

Mpuku, Fabian; Mpundu, Mubanga

Article

Analysis of portfolio investment among individual investors in Zambia : a micro-focus on the Lusaka Securities Exchange

Pakistan journal of applied economics

Provided in Cooperation with:

ZBW OAS

Reference: Mpuku, Fabian/Mpundu, Mubanga (2023). Analysis of portfolio investment among individual investors in Zambia : a micro-focus on the Lusaka Securities Exchange. In: Pakistan journal of applied economics 33 (2), S. 119 - 131.
<http://www.aerc.edu.pk/wp-content/uploads/2024/01/Paper-1090-Fabian-Mpuku-I-5.pdf>.

This Version is available at:

<http://hdl.handle.net/11159/703187>

Kontakt/Contact

ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics
Düsternbrooker Weg 120
24105 Kiel (Germany)
E-Mail: [rights\[at\]zbw.eu](mailto:rights[at]zbw.eu)
<https://www.zbw.eu/>

Standard-Nutzungsbedingungen:

Dieses Dokument darf zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden. Sie dürfen dieses Dokument nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, aufführen, vertreiben oder anderweitig nutzen. Sofern für das Dokument eine Open-Content-Lizenz verwendet wurde, so gelten abweichend von diesen Nutzungsbedingungen die in der Lizenz gewährten Nutzungsrechte. Alle auf diesem Vorblatt angegebenen Informationen einschließlich der Rechteinformationen (z.B. Nennung einer Creative Commons Lizenz) wurden automatisch generiert und müssen durch Nutzer:innen vor einer Nachnutzung sorgfältig überprüft werden. Die Lizenzangaben stammen aus Publikationsmetadaten und können Fehler oder Ungenauigkeiten enthalten.

<https://savearchive.zbw.eu/termsfuse>

Terms of use:

This document may be saved and copied for your personal and scholarly purposes. You are not to copy it for public or commercial purposes, to exhibit the document in public, to perform, distribute or otherwise use the document in public. If the document is made available under a Creative Commons Licence you may exercise further usage rights as specified in the licence. All information provided on this publication cover sheet, including copyright details (e.g. indication of a Creative Commons license), was automatically generated and must be carefully reviewed by users prior to reuse. The license information is derived from publication metadata and may contain errors or inaccuracies.

ANALYSIS OF PORTFOLIO INVESTMENT AMONG INDIVIDUAL INVESTORS IN ZAMBIA: A Micro-Focus on the Lusaka Securities Exchange

Fabian MPUKU* and Mubanga MPUNDU**

Abstract

This study examines the factors affecting the promotion of portfolio investment among individual investors in Zambia using the Lusaka Stock Exchange as a point of reference. The study derives its cause with the observational view that little investments are occurring in the stock market, which has eventually affected the promotion of portfolio investments in Zambia and, thereby, did a disservice to the main purpose for which Lusaka Securities Exchange was established. The study observed that individual investors have instead channeled their investments towards other portfolios such as Treasury Bills, Government Bonds, Real Estate, Agriculture and Village Banking, some of which are higher risk than the stock market. The study identified variables through the theoretical framework developed using investment theories to help establish what influences investment choices among individual investors. The variables used were individual characteristics, listed companies' characteristics and public awareness. The purpose is to assist policymakers in devising policies that directly target these variables, intending to encourage individual investors to invest in the stock market. The data collection was done through primary and secondary techniques from community households and the Lusaka Securities Exchange, Bank of Zambia (BOZ), the Ministry of Finance (MOF) and the Securities Exchange Commission (SEC). The study revealed that awareness related to the functioning of the Stock Market has a positive and significant influence on the investment decisions of individual investors. The results further suggest that households who are aware of the stock market are more likely to invest in stocks than those who are unaware of the stock market. An education programme for investors' particularly educational tours and short courses offered on a continual basis is very crucial in helping to educate the public about securities. Media can also be used to reach out to more people, particularly in explaining the significance of investing in the stock market.

Keywords: Portfolio Investment, Individuals, Lusaka Stock Exchange, Economic Development.

JEL Classification: D22, D80, F62, G01.

* PhD Scholar, Faculty of Business, Economics and Management, University of Lusaka, Zambia. ** Senior Lecturer, Faculty of Economic and Management Sciences, Department of Economics, University of the Western Cape, South Africa.

I. Introduction

Stock markets play vital roles in wealth creation, diversification, and portfolio development. Thus, investing in stocks has long been acknowledged as a medium to build sustainable wealth. Investments in the stock market are typically considered as risky. However, with prudence, the risk balances out over time. The benefits associated with stock investment extend to liquidity combined with bigger returns and better tax advantages [Chen (2020)].

The Lusaka Stock Exchange was established with the view of developing the capital market following the liberalisation of the Zambian economy [LuSE (2014)]. Many state-owned companies were privatised to boost economic growth and economic development. The formation of the exchange was part of the government's economic reform programme aimed at developing the financial and capital markets in order to support and enhance private sector initiatives. Low liquidity is one remarkable characteristic of the LuSE. Several distortions observed in both the demand for and supply of stocks help to explain the low liquidity in this exchange. The small number of listed companies and the small number of public stocks available are the main reasons for the low supply of stocks traded in the LuSE. Although there were 25 listed companies on LuSE on 14th April 2022, with a total market capitalisation of ZMW 71.69 billion (US\$4.1bn) [LuSE (2023)]. It was still one of the lowest in the African continent. A few investors (mostly foreign multinationals) own most of these shares.

Nyati (2018) further added that the higher the participation rate of domestic traders, the greater the spread of the total value of trading over different companies. This does not necessarily mean that domestic investors individually hold more diversified portfolios than foreign investors. Domestic trading, however, is more diversified. It may be noted that, compared with the shares of other companies, the shares of the two largest companies by market value (ZCCM and SCZ) are rarely traded. One of the main factors that impede the mobilisation of domestic savings by the LuSE is the low level of general savings in the economy. If total savings are very small, there is little a stock exchange can do to allocate these savings, which is quite independent of the legal and technological level of sophistication of the exchange. Marone (2003) highlighted the low participation among individuals at the household level in Zambia and argued that Stock markets can be an effective way of pooling the savings of households. Without a stock market, it would be costly for a firm to access multiple small investors to fund its projects. At the same time, stock markets may help to transform these several small savings into large investment projects. From the viewpoint of investors, they would, without pooling, buy or sell entire firms and then be unable to diversify risk. Investors can invest in the stock market for purposes of dividend benefit for a long period of time, or they can invest for capital gains.

This study comprises as follows. After introducing the topic, the study presents the literature review in Section II. Section III encompasses the data and methodology part. The presentation and discussion of results are presented in Section IV, while Section V concludes the paper with some policy implications.

II. Literature Review

Given the high return on other portfolio investments, such as Treasury Bills, usually dependant on market conditions that influence the pricing, such as inflation, investing in less risky assets becomes more attractive, especially in times of economic turmoil. This also shows aggressive investments in the property market.

The study explores individuals' participation in the stock market and the factors driving investment decisions. This is explored amidst studies and research showing that the securities markets have offered better and safer returns to investment than the other markets individuals decide to invest. Daka (2019) argued that 4 in every 5 Zambian households would choose to invest in property than in stock markets. Nyati (2018) indicated that investment for the average Zambian means buying or building a house or two and renting out the property – this has been a trend for some time now. This is because building a house is much talked about and is deemed a symbol for anyone who has invested wisely, while a person with a stable income who has not built or acquired a house is regarded as a failure. Although owning a house is a good initiative, it is important to note that there are various investment avenues in an investment portfolio that one can undertake, which also offer profitable returns. These include stocks, term deposits, unit trusts, insurance, bonds and treasury bills, and like property, their price can either rise or fall.

Treasury bills and bonds are debt instruments issued by the Government through the central bank to borrow money from the public. Treasury bills have tenures ranging from three months to one year, while bonds have maturity tenures between two and 15 years. Using GDP as a pivotal measurement variable, on 12th March 2021, yields for treasury bills were about 14.50 per cent for 91 days, 14 per cent for 182 days, almost 21 per cent for 273 days, and 23.16 per cent for one year, while government bonds have yields of 19.50 per cent for bonds maturing in two years, 20 per cent for three-year maturity, five-year bonds attracting 20.40 per cent [BOZ (2021)].

The growth of Zambian stock market has experienced relatively slow growth since its establishment compared to other stock exchange markets in Africa. It is ranked third from bottom in terms of market capitalisation ratio, and stocks traded to GDP ratio out of the 29 Sub-Saharan African Stock Exchanges, meaning it is small and not as liquid as most stock exchanges from other countries. This is attributed to the low participation of individuals on the stock market. It is important to note that the efficiency of LuSE primarily depends on the active and rational participation of individual investors. Although the government has strengthened policy interventions through awareness programs to increase the participation of individuals in the stock market, statistics still show low participation in stock markets.

1. Low Domestic Saving

While the culture of domestic saving and investment could be encouraged by LuSE and other financial institutions in Zambia, if individuals only make enough income for consumption, investment in the stock market becomes a challenge. A high GDP supported by reduced inflation and high employment raises the country's GDP per capita, and in turn, more savings and investments are realised [Schierreck (2018)].

2. Tax Regime

According to Trading Economics, Zambia's tax bracket remains relatively higher than average within the Sub-Saharan region. The Personal Income Tax Rate is a tax collected from individuals and is imposed on different income sources like labour, pensions, interest, and dividends. The benchmark used refers to the Top Marginal Tax Rate for individuals. Revenues from the Personal Income Tax Rate are an important source of income for the government of Zambia. The Personal Income Tax in Zambia is 37.5 per cent. This is marginally high for an already low-income country. This has relatively added to the challenge of investing as individuals will not have sufficient capital to allow them to save and invest.

3. Absence of Financial Intermediaries

At present time, there are no investment banks in Zambia and the country has only been prominent in commercial banking with subdivisions and departments that minimally act as financial intermediaries for the stock market. Therefore, normal merchant banking services such as underwriting equities and bonds, asset management and corporate advisory only exist at a minor scale. For individual investors to become aggressive and more active on the stock market, there is a greater need to allow for the stronger development of investment banking units in the country that can advise and invest on behalf of individual investors [Rashid (2009)].

4. Lack of Adequate Accounting and Auditing Systems

Paudel (2005) asserted that one of the major requirements for any company wishing to list is that it will be required to provide a full disclosure of its financial and operating activities. In Zambia today, quoted companies have chosen not to be listed due to the disclosure agreement that they would have to oblige. Other companies have neither quoted nor listed at all. This limits investment choices for most individuals as they would have to choose from a few good-listed companies to make their investments. Paudel (2005) further added that companies in African countries should be encouraged to adopt international accounting standards and to agree to

report along the lines of international best practices if they wish to be listed on the stock exchange.

5. *Family-Owned Companies*

Mato (2015) adds that as companies shun away from issuing public shares on the stock market, the stock market remains non-vibrant and very flat and thereby impedes investment portfolio growth in the country and results in low GDP growth and economic development. Individuals remain with low income to allow them to participate fully in the stock market.

6. *Lack of Information*

Kirrage (2019) argued that LuSE had to do a lot more work in disseminating information to the public regarding the operation of the stock market. In the past 4 or 5 years, LuSE has been deliberate about furnishing information to the public through various channels such as newspapers, radio, television, booklets, and social media. One would then argue that a great majority of people, especially those in rural areas, may still not have access to these platforms. However, it remains notable that even urban areas of Zambia, such as Lusaka and Copperbelt, are only aware of the stock market but do not know its operations. Then, it begins to beg the question of interest to learn by individuals than whether LuSE is making an effort to educate the public.

7. *Infrastructure*

In Zambia, the consideration of infrastructure can be viewed from a location perspective, it can be argued that if the stock market was decentralised to even other parts of Zambia other than just Lusaka, there would be more individuals participating. However, this can also be countered as for those within Lusaka. The trading and settling system in Zambia operate very efficiently. This equally borders on the issue around information and education and mere interest to learn about stock market.

8. *Bond Market*

Zambia's case is different; however, as a bond market exists, and according to the IMF, over the last decade, the Zambian public -individuals have invested more in bonds than they have in the stock market. Reasons cited have been liquidity, returns and safety issues that are mostly associated with bonds than stock markets. It can then be argued and assumed further that a possible reason for fewer investments in the stock market is that other investment destinations, such as bonds and treasury bills, provide high liquidity, better returns, and better safety than stock markets.

9. Capacity Development

According to LuSE (2020), the institution is looking to expand its investment channels by introducing a derivative market with a focus on Agro-Futures. LuSE is looking to begin trading with other markets, such as the Johannesburg Stock Exchange (JSE). Agro trading will allow investors who particularly understand the Agro crop cycles better participate in investing in LuSE and increase individual participation. This not only develops capacity but also promotes portfolio investment and economic growth.

From the literature review, it can be noted that African stock markets suffer from the problem of low liquidity. It can also be noted that wealth, age, and education have significantly played a role in stock market investment. Furthermore, it can be argued that the push to invest in the stock market at a global perspective has heavily been driven by inflation, economic performance and returns against prevailing market conditions.

Additionally, institutional and infrastructural indicators play a significant role in stock market investment in Africa. The notable indicators from the review, (existence of a market regulator, a governing law, nature of clearing and settlement, settlement cycle, the existence of an international custodian, foreign participation, exchange control, nature of trading systems, the existence of a central depository, number of trading days, and accounting and auditing reporting system) are considered. The indicators show that the main institutional and infrastructural bottleneck in African stock

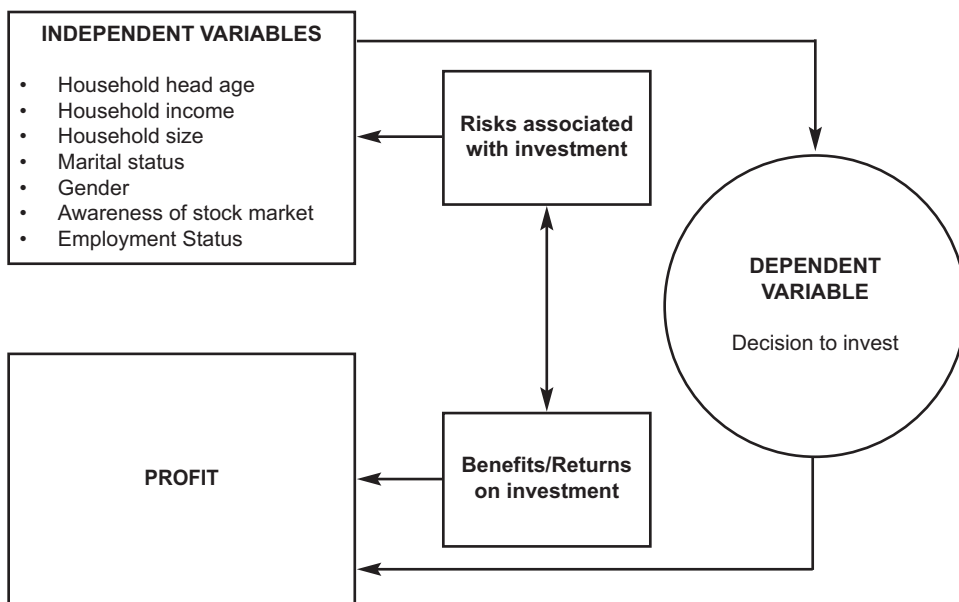


FIGURE 1

Conceptual Framework

markets is the use of slow manual systems. Even though markets are gradually adopting electronic systems, substantial African stock markets still trade manually and use manual clearing and settlement. Similarly, most markets do not have central depository systems, whilst some markets still have restricted foreign participation. Such bottlenecks slow down trading and induce inactivity.

The conceptual framework in Figure 1 shows how the independent variables are considered risks associated with the investment decision. However, benefits accrue from a positive decision to invest will flow into profits, which is what the investors want at the start of the investment. Hence, the decision is either to invest at minimal or high risk with the expectation of profit. The decision falls in the hands of the investors.

III. Methodology

For this study, the target population was limited to 2200 participants. The study targeted 2000 investors. There are 24 listed companies, 6 licensed brokers 2 custodian banks on LuSE; thus, the target population was 120 (5 representatives from each listed company, 5 each from the licensed brokers and 10 each from the 2 custodian banks).

The study adopted the Yamane formula for computing the sample size. The Yamane formula is suitable because it assumes a normal distribution [Mugenda, et al., (1999)]. The participants are assumed to be normally distributed in terms of the parameters for interpretation of their perception on factors influencing investment decisions towards the stock exchange market. Therefore, the Yamane formula is considered a suitable formula for determining an appropriate sample size, especially when the target population is known. Yamane's formula was used to determine the sample size as shown below in Equation (1) [Yamane (1967)];

$$n = \frac{N}{1 + N(e^2)} \quad (1)$$

where,

n = the sample size.

N = the total population size.

e = the margin of error

$$\text{Sample Size } (n) = \frac{N}{1 + N(e^2)}$$

$$n = \frac{2200}{1 + 2200 (0.05^2)}$$

$$n = \frac{2200}{6.5}$$

$$n = 338$$

Therefore, the required sample of the study was 338.

In order to determine the sample size in each stratum (target group), the researcher employed the following formula in Equation (2);

$$n_i = (S_i/N) * n \quad (2)$$

where,

- n_i = the sample size of each stratum.
- S_i = the population size of each stratum.
- N = the accessible population
- n = the desired sample size of the study

IV. Presentation and Discussion of Results

The response results presented in Table 1 below show that 85.79 per cent of all distributed semi-structured questionnaires were returned and fully answered by the targeted participants. A total number of questionnaires computes the response rate. The semi-structured questionnaires were distributed to five different stratum, and the response rate for each stratum varied. The stratum response rate for investors was 84.69 per cent, while 100 per cent for Stockbrokers, personnel from SEC, personnel from listed companies and personnel from LuSE. Mugenda and Mugenda (1999) suggested that the questionnaire's return rate of 50 per cent is sufficient for analysis, the response returned rate of 60 per cent is good and the response returned rate greater than 70 per cent is very good and representative for analysis. Therefore, the questionnaire return rate of 85.79 per cent is very good and representative for further analysis.

TABLE 1
Distribution Response Results

| Stratum | Questionnaires Issued | Questionnaires Returned | Response Rate (percent) |
|---------------------------------|--------------------------|----------------------------|----------------------------|
| Investors | 307 | 260 | 84.69 |
| Stockbrokers | 8 | 8 | 100 |
| Personnel from SEC | 3 | 3 | 100 |
| Personnel from Listed Companies | 17 | 17 | 100 |
| Personnel from LuSE | 2 | 2 | 100 |
| Total | 338 | 290 | 85.79 |

Source: Authors' estimation.

1. *Pearson Correlation*

This section presents the Pearson correlation test between the dependent variable (investment decision) and explanatory variables (individual characteristics, listed companies' characteristics and public awareness).

2. *Investment Decision and Individual Characteristics*

The findings in Table 2 revealed that there is a positive correlation between investment decisions and individual characteristics. The correlation between investment decisions and individual characteristics has a correlation factor of 0.2478. This positive correlation was found to be statistically significant since the significance value was less than 0.05 level of significance. This entails those individual characteristics (age, sex, marital status, awareness of the stock market, education level of household, employment status and income) that influence investment decisions towards the stock exchange market through individual participation.

3. *Investment Decision and Listed Companies Characteristics*

Table 3 shows the results of the Pearson correlation test between investment decisions and listed companies' characteristics. The results indicate a positive correlation between investment decisions and listed companies' characteristics. The correlation between investment decisions and listed companies' characteristics has a correlation factor of 0.5738. The results show that this positive correlation was found to be sta-

TABLE 2
Pearson Correlation Results Between Investment Decision
and Individual Characteristics

| | | Investment Decision (Y) | Individual Characteristics (X1) |
|------------------------------------|---------------------|----------------------------|------------------------------------|
| Investment Decision (Y) | Pearson Correlation | 1 | 0.2478** |
| | Sig. (2-tailed) | | 0.002 |
| | N | 290 | 290 |
| Individual Characteristics (X1) | Pearson Correlation | 0.2478** | 1 |
| | Sig. (2-tailed) | 0.002 | |
| | N | 290 | |

Source: Authors' estimation.

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

TABLE 3

Pearson Correlation Results between Investment Decision
and Listed Companies Characteristics

| | | Investment Decision (Y) | Individual Characteristics (X2) |
|--|---------------------|----------------------------|------------------------------------|
| Investment Decision (Y) | Pearson Correlation | 1 | 0.5738** |
| | Sig. (2-tailed) | | 0 |
| | N | 290 | 290 |
| Listed Companies Characteristics (X2) | Pearson Correlation | 0.5738** | 1 |
| | Sig. (2-tailed) | 0 | |
| | N | 290 | |

Source: Authors' estimation.

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

tistically significant since the significance value was less than 0.05 level of significance. This entails that listed companies' characteristics (company stability, financial performance, dividend policy, share price and stock marketability) influence investment decisions towards the stock exchange market through individual participation.

4. Investment Decision and Public Awareness

Table 4 shows the results of the Pearson correlation test between investment decision and public awareness. The results indicate a positive correlation between investment decisions and public awareness. The correlation between investment

TABLE 4

Pearson Correlation Results Between Investment Decisions
and Public Awareness

| | | Investment Decision (Y) | Public Awareness (X3) |
|----------------------------|---------------------|----------------------------|--------------------------|
| Investment Decision (Y) | Pearson Correlation | 1 | 0.9287** |
| | Sig. (2-tailed) | | 0.004 |
| | N | 290 | 290 |
| Public Awareness (X3) | Pearson Correlation | 0.9287** | 1 |
| | Sig. (2-tailed) | 0.004 | |
| | N | 290 | |

Source: Authors' estimation.

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

decisions and public awareness has a correlation factor of 0.9287. The results show that this positive correlation was found to be statistically significant since the significance value was less than 0.05 level of significance. This entails that public awareness (investment information) influences investment decisions towards the stock exchange market through individual participation.

V. Conclusion and Recommendations

The study established that listed companies' characteristics (company stability, financial performance, dividend policy, share price and stock marketability) influence investment decisions towards the stock exchange market through individual participation. Hence, listed companies on LuSE should strive to continuously guard their reputation in order to increase investor confidence. When a company changes its corporate strategy, it must effectively communicate its new strategy to investors or shareholders to ensure company stability. In addition, listed companies on LuSE should strive to use their assets to generate good revenues because the company's overall financial health will influence investors' and shareholders' investment decisions of whether to buy or sell shares in a particular listed company on LuSE. Furthermore, the listed companies on LuSE should have attractive dividend policies. For instance, listed companies on LuSE should propose a dividend increase to its shareholders whenever possible.

Additionally, listed companies on LuSE should strive to make decisions and implement corporate strategies which aim at maximising shareholder value. This will make listed companies attractive to investor and/or shareholder since they take share price of listed companies on LuSE into consideration before making an investment decision. Therefore, when all of these recommendations are implemented, LuSE will become a safer place to invest, consequently boosting investor confidence.

Furthermore, the study established that public awareness is insufficient, but there is a positive correlation between investment decisions and public awareness. The study recommends that all stakeholders in the capital market environment, such as LuSE, SEC, Stockbrokers, Capital Markets Association of Zambia, Banks and many more, should start collaborating with other market stakeholders in order to implement a compressive awareness and public education programme that targets both supply and demand of securities. It should implement a specialised proficiency certification programme targeting market intermediaries and the general public to enhance financial literacy. A programme of education for the investors' particularly educational tours and short courses, is crucial in helping to educate the public about securities. Media can also be used to reach out to more people, particularly in explaining the significance of investing in the stock market. Increasing public knowledge about the functioning of the stock market could promote the development of the stock market in Zambia. As mentioned earlier, knowledge about stock market activity can be im-

proved through regular and intensive education programs. Educating the public about the role of the stock market can help increase the investor base and improve the liquidity of the stock market. There is often very little or no education on the role of stock markets in the *Zambian economy*.

References

- Bank of Zambia, 2020, <https://www.boz.zm/>
- Campbell, J., 2006, Household Finance, *The Journal of Finance*, 61(4): 1553-1604. <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1540-6261.2006.00883.x>
- Chen, W., 2020, China's Manufacturing and Africa's Industrialization, A Case Study of Chinese Manufacturing Investment in Ethiopia. <https://saiaa.org.za/wp-content/uploads/2020/10/3-Weiwei-Chen.pdf>
- Daka, T., 2019, Weak Economic Activity, *Money Web*, 1(1): 1. <https://www.moneyweb.co.za/news/companies-and-deals/etion-blames-weak-economy-for-slide-to-full-year-loss/>
- LuSE, 2021, African Markets, LuSE all shares index, pp. 1-1. <https://luse.co.zm/>
- Marone, H., 2003, Small African stock markets, The case of the Lusaka Stock Exchange, 3(6): 27-28. <https://www.imf.org/en/Publications/WP/Issues/2016/12/30/Small-African-Stock-Markets-The-Case-of-the-Lusaka-Stock-Exchange-16229>
- Mato, A., 2015, Cancer Mortality, *Journal of Health and Sciences*. <https://www.jhsci.ba/ojs/index.php/jhsci>
- Mugenda, O. M., and A. G. Mugenda, 1999, *Research Methods: Quantitative and Qualitative Approaches*, Nairobi Acts Press. [https://www.scirp.org/\(S\(czeh2tfqyw2orz553k1w0r45\)\)/reference/ReferencesPapers.aspx?ReferenceID=1808090](https://www.scirp.org/(S(czeh2tfqyw2orz553k1w0r45))/reference/ReferencesPapers.aspx?ReferenceID=1808090)
- Nyati, M., 2018, Measuring and testing a modified version of the South African financial cycle, *Economic Research Southern Africa*, 1(1). https://econrsa.org/wp-content/uploads/2022/06/working_paper_869.pdf
- Paudel, R., 2005, Financial Development and Economic Growth, *Nepal Open University, Maanbhawan*, 1(1). https://www.researchgate.net/publication/347508761_Financial_Development_and_Economic_Growth_Evidence_from_Nepal
- Schiereck, D., 2018, Are green bonds priced differently from conventional bonds?, *Journal of Asset Management*, 19(6). <https://link.springer.com/article/10.1057/s41260-018-0088-5>
- Securities and Exchange Commission of Zimbabwe, 2021, *Collective Investment Schemes*. <https://seczim.co.zw/collective-investment-schemes/>

Yamane, T., 1967, *Statistics, An introductory analysis*, 2nd ed. New York: Harper and Row. <https://search.worldcat.org/title/Statistics-:-an-introductory-analysis-2nded/oclc/299725866>