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THE SECURITY TRADE VOLUMES  
OF LISTED COMPANIES IN KENYA

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## EARNINGS ANNOUNCEMENTS AND THE SECURITY TRADE VOLUMES OF LISTED COMPANIES IN KENYA

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### Abstract

**Purpose:** This study investigated the decline in the NSE N20, Kenya share index by examining the effects of Earnings announcements on the security trade volumes of companies listed on the NSE, Kenya, from 2013 to 2017. The study formulated a hypothesis that Earnings announcements did not significantly affect the security trade volumes of companies listed on the NSE, Kenya, applied Signaling theory, efficient market hypothesis, and Market expectation theory.

**Methodology:** The study used the event study methodology, a mixed research design, and the ANOVA technique from 25 listed companies, collected secondary data using schedules and primary data using questionnaires.

**Findings:** The study found the effect of Earnings announcements on the trade volumes to be insignificant. Hence, it concluded that earnings announcements did not affect the security trade volumes of companies listed on NSE, Kenya.

**Unique Contribution to Practice and Policy:** The finding of this study will provide the market players with a better understanding of how Earnings announcements affect the security trade volumes; provide the policymakers with a basis of designing policies, regulating and controlling financial markets, complement existing studies in this area and strengthen the foundation for further research.

**Key words:** *earnings announcement, security trade volumes, security prices*

## 1. Introduction

Security trade volume is an economic activity that indicates the strength of the security exchange, provides a technical indication of the overall activities of securities in an exchange market, shows the worthiness of the investors' interest in a firm, and measures the number of securities traded in a period. Tachiwou (2010) found that security market development was an essential gradient for growth. Cia, Tao and Yan (2020) found market trade volumes changes and economic uncertainty to be stronger during trade frictions.

An increase in security trade volume strengthens the exchange hence healthy while declining security trade volume weakens the exchange, thus unhealthy. Further, an increased number of securities traded in an exchange signals investors' confidence in the company's securities, leading to increased demand and price, hence the firm's value and investors' interest. On the contrary, decreased trade volumes signal the company's poor performance, hence the firm value and investors' interest. A firm's value is the number of securities of the firm at the market price.

Security trade volume is also an essential economic activity because it confirms trend directions. According to Steven (2020), investors use trading volume to confirm the existence, or a continuation, of a trend or trend reversal, identify momentum and signal when an investor should take profits and sell a security due to low activity. Therefore, when a security price and a security trade volume increase, they indicate the buying interest in the security, which shows that some fundamental or psychological factors drive the security price. An increase in security price and a decrease in trade volume indicate traders' indecision to buy the security. Hence, there are no fundamental or psychological factors that influence the broader market participants. A decrease in the security price and an increase in trade volume show that some fundamental or psychological factors drive the security price, thus indicating the stock's selling interest.

In theory, security trade volume influences consumers and inspires business confidence, hence affects the economy and value of a firm through its market capitalization. Andrew (2010) argues that security trade volume is an economic interaction in financial markets among investors. Underlying economic forces drive security trade volumes and prices and thus convey important information about the workings of the market. Steven (2020) states that trading volume can legitimize a security's price action, which can then aid investors in their decision to either buy or sell that security.

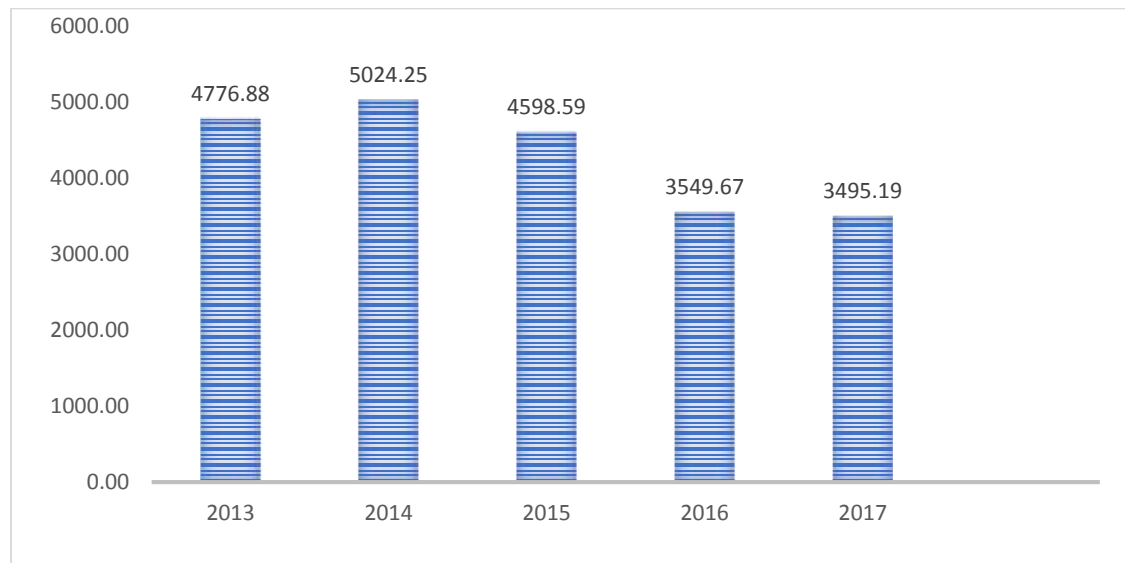
Further, trade volume measures liquidity risk and is an essential indicator of a buy/sell signal. Low volume means there are a smaller number of securities traded in an exchange, and therefore investors should stay away from such securities as there is a liquidity risk involved. Also, such securities do not have a good reputation; hence a smaller number of people want to trade. On the other hand, competitive securities have high trade volumes, which reduces liquidity risk, attracting more investors. A change in volume is an essential indicator of a buy signal. If the volume is increasing and the price is also increasing, this is a buy signal. If the price is decreasing and volume is increasing is a sell signal. On the other hand, Earnings announcements, is a public statement of a company's profitability for a specific time, typically a quarter or a year. Thus, an earnings announcement is an event which, according to Kim (1993), is a happening lasting a finite time during which some objects change their properties.

It is on this background that this study examined the effect of earnings announcements on the security trade volumes of companies listed on the Nairobi Securities Exchange, Kenya from 2013 to 2017 following drastic declines in security prices by 21 percent and 21 percent in 2015 and 2016 respectively, and, a further 12.5 percent in January 2017 as shown in Figure 1. Tachiwou (2010) argues that a decline in security prices is of great concern to investors, firms, and the economy, affecting the firms' market capitalization, total value, and the country's economy.

The Efficient Market Hypothesis (EMH) states that a security exchange is inefficient if factors such as events affect securities trading performance, allowing arbitrageurs to outperform the market.

Anurag and Gurpreet (2015) argue that market efficiency is essential to companies providing fair chances to trading investors to access complete and accurate information that reflects fair current market prices here investors cannot outperform the market.

Recent studies on trade volumes include; Cia, Tao and Yan (2020),



**Figure 1: Security prices on the NSE, Kenya**

**Source: NSE (2018)**

### 1.1 Statement of Problem

Security trade volume strengthens the exchange and their health and signals investors' confidence in the company's securities, thus increasing the firm's value and the investors' interest. Firms invest when the market value of securities exceeds the cost of those securities. However, this is not the case with NSE, Kenya. The NSE Handbook (2016) shows declines in the NSE, Kenya's N20 share index by 21 percent in 2015, 21 percent in 2016, and a further 12.5 percent in January 2017. The decline in share index is worrying, and of concern to the investors, the government, and the economy as a whole since the declining share index impact negatively on the security prices and trade volumes hence impacting negatively on the firms' values, investors' interest, industrialization and economic development of the country. Further, the asymmetry should be of greatest concern

to potential buyers of common stock since the stock is the firm's residual claim. American History writes that security trade volume decline occurred during the Stock Market Crash of 1929 in America that lead stock prices to collapse, leaving America and the rest of the industrialized world in a great depression.

While there have been various studies on earnings announcements, events, and the security trade volumes, most have focused on the rising stock index. For example, Dolley (1933) examined the price effects of stock splits and nominal price changes at the split time and found that the price increased in 57 cases and reduced in 26 cases. Not many studies have been done to address the issues of declining share index, which raises the question could the effect of earnings announcements on the security trade volumes be responsible for the decline of the NSE, Kenya N20 share index? This question motivated this study to examine the effects of earnings announcements on the security trade volumes of companies listed on the NSE, Kenya.

### **1.2 Objectives of the Study**

The objective of the study was to examine the effect of the Earnings announcement on the security trade volumes of companies listed on the NSE, Kenya.

### **1.3 Research Hypothesis**

This study formulated a hypothesis that:

H0: Earnings announcements did not have a significant effect on the trade volumes of securities of companies listed on the NSE, Kenya.

### **1.4 The Scope of the Study**

This study covered five years (2013 to 2017), was carried in Kenya, employed a mixed research design, and was restricted to companies listed on the Nairobi Securities Exchange, Kenya.

### **1.5 The Significance of the Study**

This study provides empirical data on the earnings announcements and the trade volumes of securities of companies listed on the NSE, Kenya. This information is essential, given that other comparable studies were carried when the performances of securities were not experiencing drastic declines. This study's findings will be of significance to the following groups of people: first, the market players (financial institutions, security markets, brokers, financial analysts, economists, and investors) by guiding the market activities and providing a better understanding of how to optimize returns. Second, the Policymakers (Capital Markets Authorities, Securities Exchanges, Central Banks, and other financial regulatory agencies). Enabling the authorities to assess and evaluate the current status provides a platform for doing reviews, designing, and formulating policies to regulate and control trading activities on the financial markets. Finally, to knowledge (scholars, researchers, and learners) to complement the existing studies and provide reference data in conducting new studies and or testing other studies' validity in this area. The findings will serve as a cross-reference that would give a background or an overview of future studies, contribute to knowledge, and strengthen the foundation for further research.

## **2. Literature Review**

### **2.1 Introduction**

This chapter discusses the theoretical review and empirical review.

### **2.2 Theoretical Review**

This study was guided by the Signaling theory proposed by Michael Spence in 1973, Efficient market hypothesis developed by Regnault (1863), and the Market expectation theory developed by Raude Tibbs and Byaruhanga (2019) and from the earlier works of Aswath (2012).

#### **2.2.1 Signaling Theory**

The signaling theory founded by Michael Spence in 1973 postulates that changes in prices and security trade volumes of securities upon an event signals the prospects of the company. The prospects may be positive or negative. Positive prospects result from positive announcements, while negative prospects result from negative announcements. The basic principle of the theory is information asymmetry. Under the information asymmetry principle, the information the management of the company has is not equally available to the investors, the market players, and the public at large at the same time. According to Spence (1974), the premise of the signaling theory is that sometimes complete and accurate information for predicting an individual's future productivity is unobtainable. So, people undertake specific actions that are observable and measurable to signal, albeit imperfectly, their value. The significance of signaling theory in this study is that the market players and the investors do not have the information the management have hence information asymmetry. The signaling theory bridges the gap between these two parties.

Recent studies in signaling theory include Taleb (2019) - Dividend Policy, Signaling Theory: A Literature Review, Jia, Tang, Ling, Yen, and Xuan (2019) - Consultation Market: A Signaling Theory Perspective, Wang and Wang (2018) - The Signaling Effect of Listed Companies' Executives' Shares Re-duction and Werner (2018) - Dividend Policy: Antecedent and its impact on Share.

#### **2.2.2 Efficient Market Hypothesis**

The efficient market hypothesis founded by Fama in the 1960s reflects relevant information in the security market prices. Among recent studies, Thune (2019) defines the efficient market hypothesis as a finance theory that explains why active investors cannot beat the market. In contrast, Aswath (2017) states that the efficient market is where the market price is an unbiased estimate of the investment's actual value. The market prices allow intense competition in the capital market to fair pricing of debt and equity securities.

The efficient market hypothesis is founded on the principles that all investors perceive all available information in precisely the same manner. The second principle is that no single investor under the same amount of invested funds and equal possession of information will profit more than the other. Finally, no investor should beat the market using their best efforts.

Weak-form, efficient markets reflect only past information; semi-strong form efficient markets reflect both past and present information; and strong-form efficient markets reflect past, present,

and future information. According to weak-form, efficient markets, investors cannot obtain abnormal returns by analyzing historical information about the securities, which renders investment management tools like filter strategy and technical analysis ineffective and the fundamental analysis effective.

Under the assumption of rationality, investors in the market are deemed rational. They adjust their estimates of securities prices of the company when the market releases new information. The independent deviation assumption is that the information released to the market is incomplete, rendering the irrational investor to project future sales above rational. Arbitrage, on the other hand, is the act of exploiting situations of pricing. Arbitrage occurs when securities are bought at a lower price in one exchange and simultaneously sold in another exchange at a higher price, thus making a risk-free profit.

Tests for market efficiency is still taking place in various security exchanges. In recent studies, Kelikume, (2016), tested the Nigerian Stock Market efficiency from 1985 to 2015 and found that the Nigerian Stock Market was efficient and followed the random walk behavior. EMH has, however, been criticized mainly on the market crash of October 1987. Moreover, the interpretation that the hypothesis implies that returns should be unpredictable is highly misleading.

EMH is essential to this study because it links the event to how earnings announcement is incorporated in the security prices and the trade volumes as laid stated by Aswath (2017). Besides, the theory is founded on the principle of the market efficiency which forms the basis of this study.

### **2.2.3 Market Expectation Theory**

The Market expectation theory proposed by Raude, Tibbs, and Byaruhanga (2019) states that investors and market participants project the company's overall anticipated performance or outcome at a particular time, based on the market, economic, political, and environmental factors.

This theory is founded on the principle of market efficiency. When the market is efficient, the market expectation equals the company's announcements hence no price reaction. In contrast, an inefficient market will cause information asymmetry.

The theory is essential in understanding the behavior of the company's security prices and trade volumes when an event occurs; hence, enables investors and the market participants to predict the firm's current and future values, compared to the company's public announcements. The variation between the company's public announcement and the market expectation triggers a security price change. The price will rise when the earnings announcement exceeds the market expectation and will decline when the announcement is below market expectation. The rise or fall in price will trigger a surprise hence affecting trade volumes of the security.

However, when the market is efficient, the companies' public announcements will be equal to the markets' expectations, resulting in no price change. Aswath (2012) argues that if investors expect a 40 percent increase, a company that reports a 30 percent increase in revenue will be sending bad news. When a company announces a profit fall of 30 percent when the projected decline is 40 percent, it could provide positive information. According to Aswath (2012), variation between the company's public announcement and the market's expectation causes a "surprise" calculated as the

result changes with the market's expectations. Therefore, when a company announces its earnings, investors react to the 'news.' Any information outside the forecasted result will trigger a reaction.

Recent studies include Raude, Tibbs, and Byaruhanga (2020) - Interest-rate capping announcements on the security prices of companies listed on the Nairobi Securities Exchange, Kenya. Raude and Tibbs (2019) - Profit warnings announcements on the security prices of companies listed on the Nairobi Securities Exchange, Kenya. Raude and Byaruhanga (2019) Earnings announcements on the security prices of companies listed on the Nairobi Securities Exchange, Kenya. These three studies used the event study methodology and mixed research design.

## **2.3 Empirical Literature**

### **2.3.1 Event**

An earnings announcement is an event. In finance, an event is information that can cause a security price to rise or fall. An event is also an occurrence that can change a business's financial position and can be measured. Kim, (1993), defines event in ordinary discourse as a happening lasting a finite duration during which some object changes its properties. Kim (1993) states that an event is an object with a property at a time. Two events are equal if they are both events of the same object having the same property at the same time. The event and event study were first published by Dolley (1933). Recent studies include Lamdin (2020) - Implementing and Interpreting Event Studies of Regulatory Changes, Raude, Tibbs and Byaruhanga (2020)- Interest-rate capping announcements and the securities of bank companies listed on the Nairobi securities exchange, Kenya, Raude and Tibbs (2019)- Profit warnings announcements and the securities of companies listed on the Nairobi securities exchange, Kenya, Raude and Byaruhanga (2019)- Earnings announcements and the securities of companies listed on the Nairobi securities exchange, Kenya, Alon and Heaton's (2015) - Event Studies in Securities Litigation: Low Power, Confounding Effects, and Bias in Washington." Angelovska (2017)- investors' behavior regarding company earnings announcements during the Macedonian Stock Exchange recession from 2008 to 2009.

### **2.3.2 Earnings Announcement**

An earnings announcement is a public announcement of a company's profitability for a specific time, say a year. Theoretically, earnings are the net profits of an enterprise after deducting all expenses. Recent studies in earnings announcements include Raude and Byaruhanga (2019)- Earnings announcement on the company security prices listed on the Nairobi Securities Exchange, Kenya. Ali and Ishtiaq (2018)-Earnings announcements, stock price reactions, and market efficiency in Saudi Arabia. Angelovska (2017)- Investors' behavior regarding company earnings announcements during the Macedonian stock exchange during the recession period. Olang and Akenga (2017), Effect of Earnings Announcement on Share Prices of Companies Listed at the Nairobi Securities Exchange.

## **3. RESEARCH METHODOLOGY**

Data in this study are quantifiable, and the statistical techniques used are analytical, prompting this study to use a positivism research philosophy to achieve its objectives. Macionis and Gerber (2010) state that positivism is a philosophical theory in which particular knowledge is based on natural



phenomena, properties, and relations. Besides, this study used a mixed research design to report the means and the deviations from the means and their variation percentages. This study also used the causal research design to show relationships between the independent and dependent variables. The study collected secondary data using schedules and primary data using questionnaires from a census of 25 companies listed on the NSE, Kenya, that met the study requirements. The first requirement of the study was the company's securities must have been listed on the Nairobi Securities Exchange, Kenya, and traded for a whole year(s) of the study period. The second requirement was that a company must have had its securities traded on NSE, Kenya, continuously during the event period. Finally, a company must have made a public announcement on its earnings.

**Table 1: NSE, Kenya listed companies studied**

Sector	Companies listed on the NSE, Kenya	Companies studied
Banking	11	11
Insurance	6	4
Energy	5	1
Commercial	11	4
Manufacturing	6	-
Investment	6	-
Agricultural	4	1
Automobile	2	-
Construction	5	-
Telecommunication	1	1
Real Estate	1	-
Exchange Trade	1	-
Manufacturing	1	-
Manufacturing	1	1
Agricultural	1	-
Agricultural	2	1
Manufacturing	1	1
Total	65	25

**Source: NSE, Kenya (2020)**

#### **4. DATA ANALYSIS**

This study analyzed data using descriptive statistics and inferential statistics and summarized using SPSS.

##### **4.1 Descriptive Statistics.**

This study used descriptive statistics to summarize means and the spread of the data, calculated changes in the means, and changes in the standard deviations of trade volumes, as shown in Table 2.

**Table 2: Descriptive statistic on earnings announcements and the security trade volumes of companies listed on NSE, Kenya**

Mean		Standard Deviation			
Before announcement	After announcement	% Change	Before announcement	After announcement	% Change
4.666	4.616	-1.07	1.37	1.402	2.34

**Source: Researcher (2020)**

The results in Table 2 show the mean security trade volume declined by 1.07 percent, implying that the investors reacted to the earnings announcements negatively hence triggering a fall in security trade volumes. Besides, changes in the means and standard deviations are small, indicating that the spreads were around the mean; hence, less volatility and investment in these securities is not risky.

#### 4.2 Inferential statistics

This study used inferential statistics to draw a conclusion. Thus, the Hypothesis Test was used.

##### 4.2.1 Hypothesis Test

This study formulated a null hypothesis that earnings announcements did not significantly affect the security trade volumes of companies listed on the NSE, Kenya. This study ran the homogeneity of variances and the normality tests using the Levene Statistic and the Shapiro-Wilk histograms, before carrying out a significant test at 5 percent using the ANOVA technique.

##### Homogeneity of Variances Test

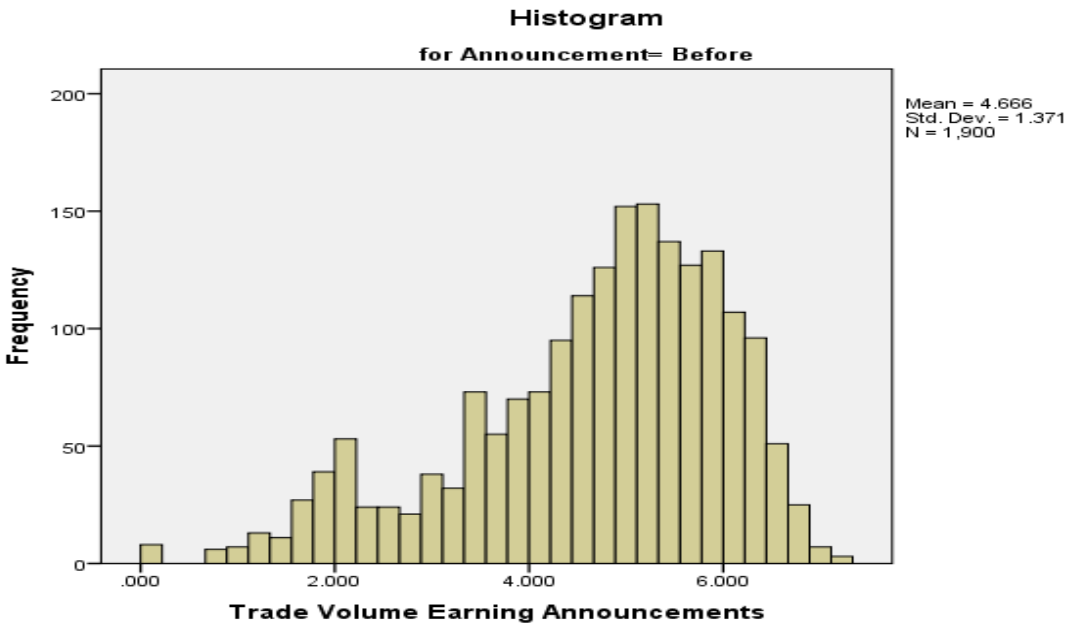
**Table 3: Homogeneity test on the earnings announcements and the trade volumes**

Levene Statistic	df1	df2	p-value.
.687	1	3798	.407

**Source: Researcher (2020)**

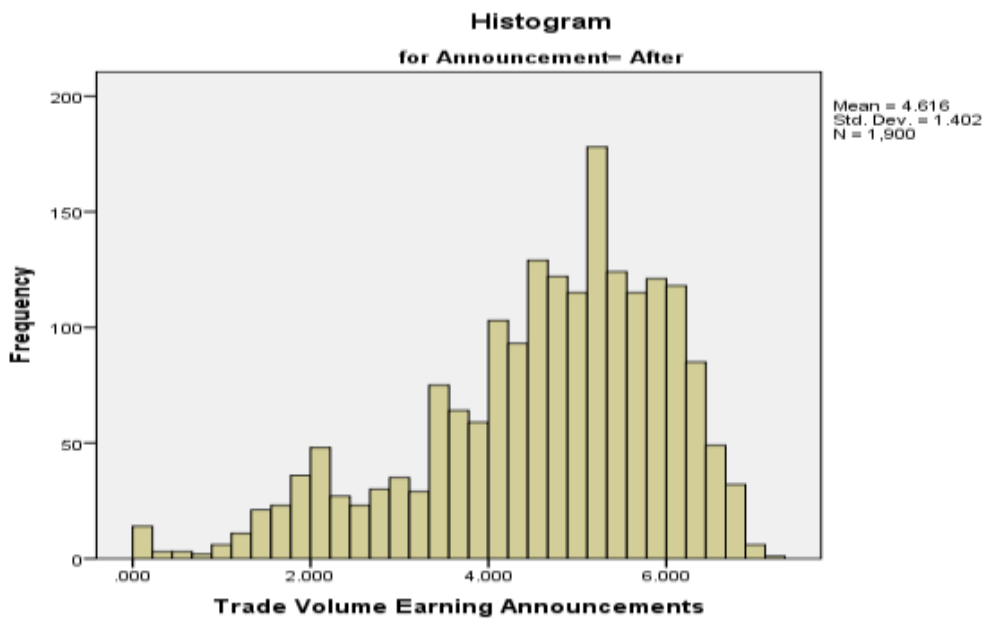
Table 3 shows the result of the homogeneity of variances test on the effects of earnings announcements on the security trade volumes of companies listed on NSE, Kenya, using Levene's test. The results show variances were,  $F(1,3798) = .687$ ,  $p\text{-value} = .407$ . Since the p-value is greater than 0.05 level, the homogeneity assumption is confirmed.

## Normality Test



Source: NSE, Kenya (2019)

Figure 2: Normality test on the earnings announcements and the security trade volumes



Source: NSE, Kenya (2019)

Figure 3: Normality Test on the Earnings Announcements and Security Trade Volumes

Figures 2 and 3 present the test results for normality on the earnings announcements and security trade volumes of companies listed on the Nairobi Securities Exchange, Kenya. The histograms seem to be skewed to the right; thus, violating the normality assumption. However, according to Pallant (2007), the violation of the normality assumption should not cause significant problems with large data, as is in this study. According to Elliott and Woodward (2007), this study can use parametric procedures even when the normality tests are violated. Further, ANOVA is robust to counter such violations. This study, therefore, ignores the violation.

### Significance Test

**Table 4: ANOVA test on the earnings announcements and the security trade volume of companies listed on the NSE, Kenya**

	Sum of Squares	df	Mean Square	F	p-value.
Between Groups	2.325	1	2.325	1.209	.272
Within Groups	7302.229	3798	1.923		
Total	7304.554	3799			

**Source: Researcher (2019)**

Table 4 presents the results of the significance test using the ANOVA technique. The results show a p-value = .272, implying that the effect of earnings announcements on the security trade volumes of companies listed on the Nairobi Securities Exchange, Kenya is statistically insignificant at 5 percent. The insignificant result in this study indicates that the earnings announcements were within the market expectation; hence, it did not trigger price changes that would affect the security exchange's trading activities. Aswath (2012) argues that it is not the magnitude of the earnings change that matters, but the "surprise" in the earnings, measured as the earnings change relative to expectations of the market. Aswath (2012) further argues that markets will react to the "news" in the announcement when a company announces its earnings. However, the way the news is measured has to be relative to the expectations. According to Aswath (2012), security prices rise when earnings results exceed market expectations and decline when earnings results are below market expectation.

The descriptive statistics result in Table 1 shows a small decline in the mean trade volume of 1.07 percent and a low standard deviation; hence collaborate with this result. A small decline in the mean trade volume implies that earnings announcements were within the market expectation. The low standard deviation indicates that the spread was around the mean, hence less volatility. Similarly, statistical insignificance demonstrated in this study is attributed to the market being efficient in the weak-form of the efficient market hypothesis.

This result agrees with the findings of Muga (2014), Kiremu, Galo, Wagala, and Mutegi (2013) and inconsistent with the findings of Mohamed (2011), Shireen, and Kavita (2016), Sunjay and Bijoy Kumar (2015).

Recent studies in this area are Raude and Byahuranga (2019)- Earnings announcements on companies' security prices listed on the NSE, Kenya, and Cia, Tao and Yan (2020) - Stock Market Trading Volume changes and Economic Uncertainty Dependence before and after SINO-US Trade Friction

## **5. SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Summary of the Findings**

This study investigated the effects of earnings announcements on the security trade volumes of companies listed on the Nairobi Securities Exchange, Kenya. The conceptual constructs were earnings announcements as the independent variable and the security trade volumes as dependent variables. This study collected data from a census of 25 companies listed on the Nairobi Securities Exchange, Kenya, using questionnaires and schedules. It used the mean and the standard deviation to present the data in a meaningful way that allows a simpler interpretation of the result. Besides, the study used a significance test to draw a conclusion.

The study result revealed a p-value of 0.272, implying that the effect of earnings announcements on the security trade volumes of companies listed on the Nairobi Securities Exchange, Kenya is statistically insignificant at a 5 percent level. The result indicates that the earnings announcements were within the market expectation, and the security market was efficient at the informational level; thus, did not affect the securities.

### **5.2 Conclusions**

Based on the findings of the study, this study thus concludes that earnings announcements did not affect trade volumes of the securities of companies listed on the Nairobi Securities Exchange, Kenya. The significance tests yielding a p-value higher than 5 percent significant level demonstrates that the effect was not significant. These results could be due to the sizes of companies studied, the estimation of the event window and or the technique used. Since the study objectives yielded statistically insignificant results, this study further concludes that the null hypotheses were, in fact, true.

### **5.3 Recommendations**

This study recommends that companies listed on the NSE, Kenya, be encouraged to date their financial statements and other records. Dating the records will provide the regulators, investors, market players, researchers, scholars, and the public with the date when the events occurred and the financial statements approved. This study further recommends that the Capital Market Authority and the Nairobi Securities Exchange strengthen regulations. Strengthening regulations will enhance compliance with insider trading laws, improve efficiency in the market, build investors and public confidence, and establish relevant policies to enhance the efficiency of the securities exchange and to list more companies. This study also recommends that the Nairobi Securities Exchange increase the listing of companies. Listing more companies will improve the measure of the state's economy; thus, making the economy more efficient. Finally, this study recommends further research in this area in order to generalize the findings.

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