illustrated below:

$$MLP = \beta_1 + \beta_2 AMLCA + \beta_3 CE + \beta_4 RA + \beta_5 IC + \beta_6 Mon + \beta_7 (AMLCA*CE) + \beta_8 (AMLACA*RA) + \beta_9 (AMLCA*IC) + \beta_{10}(AMLCA*Mon) + BSize + \varepsilon \tag{1}$$

Where, MLP : Money laundering Prevention,

AMLCA : Anti-Money Laundering Control Activities,

CE : Control Environment,

RA : Risk Assessment,

IC : Information and Communication,

Mon : Monitoring,

BSize : Bank Size,

$\varepsilon$ : an error term.

The detailed definition and measurements of the variables are illustrated in Table 1 as below:

TABLE 1. Operationalization of variables

| Variables | Definitions and Measurements |
|---|---|
| Anti-Money Laundering Control Activities | According to (COSO 2013), control activities are the actions taken via policies and procedures to make sure that the management's directives to negate risks to the accomplishment of the organizational goals are being conducted. Control activities can be preventive or detective in nature. The control activities in relation to anti-money laundering are referring to the money laundering preventive measures like having anti-money laundering policies and procedures. This variable is measured by using a 5-point Likert scale questionnaire that consists of 27 items which were adopted with slight changes from "The Wolfsberg Group's Anti-Money Laundering Questionnaire" developed by The Wolfsberg Group. |
| Control Environment | The control environment is the set of standards, processes, and structures which grant the foundation to carry out internal control within the organization (COSO 2013). The top management sets the tone at the top in regards to the vitality of internal control which includes the expected standards of conduct while the management reiterates those standards at all levels of the organization. There are 5 key principles of control environment which are related to commitment to integrity and values; oversight responsibilities; establishment of the structure, authority, and responsibility; commitment to competence; and accountability towards internal control responsibilities. A 5-point Likert scale questionnaire that consists of 15 items was used to measure control environment. |
| Risk Assessment | Risk assessment involves a dynamic and iterative process used to identify and evaluate the risks that can hinder the organization from achieving its objectives (COSO 2013). There are 4 key principles of risk assessment which are related to the specification of the suitable organizational objectives; identification and analysing the risk in achieving the objectives; fraud risk assessment; and the identification and analysing the changes that can significantly affect the internal control system. A 5-point Likert scale questionnaire that consists of 11 items was used to measure risk assessment. |
| Information & Communication | Information is crucial to conduct internal control responsibilities in order to support the organization's objectives. Management generates and utilizes information from both internal and external parties to accommodate the other elements of internal control. Communication is an iterative process of providing, sharing, and obtaining relevant information (COSO 2013). There are 3 key principles of information & communication which include the utilization of relevant information; internal communication; and external communication in the organisation. A 5-point Likert scale questionnaire that consists of 9 items was used to measure information and communication. |
| Monitoring | Monitoring is an ongoing evaluation, separate evaluation, or some mixtures of both which are used to identify whether each of the internal control elements is functioning as intended (COSO 2013). There are 2 key principles of monitoring which include organization conducts ongoing and/or separate assessment; and monitoring of corrective actions. A 5-point Likert scale questionnaire that consists of 5 items was used to measure monitoring. |
| Money laundering Prevention | In this research context, money laundering prevention is referred to the ability of banking institutions to avoid and protect themselves from being misused by money launderers to launder their illicit proceeds. A 5-point Likert scale questionnaire which consists of 8 items was used to measure money laundering prevention. The items are adopted from Okab (2014), Jamaliah et al. (2013), Webb (2004), Hammouri and Al-Wedian (2013), and Raweh et.al (2018). |
| Bank Size | According to Kremer (1993), Oliveira et al. (2011), and Hassan et al., (2015) human resources are positively correlated to a firm's size. Hence, the bank size of the current research is measured through the number of employees working in the bank branches. |

*Note*: All the items for Control Environment, Risk Assessment, Information & Communication, and Monitoring were adopted with slight changes from the "2017-18 Internal Control Questionnaire and Assessment" developed by the Bureau of Financial Monitoring and Accountability Florida Department of Economic Opportunity.

VALIDITY OF DATA

Factor analysis is one of the validity tests used to identify, reduce and rearrange the questions in the survey into a defined construct. In order to consider a factor to be reliable, items in the survey questionnaire should exhibit a factor loading of more than 0.4 regardless of the sample size (Stevens 1992). Meanwhile, Hashim et al., (2021) and Kamil (2006) conducted separate factor analyses for items in the survey questionnaires with respect to each variable. In the current research, factor

analysis has been conducted in aligned with Hashim et al., (2021) and Kamil (2006). The results revealed that the factor loadings and communalities values for all the items of information & communication, monitoring, and money laundering prevention in banks were more than 0.4 and no cross-loadings were identified. Hence, all the items for each of the variables have been retained for purpose of data analysis. However, the factor loadings and communalities values were found to be lesser than 0.4 and there were cross-loadings for some of the items for anti-money laundering control activities, control environment, and risk assessment variables, respectively. These items were re-coded to identify whether there were any negative statements; however, no changes were observed in the results obtained. Factor analyses were then repeated without the items with lesser than 0.4 factor loadings and communalities values and also without the cross-loaded items. The subsequent analyses revealed that all the items were loaded into only one component for each of the variables with more than 0.4 factor loadings and communalities values, respectively. Hence, the items with lesser than 0.4 factor loadings and communalities values as well as the cross-loaded items for anti-money laundering control activities (items number 5, 14, 19, 21, 22, and 27), control environment (items number 3, 4, 5, 8, and 15), and risk assessment (items number 16 and 18) variables were not analysed. Table 2 shows the summary of the results for the factor analyses.

TABLE 2. Factor loadings and Cronbach Alpha

| Variables | Number of Items | Factor Loadings | Cronbach Alpha Coefficient |
|---|---|---|---|
| Anti-Money Laundering Control Activities (AMLCA) | 21 | 0.782-0.938 | 0.985 |
| Control Environment (CE) | 10 | 0.778-0.925 | 0.959 |
| Risk Assessment (RA) | 10 | 0.748-0.916 | 0.955 |
| Information & Communication (IC) | 9 | 0.773-0.902 | 0.956 |
| Monitoring (Mo) | 5 | 0.833-0.947 | 0.952 |
| Money Laundering Prevention (MLP) | 8 | 0.840-0.926 | 0.957 |

Reliability test indicates the consistency and stability of a measure of a concept. Cronbach Alpha test is widely used to evaluate the reliability and internal consistency of survey instruments. An alpha coefficient of 0.8 is the generally accepted level for internal reliability (Bryman & Bell 2015). Table 2 also represents the results of the reliability test, which the findings indicate that all the variables had alpha coefficients in the range of 0.952 to 0.985. As such, the result revealed that the items in the questionnaires for each variable were consistent and they measure the same concept.

The results of Kolmogorov-Smirnov and Shapiro-Wilk[1] tests revealed that the data for each variable was not normally distributed since the level of significance was less than $p < 0.05$. Field (2009) however mentioned that according to the central limit theorem, data is still considered as normally distributed if the sample size exceeded 30. Hence, the current research data is considered to have a normal distribution since the sample size was 108 which far exceeded the required sample size of 30. Additionally, Pallant (2011) explained that if there is minimal difference between the actual mean and 5% trimmed mean of each variable which does not exceed 0.20, the data is still considered as normally distributed. In this study, the difference between the mean value and the trimmed mean value of each variable was between 0.02 to 0.04 which was far less than 0.20. As such, the trimmed mean analysis confirmed that the research findings have a strong influence on the mean which indicates that the data is still normally distributed.

We run the Pearson correlation analysis and Variance Inflation Factor (VIF) analyses to identify any potential of multicollinearity issue among independent variables (Field 2009; Pallant 2007). A correlation coefficient that is greater than 0.8 or 0.9 is indicative of high collinearity (Lindner et al. 2019). Meanwhile, Hair et al. (2010) added that multicollinearity can also be detected if the VIF exceeded 10. The results are shown in Table 3. This result of the Pearson correlation analysis showed that the highest correlation is 0.731 (IC*RA) but was less than 0.8 while the others are below than 0.533. Additionally, the VIF values for all the variables were less than 10. These results concluded that the predicting variables are free from multicollinearity.

TABLE 3. Pearson correlation coefficient analysis

|        | AMLCA     | CE        | RA        | IC        | Mo  | VIF   |
|--------|-----------|-----------|-----------|-----------|-----|-------|
| AMLCA  | 1         |           |           |           |     | 1.571 |
| CE     | 0.451**   | 1         |           |           |     | 1.513 |
| RA     | 0.006     | 0.262**   | 1         |           |     | 2.233 |
| IC     | 0.063     | 0.272**   | 0.731**   | 1         |     | 2.518 |
| Mo     | 0.533**   | 0.513**   | 0.236*    | 0.411**   | 1   | 1.922 |

*Note:* Refers to equation 1 for definition of the variables. *, **Significant at a level 0.05, 0.01 respectively.

## DESCRIPTIVE ANALYSIS

Table 4 shows the descriptive analysis for independent, moderator, and dependent variables. Among all the variables, risk assessment and information & communication had the highest mean values at 4.37 and 4.24 which were closer to the strongly agreed value of (5.00) respectively. These values indicate that the respondents strongly perceived that their banking organisations gave significant importance to assessing risks that could hinder the organisations from achieving their objectives. The respondents also strongly believed that their banking organisations have communicated necessary and relevant information throughout the organisations and to the external parties promptly. Meanwhile, the anti-money laundering control activities variable had a mean value of 4.08 above the agreed value of (4.00). Moreover, the mean values of the control environment, monitoring, and money laundering prevention variables were 3.88, 3.80, and 3.80 which were closer to the agreed value of (4.00), respectively. These implied that most of the respondents agreed that there were reasonably sufficient levels of money laundering preventive measures being adopted in their banks with considerably a strong control culture in place. The respondents also believed that there was sufficient oversight and remedial activities being conducted in their banks and that they were also reasonably assured that the banks were being protected from incidences of money laundering.

TABLE 4. Descriptive analysis

|        | N   | Min  | Max  | Mean | Std. Deviation |
|--------|-----|------|------|------|----------------|
| AMLCA  | 108 | 1.62 | 5.00 | 4.08 | 1.11           |
| CE     | 108 | 1.30 | 5.00 | 3.88 | 1.04           |
| RA     | 108 | 1.90 | 5.00 | 4.37 | 0.67           |
| IC     | 108 | 2.00 | 5.00 | 4.24 | 0.77           |
| Mo     | 108 | 1.20 | 5.00 | 3.80 | 1.17           |
| MLP    | 108 | 1.00 | 5.00 | 3.80 | 1.11           |

*Note:* Refers to equation 1 for definition of the variables.

## MULTIVARIATE ANALYSIS

The results of multiple regression analysis are shown in Table 5. The adjusted $R^2$ was 65% which indicates that 65% of the variation in the money laundering prevention can be explained by the model. This is an enormously large effect (Cohen 1988). The results overall evidenced that there is a positive relationship between anti-money laundering control activities and money laundering prevention that can be strengthened by moderating variables like control environment, risk assessment, information & communication and monitoring.

TABLE 5. Moderated multiple regression analysis

|  | Coefficients | t-statistic | Significant |
|---|---|---|---|
| Constant |  | -1.048 | 0.30 |
| AMLCA | 0.410 | 4.542 | 0.00** |
| CE | 0.003 | 0.031 | 0.98 |
| RA | 0.057 | 0.660 | 0.51 |
| IC | 0.055 | 0.564 | 0.57 |
| Mon | 0.435 | 4.243 | 0.00** |
| AMLCA*CE | 0.280 | 3.547 | 0.00** |
| AMLCA*RA | 0.117 | 1.381 | 0.17 |
| AMLCA*IC | 0.026 | 0.280 | 0.78 |
| AMLCA*Mon | 0.228 | 2.615 | 0.01** |
| BSize | 0.004 | 0.058 | 0.95 |
| Adjusted $R^2$ |  | 65% |  |
| F-Statistic |  | 20.88** |  |
| N |  | 108 |  |
| Sig |  | .00** |  |

*Note*: Refers to equation 1 for definition of the variables. ***, **, * Significant at a level 0.01, 0.05 and 0.10 respectively.

Table 5 shows that the direct effect between anti-money laundering control activities (AMLCA) and money laundering prevention (MLP) was positive with a coefficient value of 0.410 (t-stat. =4.542), significance at a level $p < 0.05$. Hence, hypothesis 1 which states that various types of anti-money laundering control activities can help prevent money laundering in the Malaysian banking sector is accepted. This positive relationship implies that the respondents perceived that the implemented anti-money laundering prevention measures in their banks are capable to prevent money laundering. However, the results revealed that the direct effects of control environment (CE), risk assessment (RA), and information & communication (IC) towards money laundering prevention on MLP were not significant. Carte and Russell (2003) suggested that it is not necessary for a moderating variable to have a direct effect on the dependent variable in moderation analysis. As such, the statistically insignificant direct effects do not impact the findings on the moderation effects.

Table 5 also shows the results for the moderating effects of internal control attributes on the AMLCA-MLP relationship. The interaction effect between anti-money laundering control activities and control environment (CE) in preventing money laundering was found to be positive and statistically significant with a coefficient value of 0.280 (t-stat. 3.547); p < 0.05. Hence, hypothesis 2 which states that control environment element of

internal control positively influences the effectiveness of anti-money laundering control activities in preventing money laundering in banks is accepted. Nevertheless, the research finding revealed that risk assessment and information & communication unable to moderate the relationship between anti-money laundering control activities and money laundering prevention, thus hypothesis 3 and 4 are rejected.

Finally, Table 5 depicts that the direct effect of monitoring on money laundering prevention was positive, with a coefficient value of 0.435 (t-stat. =4.243), and level of significance at p<0.05. This study found that the monitoring element of internal control can moderate the relationship between anti-money laundering control activities and money laundering prevention with a coefficient value of 0.228 (t-stat = 2.615), significant at p<0.05. Thus, hypothesis 5 which states that monitoring element of internal control positively influences the effectiveness of anti-money laundering control activities in preventing money laundering in banks is accepted.

## DISCUSSION

This research aims to examine whether anti-money laundering control activities can help in preventing money laundering in the Malaysian banking sector. Vitvitskiy et al. (2021) revealed that the increased incidences of money laundering resulted from lack of anti-money laundering

control activities in place by financial institutions. These institutions did not conduct sufficient customer due diligence and failed to conduct audits as they feared losing customers' trust. In order to fight money laundering, financial institutions must improve their anti-money laundering regimes by providing continuous anti-money laundering training to related staffs; establishing specialised departments which include information technology specialists, legal officers, and financial experts to investigate potential money laundering crimes; and to conduct regular audits while preserving customers' trust. Our findings confirmed that anti-money laundering control activities can help in preventing money laundering in the Malaysian banking sector. Our findings support Nguyen (2018) and Okab (2014) who emphasized that the financial institutions must adopt sufficient controls to prevent money launderers from using financial institutions to launder money. Applying anti-money laundering control activities as preventive measures reduce the money laundering operations as well as the underlying criminal activities associated with money laundering (Chong & Lopez De-Silanes 2015).

This research also ultimately aims to identify whether control environment, risk assessment, information & communication as well as monitoring influence the effectiveness of anti-money laundering control activities in preventing money laundering in the banking sector. We argue that control environment, risk assessment, information & communication, and monitoring are crucial component of internal control; however, the desired outcomes cannot be obtained without having proper actions in place to achieve the goals (Mihelic et al. 2010). In fact, except for monitoring, our result supports the argument in which implementing control environment, risk assessment, and information & communication alone were found to be insignificant to prevent money laundering activity in banking sector. The internal control attributes can be customised with anti-money laundering control activities to increase the effectiveness of anti-money laundering control activities in preventing money laundering (IFAC 2004).

For example, strong support from top management is critical in setting up mechanisms to ensure effective execution of anti-money laundering (AML) policies. These include allocating budgets for information technology to assist AML functions, maintaining competent staff, and providing training to relevant employees as well as fostering ethical behaviour (Aspalella 2015). Our findings empirically confirmed that interaction between control environment and anti-money laundering control activities can prevent money laundering in banks. It is aligned with a study by Vaithilingam and Nair (2007) which revealed that organised AML framework with good governance spearheaded by top management could reduce incidences of money laundering.

However, we found that the interaction effect of anti-money laundering control activities and risk assessment on money laundering prevention was insignificant. We believe that assessing risk is difficult task and not all types of risk can be identified through the risk assessment process (Brady 2015). Additionally, there are too many changes in the anti-money laundering risk assessment strategies due to the frequent changes in regulations and compliance requirements as well as money launderers' strategies (Naheem 2019). Developing risk assessment systems with respect to money laundering and terrorist financing are complex compared to other areas (Ross & Hannan 2007). This is because money launderers and terrorist financiers actively evolve and are able to identify smarter strategies to avoid detection by constantly using new criminal methods. Hence, financial institutions need to utilise multiple resources to constantly update their risk assessment systems to reflect the changes in the sources of risks and the new typologies used in money laundering and terrorism financing which can be very challenging.

We also found that the interaction between information & communication and anti-money laundering control activities is insignificant to prevent money laundering in the banking sector. We agree with Adu-Oppong and Agyin-Birikorang (2014) who argued that there are various barriers to effective communication of information throughout organisations and to external parties, including managerial philosophy. Some managers may be not willing to disseminate or share relevant information to their down-liners by implementing procedural and organisational blockages (Adu-Oppong & Agyin-Birikorang 2014). Others barriers could be centralised decision-making with one-way communication (Kheirandish et al. 2017); improper organisational structure with lack of clear accountabilities and delegated authority (Shonubi & Akintaro 2016); and employees lack professionalism and not paying attention to the information communicated by their superiors (Mittal 2018).

Finally, we find that monitoring influences the effectiveness of anti-money laundering control activities in preventing money laundering in the banking sector. Our finding is aligned with Mbilla and Nyeadi (2020) who argued that control activities ensure that the actions to mitigate risks are being conducted whereby monitoring assure that control activities are being carried out in a timely and proper manner so that any deficiencies identified can be rectified to improve these activities. Okab (2014) also re-iterated that banks must monitor anti-money laundering controls in place and rectify faults found in the controls to effectively curb money laundering.

## Conclusion

This research confirmed that anti-money laundering control activities can prevent money laundering in the Malaysian banking sector. It also proves that control environment and monitoring are able to strengthen the relationship between anti-money laundering control activities and money laundering prevention. However,

the findings are unable to confirm that risk assessment and information & communication can moderate the relationship between anti-money laundering control activities and money laundering prevention. Our research findings have many implications for literature development. This research fills the gaps of prior literature by investigating the effectiveness of anti-money laundering control activities to curb money laundering. We also expand the investigation by examining the interaction or moderating role of other internal control elements in enhancing the effectiveness of anti-money laundering control activities to prevent money laundering. Bank branch managers may use our findings as an input in implementing the effective prevention for money laundering activities. Branch managers may aware that implementing control environment and monitoring can enhance the effectiveness of banks' anti-money laundering control activities.

This research has certain limitations as the findings cannot be generalised to a larger population since this research only focused on banking institutions excluding other types of financial institutions and non-financial institutions who are also susceptible to money laundering. Bank branches operating outside the Klang Valley were also excluded from this research and the survey's respondents consisted of only branch managers. However, these limitations provide avenue for future researches by expanding the scope of research to include both financial and non-financial institutions, targeting other bank branches operating outside Klang Valley including the banks' headquarters. Future studies may include anti-money laundering officers, compliance officers, legal officers and other officers in the related field as respondents to the survey. The internal control and anti-money laundering control activities survey questionnaire used in this research is based on the version that was available during the data collection period in late 2018. This research utilized the internal control survey questionnaire as per the latest version of COSO framework released in 2013. Furthermore, the guidelines on anti-money laundering preventive measures for financial institutions remain the same in Malaysia between the data collection and the reporting period (Bank Negara Malaysia 2021). Hence, the data collected remain relevant for this research. However, it is recommended that future research to consider utilising the latest version of survey questionnaires available to keep up with any changes. Finally, this research reiterates that money laundering is a global issue faced by many countries around the world. Proper execution of internal control can definitely help in preventing money laundering to a greater extend.

## ENDNOTE

The results of the Kolmogorov-Smirnov and Shapiro-Wilk and Trimmed Mean Analysis were not tabulated for brevity.

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24

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