

BANKERS' DEMOGRAPHIC CHARACTERISTICS AND THEIR PERCEPTION ON THE RISK OF ASSET MISAPPROPRIATION: MALAYSIAN EVIDENCE

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Abstract

Fraud has been a world-wide problem for many years and it affects not only the victims, but also companies in a very broad spectrum. The purpose of this study is to develop a reliable and valid construct for risk of asset misappropriation and to assess the association between bankers' demographic factors and their perception on the risk of asset misappropriation. The fraud triangle theory that underlies this paper states that asset misappropriation is committed by individual due to three factors viz. opportunity, pressure, and rationalisation. Interviews and pilot study was conducted after constructing the research instrument to ensure validity of the measurement. The survey questionnaires were administered to 553 bankers out of which 334 were usable responses. This is a cross sectional study conducted on personnel of eight financial institutions in Malaysia in the year 2013. A final list of eleven items was found to be conclusive after testing for confirmatory factor analysis (chi square = 4.47; GFI = 0.93; CFI = 0.97; NFI = 0.96; TLI = 0.95; RMSEA = 0.10). Subsequently, a one-way ANOVA was employed to test for significant associations between the bankers' demographic characteristics and their perception on the risk of asset misappropriation. It was found that bankers' age ($p = 0.01$), working experience ($p = 0.01$), marital status ($p = 0.01$) and academic qualification ($p = 0.10$) had significant bearings on their perceptions of the risk of asset misappropriation within the financial institutions. This study recommends that the banking organizations focuses on improving its internal control system and communicate code of ethics to reduce the possibility of misconducts. Future research should focus on qualitative methodology and an in-depth review on fraud cases in Malaysia should be studied to provide more information to reduce the risk of losses in the banking sector.

Keywords: *accounting; auditing; asset, ethics; factor analysis; fraud and theft*

1.0 INTRODUCTION

The Auditing Standard (ASA 240) defines asset misappropriation as a type of fraud that is often perpetrated by employees in relatively small and immaterial amounts (Coram et al., 2008). Asset misappropriation consists of fraudulent disbursement, skimming revenues and payroll fraud (Wells, 2007). Based on the Global Economic Crime Survey (2009), asset misappropriation is the theft of assets, including monetary assets, cash, supplies and equipment by directors and employees for their own benefit. Fraud has been a world-wide problem for many years and it affects not only the victims, but also companies in a very broad spectrum. The Association of Certified Fraud Examiners (ACFE) found that

United States' organizations lost 7% of their annual revenues to fraud, which indicated a stunning loss of US\$994 billion (Ramamoorti & Dupree, 2010). KPMG (2009) reported an increase from 62% to 66% from year 2004 to 2008 regarding the opinion of respondents on the severity of fraud problems in Malaysia. In neighbouring countries such as India (86%), Thailand (71%) and Australia (55%), fraud is also regarded as a major problem based on the same survey. The ACFE (2012) in their latest study reported that asset misappropriation is getting from bad to worse. Skimming (203 cases), cash larceny (152 cases), billing (346 cases), expense reimbursement (201 cases), cheque tampering (165 cases), payroll (129 cases) and cash register disbursement (50 cases) were among the types of asset misappropriation reported in that global survey. Asset misappropriation has received limited attention in Malaysia, and to date for Malaysia discussed by Ahmad and Norhashim (2008) and Liew et al. (2011). The study of Ahmad and Norhashim (2008) performed an exploratory factor analysis in validating the asset misappropriation instrument. Thereupon, at the present time, there is a need for a study to extend knowledge by performing a confirmatory factor analysis on this respective construct.

2.0 RESEARCH OBJECTIVE

According to several surveys, asset misappropriation stands out as the most common type of occupational fraud. A total of 66% of organisations in Malaysia reported that there was a decline in the financial performance over the preceding 12 months due to the weaknesses in preventing and detecting fraudulent cases (PwC, 2009). The same survey also indicated that asset misappropriation remains the most common type of economic crime in Malaysia. Reviewing previous incidents, in 1975, the chairman misused the funds of Bank Rakyat amounting to RM7.5 million to finance a boxing match and was later charged for forgery and breach of trust (Ali, 1994; Jaffar, 2009). There have been other studies conducted to prove asset misappropriation as the most common type of fraud.

Theft of inventory (31%) is reported to be one of the most crucial forms of asset misappropriation in the study conducted by KPMG (2009). Consistent with the recent study, statistical evidence from one decade ago shows that inventory theft remains as one of the most common misappropriations in organisations (KPMG, 1998). Bringing home company's inventory for personal use though falsifying it by deception are some of the examples given. Hence, the study purpose can be constructed basing on the synthesis of these previous evidences. The instrument to measure asset misappropriation and the perception of the bankers will be able to help in decision making in the near future. The noble intention of this paper is to provide that information.

RO1: To develop a reliable and valid construct for risk of asset misappropriation

RO2: To assess the association between bankers' demographic characteristics and their perception on the risk of asset misappropriation.

3.0 REVIEW OF LITERATURE

The measurement of asset misappropriation was first developed by Hillison et al. (1999) through a thorough literature review. Later on, many studies had used the items mentioned in Hillison et al. (1999) to measure the risk of asset misappropriation. The study of Ahmad and Norhashim (2008) and Liew et al. (2011) in the Malaysian environment had somewhat referred to the measurement provided by Hillison et al. (1999). In a recent study by Agarwal and Medury (2014), the measurement items were again listed in their literature review. Although an exploratory factor analysis on this measurement was done by Ahmad and Hashim (2008), there is very little evidence on the utilisation of a confirmatory factor analysis to validate this construct. This study will contribute extensively to the field of fraud auditing by reconstructing and validating this research instrument. The items mentioned by previous studies (Agarwal and Medury, 2014; Hillison et al., 1999) are disclosed in Table 1.

**Table 1 Measurement of the risks of asset misappropriation
(Agarwal and Medury, 2014; Hillison et al., 1999)**

No.	Statement
A1	Received checks forged
A2	Recording goods not returned and stealing cash
A3	Cash sales shown as credit sales and cash stolen
A4	Discount on sales not given but shown in books and money siphoned off
A5	Credit sales collected but not recorded
A6	Writing off receivables as bad debts and stealing the cash received
A7	Collusion between buyer and seller to process refunds for goods not returned
A8	Stealing assets, stores and spares, raw material, and finished goods
A9	Sales not done but invoiced and goods stolen
A10	Selling waste and scrap material and pocketing receipts
A11	Including fictitious employees on pay roll and taking out their proceeds
A12	Embezzling payroll and other tax withholdings
A13	Encashing unused payroll checks
A14	Encashing unused dividend pay checks
A15	Unauthorized overtime shown and cash withdrawn
A16	Charging personal purchase to company by misusing purchase orders or organizational credit cards
A17	Diverting advances to personal use
A18	Special price or privilege to customers and suppliers against kickbacks
A19	Paying false invoices obtained through collusion with suppliers
A20	Altering bank deposits
A21	Stealing cash funds
A22	Bank account manipulations to give benefit to one at the cost of the other and taking kickbacks.

The statistical analysis of Liew et al. (2011) showed some of the common causes of white-collar crime in Malaysia using the agency and self control theories. With a sample size of 300, using the convenience sampling methodology, a one-way analysis of variance (ANOVA) was performed in their study. They found that certain demographic factors (age, marital status, education level, and occupation) have influenced the respondents' views on the common causes of white collar crime. This present study will attempt to narrow the analysis gap of Liew et al. (2011) by using the fraud triangle theory (Cressey, 1953) as the underpinning theory and asset misappropriation as the dependent variable.

The fraud triangle theory that underlies this paper states that asset misappropriation is committed by individual due to three factors viz. opportunity, pressure, and rationalisation. Furthermore, improper internal control system, lack of usage of technology tools, and ineffective whistleblowing processes provide ample opportunity for fraud to take place. In addition, professional scepticism and a questioning mind are needed from fraud auditors and managers to assess the risks of fraud occurrence which may arise from personal financial pressure of potential fraud perpetrators. Moreover, acceptable codes of ethics are needed and they should be communicated to every person in an organisation to ensure that these people do not use rationalisation as a reason to commit asset fraud.

4.0 RESEARCH METHODOLOGY

As could be seen below in Figure 1, a literature review was first done to develop the initial research questionnaire. Later, the questionnaire was pretested in a series of interviews with six experts (vice president of risk management department, government auditor, internal auditor, operational auditor, lecturer and senior lecturer in auditing). The interviews were carefully transcribed and a thematic analysis was performed to record the opinions obtained from the interviews. This led to some changes made in the research questionnaire after a focus group discussion with two academicians who were content experts. The research instrument was then pilot tested using quantitative methodology.

Out of 55 questionnaires given to the bankers, only 40 were usable for the pilot analysis. Preliminary assessments on validity and reliability were performed. From the analysis, the research questionnaire was further modified. The modified research questionnaire was then subjected to another scrutiny by way of an independent external reviews by five reviewers deemed to be specialists in the field of economics, finance, statistics, fraud auditing and accounting to solicit their independent opinions. The five reviewers were a university professor, an associate professor, a certified statistician and two other senior academics with PhD qualifications. The survey questionnaire was subjected to further fine tuning. The final research questionnaire was then ready for administration. The survey questionnaires were administered to 553 bankers out of which 334 were usable responses. The computation of sample size was done according to the recommendations provided by previous studies (Bartlett et al., 2001; Krejcie and Morgan, 1970).

Face to face data collection procedure with the help of nineteen data collection assistants was undertaken to improve the response rate which turned out to be sixty percent. The data collected were cleaned and issues on reliability, validity and normality of distribution were resolved. The summary of methodology is provided below in Figure 1. The first draft of the instrument showed 22 items, but after going through a rigorous data cleaning and validating procedure, the CFA is only left with 11 items as could be seen in Figure 2. These eleven items are used to measure asset misappropriation for the ANOVA test is treated as one construct. The mean figure has been used in SPSS to represent asset misappropriation. Therefore, the whole construct is either significant or not. Individual items were not analysed against the demographic variables. This is consistent with the research objective of the study. Another reason for using mean to represent the whole variable is that all data values are used in the analysis and more importantly, they can be algebraically defined.

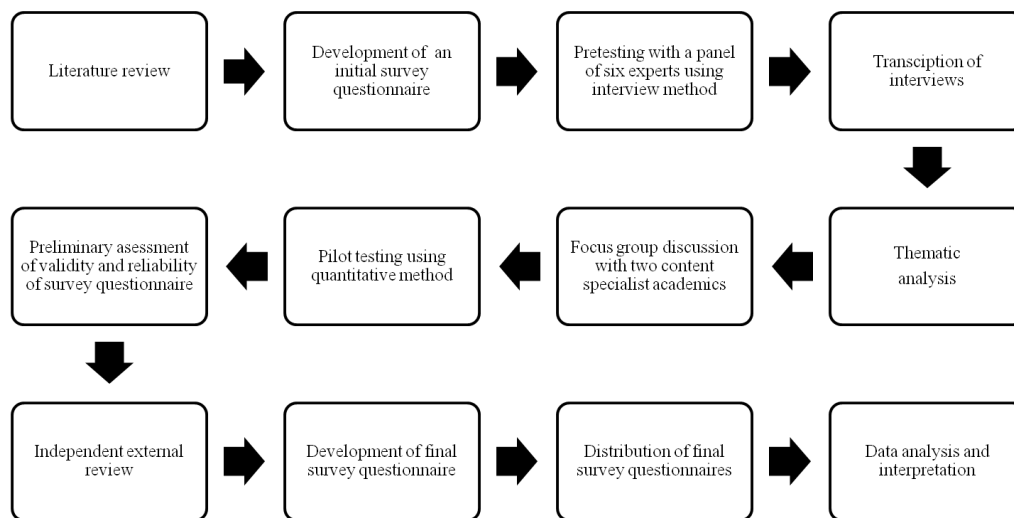


Figure 1 Development of research instrument

5.0 RESULT AND DISCUSSION

5.1 Findings from the First Research Objective

Structural equation modelling (SEM) has been used by a number of researchers. There are many applications embedded within the model, one of which is the confirmatory factor analysis (CFA). This study has confirmed the validity and reliability of the risk of asset misappropriation construct using the CFA mechanism. Figure 2 below describes the structural equation model developed in this study. Based on this model, the indices for the CFA were determined. The indices are illustrated in Table 2.

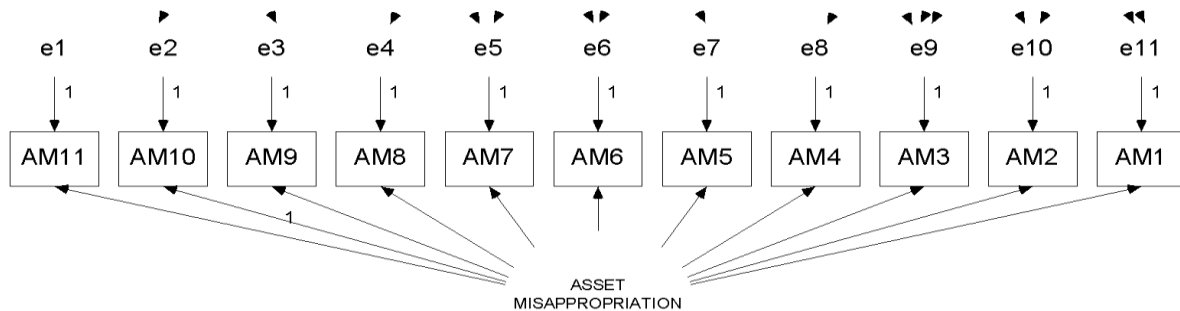


Figure 2 The structural equation model for the risk of asset misappropriation construct

Table 2 Confirmatory factor analysis indices for the risk of asset misappropriation construct

Index	Observed Index	Recommended Indices
Chi square	4.47	Below 5.00
Goodness of fit index (GFI)	0.93	Above 0.90
Normed fit index (NFI)	0.96	Above 0.90
Tucker Lewis index (TLI)	0.95	Above 0.80
Comparative fit index (CFI)	0.97	Above 0.90
Root mean square error of approximation (RMSEA)	0.10	Below 0.10

As evident from Table 2 above, the confirmatory factor analysis (**chi square = 4.47; GFI = 0.93; CFI = 0.97; NFI = 0.96; TLI = 0.95; RMSEA = 0.10**) fall within the suggested ranges by previous researchers (Chinda and Mohamad, 2008; Hooper et al., 2008; Singh, 2009; Wheaton et al, 1977). The closest confirmatory factor analysis results that could be compared to the risk of asset misappropriation of this study was provided by Kung and Huang (2013) who reported their findings (RMR = 0.046, GFI = 0.953, RMSEA = 0.067). Illegal activities and dubious behaviours were measured in their respective research. The indices obtained in this present study are almost identical to the findings of Kung and Huang (2013).

Assessment of normality for the items representing the risk of asset misappropriation in this study indicates robust results as the figures are within the suggested ranges proposed by previous researchers (Lei and Lomax, 2005; Weinberg and Abramowitz, 2002). For a normal distribution, the Kurtosis should be between 0 and 3 (Lei and Lomax, 2005) and skewness should be between -2 to +2 (Weinberg and Abramowitz, 2002). Convergent validity is measured by examining the composite reliability and the average variance extracted from the measures. The measures for reliability in this study are above 0.80 as recommended by Zikmund et al. (2010) and the average variance extracted is above 0.50. The observed results of this study (composite reliability = 0.96; average variance extracted = 0.70) prove that the convergent validity requirements of the instrument are met. Moreover, the internal consistency (Cronbach alpha = 0.96) is also assured (Zikmund et al., 2010). Collectively, the aforementioned indices suggest that the construct for the risk of asset misappropriation which was proposed by previous studies (Agarwal and Medury, 2014; Hillison et al., 1999) is normal, valid and reliable. The discussion above satisfactorily shows that the first objective of this study has been achieved.

5.2 Findings from the Second Research Objective

Table 3: One way ANOVA between bankers' demographics and the risk of asset misappropriation in the banking sector

Demographic	ANOVA	Welch	Brown-Forsythe
Age	0.01*	0.01*	0.01*
Working experience	0.01*	0.01*	0.01*
Gender	0.89	0.89	0.89
Marital status	0.01*	0.01*	0.01*
Position	0.58	0.41	0.56
Academic qualification	0.10*	0.01*	0.01*
Working department	0.49	0.44	0.48

* Significant p-value

This study has adopted the one way analysis of variance (ANOVA) to satisfy the second research objective, which is to assess the association between the studied bankers' demographics and the risk of asset misappropriation in the Malaysian banking sector. Table 3 depicts the one way ANOVA statistical results. When studying independent variables against continues variables, ANOVA test is recommended. All the independent variables were re-coded accordingly. The independent variable (asset misappropriation) was treated as a continuous variable. The analysis of mean was conducted prior to conducting this evaluation. The demographic variables for this study can be observed in Table 4 below.

Table 4: Demographic profile of the respondents

Demographic Variables	Frequency (n=334)	Valid percentage (%)
Gender:		
Male	167	50.0
Female	167	50.0

Age:		
18-25 years old	80	24.0
26-30 years old	94	28.1
31-35 years old	62	18.6
36-40 years old	49	14.7
41-45 years old	31	9.3
46-55 years old	18	5.4
Status:		
Single	156	46.7
Engaged	16	4.8
Married	149	44.6
Divorced	10	3.0
Widowed	3	0.9
Position:		
Lower level management	99	29.6
Middle level management	164	49.1
Top/Senior management	37	11.1
Professional/Consultant	29	8.7
Others	5	1.5
Qualification:		
Certificate at tertiary level	35	10.5
Diploma	103	30.8
Bachelors Degree	149	44.6
Masters Degree / Masters in Philosophy	29	8.7
Doctoral Degree / PhD	4	1.2
Professional Qualifications	8	2.4
Others	6	1.8
Department:		
Operations	183	54.8
Internal audit	44	13.2
Combination of operations and internal audit	18	5.4
Risk management/compliance	65	19.5
Others	24	7.2
Working Experience:		
1-5 years of work experience	147	44.0
6-10 years of work experience	83	24.9
11-15 years of work experience	41	12.3
16-20 years of work experience	46	13.8
21-25 years of work experience	13	3.9
26-30 years of work experience	4	1.2

The bivariate tests are run separately between the IVs and DV. Here, the dependent variable is continuous while in the independents are categorical. Thus, ANOVA is the appropriate form of analysis. It is noted that gender has two independent groups and the other demographic variables (age and qualification) consist of more than three independent groups. ANOVA can be used to test proposed relationship and predicted correlation between variables. This is a form of bivariate test and the main objective of a bivariate test is to test the hypotheses and association. Although one way ANOVA is used to test the differences between groups, it also functions to show correlation between groups. According to Newsom (2013), correlation is a statistic that describes association between two variables.

In this paper, the significant differences of the groups are discussed and that is why the Post Hoc test (Scheffe's method) was conducted before discussing the differences between the groups. One-way

analysis of variance (ANOVA) is conducted to test whether or not the difference in the respondents' demographics influence the outcome of their perception towards the common indicators of asset misappropriation as stated in the listed questionnaire. From the one-way ANOVA test results as depicted in Table 3, it is apparent that only the bankers' age, working experience, marital status and academic qualification have influenced their perception of the risk of asset misappropriation in the Malaysian banking sector. There are significant differences in these four demographic variables when tested against asset misappropriation taken as a mean.

Complementary to the one-way ANOVA results, the Welch and Brown-Forsythe test results are also significant for age, working experience, marital status and academic qualification, further strengthening the argument in favour of the associations. The other demographic characteristics tested such as gender, position and working department do not influence the bankers' perception on the risk of asset misappropriation in their organisations. The findings of this study are very similar to that of Liew et al. (2011) except that their study had adopted a different instrument measuring white collar crimes. From an additional post hoc assessment, several conclusions can be made to further explain the results of this ANOVA test (Table 3).

People who are in their early 20s believe that the risk of asset misappropriation is slightly prevalent in their organisations whereas people in their late 30s view it the other way around. Secondly, people with diploma and degree qualifications as compared to professional qualifications provide contrasting opinions. The findings provide evidence that the bankers with diploma and degree qualifications are fairly neutral in agreeing to the presence of the risk of asset misappropriation in their organisations. In other words, they are neither in agreement nor in disagreement. Thirdly, there is a significant difference between the views of married bankers and single bankers.

The seven point Likert scale in the measurement of the items within the construct indicates that the higher the mean, the more the respondents agree that there is a perceived risk of asset misappropriation within their organisations. Married bankers' perception (mean = 2.56) and single bankers' perception (mean = 3.04) illustrate that married bankers tend to disagree more than their single counterparts on the presence of the risk of asset misappropriation in the organisations they are working in. It is also noted that the mean score for the perception of single bankers is closed to neutral. Inference can be made here that single bankers are more skeptical than married bankers. It is not known why marital status influences such a perception. Finally, the lesser the bankers' working experience, the more they believe that the risk of asset misappropriation exists in their organisations. This means that young bankers see fraud as a prevalent risk as compared to bankers with more than twenty years' of working experience. With these findings, the second research objective has been duly met. Since age, working experience, marital status and academic qualification can affect the perception on asset misappropriation; banks need to take actions to ensure that the risk is prevented.

One way to prevent fraud is by having proper internal control procedures. It could be concluded that internal procedures for documentation and authorisation represent internal control system and are widely used in the Malaysian banking environment which could reduce the misappropriations of assets. In the analysis of Somers & Casal (2011), 82% of corporate asset are reported embezzled and 26% of the inventory manipulation goes unreported. It is within the purview of the internal control system to merit control over cash, bank and inventory balances.

The control over procurement, expenses, and payroll are also necessary to prevent misconducts. Once the control is tightened, regardless of the age and experience of the potential embezzler, the opportunity of fraud is immediately reduced. As discussed in the literature review of Hillison et al. (1999), the most cost-effective way to detect employee fraud is by using a hotline or in other words whistleblowing. The

assistance of intentions to whistleblow is able to benefit bankers in providing help by reporting asset misappropriation such as alteration of credit cards, cheque forgery, manipulation of payroll, overloading the expense account, and stealing cash funds and inventories. All these could be detected by whistleblowers if they observe the red flags such as missing documents, cash shortage, unusual write offs, and excessive voids. Even though academic qualification is significant towards asset misappropriation, it is presumed that 'intelligent' people can be controlled if whistleblowing mechanism is implemented correctly. Most importantly, bankers are aware of changes in behaviour patterns of the perpetrators by observing the red flags of asset misappropriation such as observing abnormal stock shrinkage, awarding tenders to unapproved vendors, excessive discounts and voids, refusal to take mandatory leave, excessive gambling and drinking problem, discrepancies in the reconciliation analysis, and finally carrying too much cash all the time.

6.0 CONCLUSION AND RECOMMENDATIONS

There is a need to conduct a qualitative study to ascertain the underlying causes of the findings in this study. This will further strengthen the knowledge in this area. A qualitative study can support concur the findings and can provide detailed reasons for why asset misappropriation problem still occur in the banking sector. Thus, this study recommends the fraud cases of Malaysian companies to be reviewed in depth by future researchers based on the model recommended in this study to serve as a basis of reference. Another suggestion is that asset misappropriation is studied against internal control system. Hiring proficient auditors, developing good documentation system and enforcing mandatory leave is a must for the banking sector. Proficient auditors have better ability in mitigating controls and evaluating fraud incentives and opportunities. Future research may offer further insights into this opportunity. This will then help banks to reduce inspection costs and increase their effectiveness. In scrutiny of the above explanation, greater surveillance and managerial diligence in the internal control system in operations are needed to decrease employee fraud (Alstete, 2006).

This study can be replicated in full or partially in different industry settings and environments. More studies in this area will provide useful comparisons for a more advanced assessment on the issue at stake. Future researchers may adopt the validated instrument developed in this study to propagate further investigations. Perhaps the relationship between the risk of asset misappropriation and a host of other factors, such as whistleblowing, corporate governance and culture could be examined using the instrument developed in this study. Table 5 below enumerates the measurement of the risk of asset misappropriation as one of the outcomes of this study. This new instrument improves the one proposed by previous researchers as shown in Table 1.

All managers must ensure that continuous trainings, retreats, workshops, conferences are well implemented and rewards for ethical behaviour are given to reduce the possibility of employees stealing cash funds and altering bank deposits. It is high time that companies study their population and demographic characteristics to minimize the risk of fraud. The continuous awareness campaign on the importance of complying with the code of ethics must be emphasised to reduce the conspiracy between buyers and sellers in the banking sector committing procurement fraud. Finally, banking organisations must also find a way to look for red flags that can trigger the possibility of fraudulent behaviour. This can eventually reduce the losses and improve the profit margin of the organisation.

Table 5: Measurement of the Risk of Asset Misappropriation

No.	Statement
AM1	Stealing cash funds processed or on hand is common in the banking sector.
AM2	Stealing the cash received without any recording is common in the banking sector.
AM3	Stealing a portion of the cash received by understating sales is common in the banking sector.
AM4	Altering bank deposits is common in the banking sector.
AM5	Writing off receivables and stealing the cash received from the written off account is common in the banking sector.
AM6	Conspiracy between buyers and sellers to process refunds for goods not returned is common in the banking sector.
AM7	Stealing merchandise, tools, supplies, and other assets are common in the banking sector.
AM8	Selling waste and scrap materials and pocketing the proceeds is common in the banking sector.
AM9	Setting up non-existing employees (phantom employees) on the payroll records and taking their pay cheques is common in the banking sector.
AM10	Manipulating payroll records to divert wages, payroll taxes, or pay cheques is common in the banking sector.
AM11	Charging personal purchases to the bank through misuse of the bank's credit cards is common in the banking sector.

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