

Digitization of Evidence and Life Insurance Fraud Case Clearance Among Life Insurers in Kenya

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Abstract

The purpose of this study was to examine the relationship between digitization of evidence and how they influence insurance fraud cases clearance among Life Insurance Companies in Kenya. The study was anchored on the Adaptive Structuration Theory. The theory has never been used extensively to understand fraud case clearance hence this study made a significant theoretical contribution by using the theory to understand fraud case clearance. A descriptive survey design that utilizes quantitative research was adopted to investigate the variables. Primary data was collected using structured questionnaires while secondary data was collected from the official fraud data for the years 2018 and 2019 from the 21 life insurance companies with their head office in Nairobi. Data were analyzed using the latest Statistical Package for the Social Sciences (SPSS) version V28. Descriptive statistics namely frequencies and percentages were conducted to understand the rate of fraud case clearance. Inferential statistics such as the Spearman correlation coefficient, ρ , was also applied to test the relationships between the independent and dependent variable. The findings were presented in figures and tables from which conclusions were drawn. The findings revealed a clearance rate of 75.68%. The results of correlation analysis from various components the digitization of evidence yielded a mix of positive and negative correlation coefficients. This study thus recommends the use of digital systems in fraud investigation, as well as programs that provides professional training to investigators on forensic evidence gathering and analysis. Future research that use both quantitative and qualitative methods to investigate the relationship between digitization of evidence, and fraud case clearance are recommended.

Key words: *Digitization of evidence, life insurance, fraud, case clearance*

INTRODUCTION

Cases of insurance fraud are becoming more prevalent. The average fraud cost per U.S family is estimated to be between \$400 and \$700 per year over five years between 2013 and 2017 (Insurance Information Institute, 2020). Further, fraud costs the combined insurance industry billions of South African Rands yearly (Association for Savings and Investment South Africa, 2021).

The Uganda Insurance Fraud Investigation Unit (IRAU) investigated suspicious fraud reports totaling UGX.11, 230,175,000 (Insurance Regulatory Authority of Uganda, 2021). They also investigated suspicious fraud reports of UGX. 4,020,625,000/= in 2020, as opposed to the UGX 5,521,556,000 in 2019 (Insurance Regulatory Authority of Uganda, 2020). The Unit also recorded cases totaling UGX 2,490,032,733= from insurance companies, intermediaries, and members of the general public (Insurance Regulatory Authority of Uganda, 2018).

In Kenya, 106 insurance fraud cases were reported in 2015, up from 87 in 2014 (Insurance Regulatory Authority, 2016). The Insurance Fraud Investigation Unit (IFIU) also documented a 60 percent rise in recorded insurance fraud cases in the first quarter of 2016 compared to 2015 (Insurance Regulatory Authority, 2016). The Unit also reported 91 cases of insurance fraud in 2019, compared to 87 similar occurrences in 2018. Theft by insurance agents and fraudulent claims in life insurance companies accounted for 52% of all fraud cases in 2019 (Insurance Regulatory Authority, 2016). The increase in these fraud cases can contribute to inefficiency in case clearance among life insurance companies in Kenya.

There is little literature that addresses the relationship of digitization of evidence in an insurance fraud case context (Carter & Carter, 2016; Mancik et al., 2018; Yuriy & Tatiana, 2019). The studies have not established the relationship between the digitization of evidence and fraud case clearance. However, literature on cases clearance in other crime typologies such as homicide, rape, and burglary is plentiful, and a positive correlation between the digitization of evidence and fraud cases clearance has been exhibited (Baskin and Somers, 2020; Ribaux & Souvignet, 2020). A review of the existing literature found that digitization needed ethical consideration among the staff to reduce fraud cases (Zarif, 2021).

This study sought to examine the extent of fraud case clearance using the official fraud data for 2018 and 2019 to reveal the fraud case clearance rate. The study also sought to fill the research gap by understanding the relationship between the digitization of evidence and how they influence fraud case clearance among life insurance companies in Kenya.

LITERATURE REVIEW

Rate of case clearance

Different crime clearance rate variability is the perception that cases are more likely to be cleared differently (FBI, 2020; Sakiyama et al., 2010a). In Nevada, clearance rates are higher for violent crimes (43%) than for property crimes (21%) (Sakiyama et al., 2010b). The murder clearance rate (80%) is the highest in the USA, and motor vehicle theft (7%) is the lowest. As such, it is probable to presume that fraud clearance rates are likely different from other crime types. Therefore, an analysis should examine the extent of fraud case clearance among life insurance companies.

The available studies have not examined the clearance rate of life insurance fraud cases. The existing literature has focused on homicide, rape, and burglary case clearance rates, but efforts to determine the rate of fraud case clearance are rare. Even in cases where scholars have documented case closure, they have only focused on crimes investigated by law enforcement agencies (The Federal Bureau of Investigations (FBI), 2020). This study advanced the knowledge of life insurance fraud by examining the clearance rates for life insurance fraud cases in Kenya and evaluating whether they were significantly higher or lower when compared among insurance companies as well as when compared to other rates of cases clearance of various typologies for example, violent at 43% and property crimes at 21%.

Digitization of evidence and fraud cases clearance

Digitization is the high-tech development that involves creating, exchanging, and sharing significant volumes of data (Audrin, 2022). Digitization involves innovations and organizational change dated to 2010 (Brynjolfsson & McAfee, 2011). Digitization relates to encoding data and transforming a frequency into a digital signal. Therefore, digitization denotes putting into digits. Digitization deals with data management and conserving physical documents digitally (Arntz, Gregory, & Zierahn, 2016).

Literature does not define digitization properly though scholars link various types of digital changes such as automation, advanced robotics, augmented reality, Big Data, Cloud Computing, and social networks to digitization (Arntz, Gregory, & Zierahn, 2016; Autor, 2015; Brynjolfsson & McAfee, 2011; De Mauro, Greco, & Grimaldi, 2016; Armbrust et al., 2010; Qian, 2009; McAfee, 2009). In other words, digitization is an all-encompassing word for scientific change and broad use of data.

As emphasized, the reality of digitization is centered on electronic data, and organization operations are associated with digitization. The above notion is not an exhaustive list of what digitization involves but offers a demonstration of the extent of changes in business models, organizational structure, and career transformation (Arntz, Gregory, & Zierahn, 2016; Brynjolfsson & McAfee, 2011). Digitization is transforming the business model of insurers as well as their fraud investigations by boosting evidence collection, processing, and analysis (Bountouri, 2017). Transitioning from traditional paper-based identity verification to embracing digitization improves promptness associated with high fraud cases clearance rate.

According to Bountouri (2017), investigation teams need to create, exchange, and share significant volumes of data by harnessing the power of digitization evidence. They should work smarter in collecting, processing, and analyzing evidence to enable high case clearance within the confines of often scarce resources. Progressive financial institutions are keenly considering innovative techniques for this achievement. One of the techniques is by digitization of evidence and automation of processes. Given the large volumes of data, digitization is a valuable solution to create, exchange, and share data making materials accessible, searchable, and retrievable through the Web (Strutynska, 2019).

Examples of digitized evidence in an insurance institution include contract documents, letters, and e-mails or information in personal computers, computer files, and digital financial records (Audrin, 2022). Insurance companies should digitize processes that would provide the ability to swiftly respond when fraud is detected (Gathu, 2018). This study focused on how digital technologies impact fraud case clearance. Insurers are required to contemplate new data solutions and workflow streamlining. The ability to create, exchange, and share significant volumes of data is critical to case clearance, which is a goal of the investigation teams.

Audrin (2022) suggests that digitization is fundamental in organization processes. With a criminological practice lens, it would also be worth investigating the interactions between humans and technology. Based on the previous literature, this study suggested that digitization shapes fraud case clearance (Brynjolfsson & McAfee, 2011). The study specifically investigated how innovative ways of digitization, digitized evidence, and digitized investigation workflow is

associated with fraud cases clearance. Thus, the study had a more complete understanding of the relationship between digitization and fraud case clearance.

Previous studies hail digital technologies for their capacity for storage and the ease of disseminating critical evidence safely (Strutynska, 2019; Adner et al., 2019). Digitized records enable collection, review, and discovery of evidence, a significant role in achieving fraud case clearance. Previous studies also show that digitization improves the tracking and control of active files and content (Adner et al., 2019). It is also easier to connect to different systems. Therefore, digitized evidence may increase fraud case clearance.

Theoretical Framework

Digitization of evidence and fraud case clearance have a theoretical connection. This study was anchored on adaptive structuration theory to understand the people, processes, technology, and structures facilitating their interaction (Audrin, 2022). The theory postulates that employees affect results and deliberately adopt procedures and resources to accomplish objectives such as fraud case clearance (Turner et al., 2019). Technology, therefore, is essential for productivity, efficiency, and satisfaction in organizations. Failure to achieve desired objectives reflects inadequacy in the technology, its implementation, or its delivery to the organization. The study of technology is an opportunity for success, and social practices moderate its effect on behavior. Adaptive structuration theory suggests that structures in technology in action are constantly intertwined and influence each other (Audrin, 2022).

This theory is relevant to this study because it was used to comprehend the role of digitization of evidence in case clearance (Daltro et al., 2020). It provides a people, process, and technology (PPT) framework that examines ways to streamline investigations, digital evidence collection, and analysis. The theory recognized the advanced technologies and interactions with processes and people to ensure efficiency in fraud case clearance. The adaptive structuration theory also provided an understanding of new forms of technology to digitized evidence (Daltro et al., 2020).

MATERIALS AND METHODS

This study adopted a descriptive survey design that involves quantitative approaches in research. The quantitative research approach characteristically reduces data to means, medians, correlations, and other summarizing statistics (Leedy & Ormrod, 2014). The target population was the head of investigations departments in all 21 life insurers in Kenya. The unit of analysis was a company, and units of observation were the head of the investigation and fraud records. Only 11 insurers completed and returned the questionnaires from the 21 life insurance companies.

Structured questionnaires collected primary data on the independent variable (digitization of evidence) by the head of investigation departments (and equivalent departments). The questionnaires collected data on the perceptions of digitization. The digitization of evidence utilized a 5-point Likert scale of the extent of agreement (1- strongly disagree, 2- disagree, 3- neutral, 4- agree, and 5- strongly agree).

Secondary data on insurance fraud cases (dependent variable) was from the official fraud data for 2018 and 2019. The data from official records of the reported fraud incidences of the 21 life insurers in Kenya were for 2018 and 2019. The case clearance was as indicated below.

$$\text{Cases clearance (\%)} = (A + B) / (C + D) * 100$$

Where;

A = Cases solved within the period

B= Cases closed or placed in suspended status in the period

C = Cases opened within the period

D= Cases reopened within the period

The Spearman correlation coefficient tested the relationships at both variable and sub-variable levels.

RESULTS AND DISCUSSION

Rate of Life Insurance Fraud Case Clearance

The case clearance analysis comprised computing the sum totals of the cases that were opened; re-opened; solved; cases disposition; and closed cases. This information is summarized in Table 1.

Table 1 Summary of Categories

Category of the case	Quarter 1	Quarter2	Quarter3	Quarter4	Total
Cases Opened					
2018	376	164	268	230	1,038
2019	398	579	382	188	1,547
Cases Reopened					
2018	197	35	15	25	272
2019	156	14	4	2	176
Cases Solved					
2018	289	165	223	226	903
2019	232	421	360	164	1,177
Cases Disposition					
2018	195	35	15	26	271
2019	153	13	4	1	171
Cases Closed					
2018	93	67	95	90	345
2019	103	121	107	107	438
Total	2,192	1,614	1,473	1,059	6,338

The findings in Table 1 suggest that the majority of the cases were handled in the first quarter while the least was registered in the last quarter. Further, a computation of fraud case clearance

rate across life insurance companies was conducted based on the sample of $n = 11$ respondents. This information was summarized in Table 2.

Table 2: Analysis of Life Insurance Fraud Case Clearance Rate

Clearance rate	Frequency	Percent	Valid Percent	Cumulative Percent
45.83	1	5.9	9.1	9.1
61.70	1	5.9	9.1	18.2
64.00	1	5.9	9.1	27.3
70.34	1	5.9	9.1	36.4
75.60	1	5.9	9.1	45.5
80.19	1	5.9	9.1	54.5
86.40	1	5.9	9.1	63.6
92.34	1	5.9	9.1	72.7
93.69	1	5.9	9.1	81.8
96.45	1	5.9	9.1	90.9
100.00	1	5.9	9.1	100.0
Total	11	64.7	100.0	

The findings in Table 2 revealed the highest clearance rate of 100% and the lowest of 45.83%. The mean values computed from case clearance rate computation were summarized in Table 3.

Table 3: Mean Case Clearance Rate

Quarter	2018	2019	Overall
Q1	66.67%	60.46%	63.57%
Q2	73.45%	75.92%	74.69%
Q3	81.66%	77.31%	79.49%
Q4	91.45%	78.52%	84.99%
Overall	78.31%	73.05%	75.68%

The findings in Table 3 discovered a mean rate of fraud case clearance of 75.68% for the life insurance companies in Kenya. From the study, the rate of fraud case clearance appears to be higher compared to rates of case clearance in violent and property crimes. Sakiyama et al (2010b) found that the clearance rates for violent and property crimes was (43%) and (21%), respectively.

Relationship between Digitization of evidence and Fraud Case Clearance

The study sought to examine the relationship between digitization of evidence and fraud cases clearance rate. Correlation analysis was conducted to determine the nature of the relationship between digitization of evidence and fraud case clearance rate. The findings were summarized in Table 4.

Table 4: Correlation analysis between Digitization of Evidence and Fraud Case Clearance

		Top management commitment	Work experience	Digitization of evidence	Case clearance
Digitization	Correlation	.332	.183	1.000	-.434
	Coefficient				
	Sig. (2-tailed)	.319	.590	.	.182
	N	11	11	11	11
Case clearance	Correlation	.285	.037	-.434	1.000
	Coefficient				
	Sig. (2-tailed)	.395	.915	.182	.
	N	11	11	11	11

Note. Spearman's rho(ρ) coefficient was used in the computation of the correlations.

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

$N = 11$

The results indicated that the digitization of evidence exhibited a negative Spearman correlation coefficient. However, this should be interpreted with caution because the correlation coefficient

was not statistically significant at the 5% level ($r(9) = -.434, p > .05$), thus limiting its generalizability to a larger population.

Further, a Spearman correlation analysis ascertained the level of associations between all six (6) constructs of digitization of evidence and fraud case clearance rate. Table 5 summarize the findings.

Table 5: Correlation between Digitization of Evidence and Fraud Case Clearance Rate

Sub variable	Spearman Correlation	Sig. (2-tailed)
Digital systems are useful for documentation related to fraud investigation	0.7979	0.0057
Digital investigation systems enable easy retrieval and sharing of documents among investigators	0.4181	0.2292
The investigators depend on computer-assisted data analysis to collect evidence of fraud.	0.5790	0.0795
Digital technologies are useful in streamlining investigation workflow and disseminating evidence safely	-0.2479	0.4898
The digital ensures timely follow-up on investigation status.	-0.058	0.8735
Innovative ways of digitization are highly embraced in our organization.	0.4045	0.2462

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

$N = 11$

The results above depict a mix of both negative and positive correlation coefficients. Spearman correlation coefficient associated with the notion that digital system is of use for documentation

related to fraud investigation was the only sub-variable that was statistically significant at a 5% level($r(9) = .7979, p < .05$).

Discussion of findings on the relationship between digitization of evidence and life insurance fraud case clearance rate

The findings suggest that the idea that digital systems are of use in the documentation of fraud investigation was statistically significantly related to fraud case clearance rate in the sampled insurance companies. Furthermore, the findings reveal a mix of both positive and negative correlation coefficients with case clearance rate. Accordingly, the nexus between these two constructs corroborates the postulations of the Adaptive Structuration Theory in this study which seeks to understand the people, processes, and technology and the structures that emerge in human action interact with processes and technology. AST provides a general approach to organizations' construct and analysis of their differences.

Accordingly, the positive correlation coefficient reaffirmed what was noted earlier in the empirical study by Bountouri (2017), arguing that digitization can help improve case clearance outcomes. On the flip side, one of the limitations of the present study is the use of subjective measures such as the respondents' perceptions. Therefore, it was difficult to determine bias by the respondents.

CONCLUSIONS AND RECOMMENDATIONS

The study examined the relationship between the digitization of evidence and fraud case clearance rate. The findings revealed both positive and negative correlation coefficients with case clearance rate. Based on the study findings, digital systems are beneficial in fraud investigation. Digitization is a valuable solution for creating and sharing data. Given the organization's large volumes of data, digitization can ensure that the data is accessible, searchable, retrievable, and secure. Investigation teams can conveniently collect, process and analyze evidence to enable high case clearance within the confines of often scarce resources.

The study examined the relationship between the digitization of evidence and fraud case clearance among life insurers in Kenya. Based on the findings, the study recommends that future research may employ quantitative and qualitative methods to investigate the relationship between digitization and fraud case clearance. Further, insurance companies can deploy digital systems in investigating life insurance fraud. A study can also determine the contributions of digitization of evidence and other correlates to the fraud cases clearance rate.

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