



Investigating the Influence of Zanzibar Infrastructures on Investment Decision

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Abstract— The purpose of this study was to investigate the influence of Zanzibar infrastructures on investment decision. This study used location theory which ought to be considered in launching business and this made the study complete. The study was conducted across different districts in Zanzibar with sample space of 352 respondents. The data were collected using structured questionnaire and analyzed using SPSS. The results revealed that the relationship between country's infrastructure and investment decision found to be reliable with Cronbach's Alpha range between 0.85 to 0.87 which is above the required range. Although, the study was conducted among 352 businesspeople in Zanzibar, yet the sample was reliable as the KMO = 0.92 which is above threshold ($KMO \geq 0.6$) and BTS was significant with $p \leq 0.00$. Following the hypothesis testing conducted using various regressions including multiple linear, stepwise and group wise regressions, the evidence was not enough to reject the hypothesis of this study. It was therefore concluded that there is a relationship between country infrastructure and investment decision. This study recommends the government through Zanzibar Water Authority to improve the clean water infrastructure. Also, the businesspeople should consider the benefits of other infrastructures on various business activities. Instead of focusing more on clean water business related, they should also diversify to transportation and technology related business.

Keywords— investment, investigation, infrastructures, decision, Zanzibar.

INTRODUCTION

Zanzibar as a partner state in the United Republic of Tanzania has been a hub of business for centuries in eastern and central Africa. The people from various parts of the world including Germany, UK, Iran, and Arab countries settled in it. Among the businesses that were conducted are gold, ivory, and spices. For many years Zanzibar was a leading cloves exporter in the world (World Bank, 2010). Although cloves are still reliable in Zanzibar however the exportation is not the same as it was before. It was acknowledged that the tourism sectors are contributing more in Zanzibar economy compared to agriculture for couple of years. The study of World Bank (2010); Said & Bahogo (2015); Othman Abbas (2016); Ussi & Wilson (2011) concludes that the tourism investments are the pillars that support Zanzibar economy from early 1990's. Apart from private investments available in Zanzibar, there are also government owned investments which are key players to Zanzibar economy. The research of Suleiman & Hamad (2017) highlighted that the



number of State-Owned Enterprises (SOEs) were 25 during 1990s, however they declined to 12 in 2002 due to lack of technical skills for management staffs, corporate governance, and improper use of resources. Similarly, the total number of private investments approved by Zanzibar Investment Promotion Authority (ZIPA) since it was enacted was 626 with the total value of USD 5.1billions (ZIPA, 2017). Zanzibar as small island economy its investment is different compared to partner state (Mainland Tanzania) not only by its size but also its accessibility to international market. This is mainly due to the minimum productivity, less competition in business and labour productivity is very low even when compared to other small island economies like Seychelles and Mauritius. The study of World Bank, (2007) addressed that the survey conducted in Zanzibar regarding investments shows that tax rates, tax administration, infrastructure including roads and electricity, cost and access of finance are top obstacles to them. Zanzibar Government (2011) has also observed the business climates challenges and detailed them in Zanzibar vision 2020. Among their objective(s)are to infuse new technology, improve infrastructures, revise investment policy, promote transparency and efficient institutional setup, fight against corruption and increase labour productivity. The policy is also addressing the significance of improving port, harbours and air transport system in advance in order to meet the requirements of future investors, however, the implementation is still far behind (Zanzibar Government, 2017). The delay to resolve the challenges affects Zanzibar investments trends. Many cases were reported for the past few years which relate to challenges of Zanzibar infrastructures.

Firstly, while Zanzibar government is negotiating the construction of new port the capacity of the existing Zanzibar port to accommodate more cargo at a time is still a challenge. International vessels delay in offloading containers. This leads to additional charges where the burden comes to Zanzibar businesspeople. For instance, CMA CGM group, a line that is used by Zanzibar businesspeople to ship their cargo from various countries to Zanzibar announced that they will implement an emergency operational surcharge equivalent to USD 225 per Twenty-foot Equivalent Unit (TEU) to her Zanzibar customers due to the increase of deterioration at Zanzibar port for 15days which is beyond the CMA CGM control (CMA CGM, 2016). This made the investors to delay their business activities while they are waiting for the issue to be resolved. Secondly, the construction of new airport terminal of international flight which will streamline operations as the part of infrastructure improvement which began on 2011 was stopped in 2012 because some features of the project did not meet the terms of International Civil Aviation Organization (ICAO). Zanzibar government found the solution and appointed Aéroports de Paris Ingénierie (ADPI) to resume the construction (Aéroports & Ingénierie, 2013). However, more time is needed for the project as there is no sign of completion yet. Thirdly, the distribution of internet fibre cable around Zanzibar as special project between ministry of Communication and infrastructure with Zanzibar Telecom Limited (Zantel) started in 2011. All ministries, SOEs and private companies must be connected. The expectation of this project when successfully completed was to provide fastest access of internet within Zanzibar which will solve the technology challenge in Zanzibar. However, the internet speed in Zanzibar is still limited. Many tourists highlighted that patience is needed when you are using internet even for the common need like reading

emails and news. Moreover, the study of (Salim, Shayo, Abaho, & Sheikh, 2013) concluded that the low level of internet connectivity, high cost cyber insecurity makes the investors to think twice since the deliverable will not reach to their expectation. Fourthly, the constructions of submarine cable that has capacity of 132kV which is almost double of the capacity that Zanzibar Electricity Corporation had before, completed in 2013. The main objective of this project was to improve the infrastructure for the investors including tourists' hotels in Zanzibar (Schurrer, 2015). However, the availability of electricity within Zanzibar is still challenging, more than half of Zanzibaris don't have electricity yet (Kiondo & Mosha, 2017). Fifth, various projects were enacted by Zanzibar water authority (ZAWA) in order to improve water supply and sanitation services both urban and rural areas. Some of those projects are Zanzibar Urban Water and Sanitation project which started 2008 to 2015, China Aided Zanzibar Well Drilling and Water Supply Project started March 2013 and last for 22months, Zanzibar Urban Water and Sanitation Project started March 2013 to December 2017. Zanzibar government tirelessly made a great effort to find fund from donors to finance these projects (ZAWA; URT, 2014; ADF, 2012). The main objective of ZAWA is to find permanent solution for water in Zanzibar. The question that eats the people's minds in Zanzibar is that following all these projects still the problem of water is increasing. The researcher found no reason of being silent, therefore intends to conduct technical study to analyze whether there are any impacts on investment decisions caused by the existing infrastructures in Zanzibar. More specifically, this study aims at examining the influence of infrastructures accessibility on increasing the number of investments in Zanzibar, investigating the contribution of infrastructures on improving the existing investments in Zanzibar and determining the relationship between the Zanzibar infrastructures and investment decisions.

LITERATURE REVIEW

The concept of infrastructure refers to the set of fundamental facilities and systems serving a country, city, or other areas, including the services and facilities necessary for its economy to function. Infrastructures also induce capital-intensive facilities that are not of public interest (Palei, T, 2015). The economic point of view denoted to such facilities as a physical infrastructure. In the scientific literature, the role of infrastructure is evaluated by the services provided by the physical infrastructure assets. Infrastructure services, such as transportation, energy, telecommunications, and sanitation, provision of water and safe disposal of waste are fundamental to all kinds of household activities and economic production. Such infrastructures accessibility is believed to influence the increase of the number and improve the existing investment. Specifically, Investment is characterized as the stock of capital owned either by the citizen of a country or by foreign companies. It also refers to an arrangement in which the investor invests and controls (manages) the project or entity in which he or she invests. The definition assumes that economic infrastructure relies on physical networks. Avran et al. (2009) also define the investment in general as expenditure made today to generate a gain in future. According to capital formation (Neoclassical theory) and technological spillover (endogenous theory) the division of capital into domestic and foreign investment will allow the impact of foreign direct investment to be separated from that of domestic

investments. FDI is defined as a company from the home country making a physical investment into building the subsidiary industries in host countries (Ghasal and Saxena, 2012, p.561), usually developed by Multinational Corporations (MNCs) with headquarters in the developed countries, whereas Domestic investment refers to the stock of capital owned by the citizen in a country rather than owned by foreigners. The Investment Decision relates to the decision made by the investors or the top-level management with respect to the amount of funds to be deployed in the investment opportunities. A company decides to invest to develop and stay in the competitive market. It's a process that has been discussed and dealt with by international corporations including European Commission, World Bank, and others. The decision on investment can be done in either fix investment including machinery, buildings, or plants; or monetary investment such as bond or stock etc (Virlics, A. 2013). Both forms of investments can stimulate the growth of the companies. The decision to invest or not depends upon the amount of profits where investor expects, unit cost of the asset, and the availability to finance the investment, and how to invest (Hardourt et al. 1967). Moreover, the demand to plan an investment is influenced by the investor's past profit experience and his guesses about future profit opportunities. In fact, Businessmen are willing to invest in stocks as well, where their decision depends on their experience and the expected rate of sales (Virlics, A. 2013).

The Value of Business Climate

The favorable business climate is the basic requirement for domestic and international investors (Owusu-Antwi, Antwi, & Poku, 2012). It plays the key role in attracting Foreign Direct Investment (FDI) (Krifa-Schneider & Matei, 2010). As FDIs are the part of Multinational corporations (MNCs), they always consider the several factors particularly business climate when it comes to investing in developing countries (Ganni, 2011). Therefore, it is the role of the government to enforce policies to create investor's friendly climate (Khan, Khan, Zaman, Irfan, & Khatab, 2014) by fastening the business application processes, avoiding bureaucracy, increasing incentives to investors, fighting against corruptions, simplifying regulations and contract implementation (Ganni, 2011). However, due to financial constraints and other resources, government is forced to team-up with Private Corporations to support business climate variables (Emirullah & Azam, 2014) which include cost factors, market factors, labour factors, transport factors and tax regime and regulations (Lahimer, 2007). The business climate factors can affect the firm's performance positively and negatively (Tran Quang & Tran Huu, 2010). During the time where labour cost, utility cost, finance cost, raw material cost and semi-finished goods cost are high the investments are diverged (Kaya, 2009) and domestic trading will experience considerable dropping on their annual gross margin (Nguimkeu, 2016). Although the constraints of doing businesses differ from country to country, still the climate will impact the performance collectively (Pokorná, 2016) while if the trade openness and efficient policies both monetary and fiscal are free from corruption can bring more investors (Khan et al., 2014).

The Influence of Infrastructures on Investment Decisions

The infrastructure of a particular country can be either economic which include electricity, gas, water, transport, storage and communication or social infrastructure which are health and education (Blundell-



Wignall & Roulet, 2015). The extent of provision of these infrastructures differed from country to country in which it leads the investors to compare before investing (Artz et al., 2016). Although the difference is due to priorities that the country has other than infrastructure (Ohnsorge et al., 2017) however, the countries with well-developed network of roads, airports, water supply, electricity, communication (Owusu- Antwi et al., 2012) and accountable institutions that can supply the services without delaying or corruption (Carvalho, 2016) can highly attract foreign investors. The biggest challenge is to provide those services to business and domestic use (Emirullah & Azam, 2014) as poor infrastructure is always disappointing the businesspeople to develop the competitive advantage (Khan et al., 2014). The performance of businesses is highly influenced by countries infrastructure, and this leads the investors to diversify their businesses across the countries (Hawawini, Verdin, & Subramanian, 2003; Kaya, 2009). The return-on-investment increases with good roadway, power supply (Reppen, 2015), seaport adequacy, efficiency and reliability for clearing imported, exported and transit goods (Tongzon, 2007). The good roads network will lower the transport cost and lead to the increase of firm productivity (Fiorini & Sanfilippo, 2017). The high price of electricity may lead the company to shift to poor technology usage which can cause negative consequences to firm productivity (Abeberese, 2012) and the poor railways, highways, outdated seaport, and airport facilities discourage the investments (Yu, 2017).

METHODOLOGY

There are various designs that can be applied to answer the questions of business research, among them are descriptive design, experimental design, correlational design (U. Sekaran and R. Bougie, 2016). In this study, the descriptive design was used, this design explains the approach of understanding the characteristics of the variables of the study in details as various references are available to clarify the concept and the relationship of the variables exist. The adoption of this design is due to the nature of this study. As it is business related research it is recommended to use the descriptive survey strategy (U. Sekaran, 2003). The nature of this study influences to adopt disproportionate stratified sampling technique. This is because the population is distributed across different industries, each contains different number of investments, there is a huge variance of number of investments between industries and the Investment is categorized between domestic and foreign. Data used in this study was collected using self-administered questionnaire. This instrument was used to collect data from various establishments like tourist hotels and restaurants, education sectors, health sectors, transport, storage and communication, financial intermediations, electricity, gas and water suppliers. The questions were prepared, printed on paper and distributed. The Likert-scale was used to grade the answers to the question, in which 1 = Strongly Disagreed, 2 = Disagreed, 3 = Neutral, 4 = Agreed, 5 = Strongly Agreed. The quantitative data analysis technique was implemented followed by selecting analytical software and conducting preliminary analysis. For this study Statistical Package for the Social Science (SPSS) software was used to analyze the data. The researcher was convinced to use SPSS since it can analyse statistically, can produce various statistical outputs in one glance, can produce a pictorial presentation like tables and graphs, it is user-friendly as data



editor screen and variable view look like spreadsheet. Questionnaire's data are still raw, and they cannot be used for starting analysis. There are some steps that need to be taken before starting analysis. These steps include data coding, data editing and data Transformation (M. Kumar et.al, 2013; U. Sekeran and R. Bougie, 2016). Since the data selected in Likert scale is already coded therefore it was transferred to SPSS straight away. The editing involves the editing of the survey which are incomplete response, double checked response like ticking both male and female, illogical response like outlier, incorporative response like checking same response in all questions and illegible respondent like the age limit (M. Kumar et.al, 2013). Moreover, M. Kumar advised three alternatives when such cases happened which are contacting the respondent, throwing out the questionnaire or deleting the questions. Data transformation involves the developing of variables from data entered in SPSS, the questions which fall under the same variable was added together. Categorically, the analysis conducted in this study were based on respondent characteristics, data characteristics, variable characteristics, and hypothesis testing using descriptive statistics as well as regression analysis.

RESULTS

This chapter presents the results obtained after analyzing the data collected from the field based on the following thematic areas; Data characteristics which include reliability test, validity analysis, normality analysis. Respondents' characteristics which is demographic analysis such as gender, marital status, age, and education background. Variable's characteristics such as minimum, maximum, average, and standard deviation of the variables used. Lastly, hypothesis testing using various regressions analysis, and testing of various regression assumptions such as multicollinearity and autoregression.

Data Characteristics

The reliability analysis presented in Table 1 shows the Cronbach's Alpha of six factors which are roads (RO), Information and Communication Technology (ICT), Clean Water (CW), Seaport and Airport (PSA), Electricity (E) and Investment Decision (ID) range between 0.85 to 0.87 which is within the acceptable range and item correlation is above threshold. According to Tavakol and Dennick (2011) the acceptable values of alpha, ranging from 0.70 to 0.95 and item correlation should be above 0.3.

Table 1: Reliability Analysis

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Roads	83.24	169.42	0.67	0.87
ICT	83.70	160.52	0.74	0.85
Clean water	83.98	160.46	0.75	0.85
Port	83.65	166.18	0.69	0.86
Electricity	83.70	166.67	0.70	0.86



Investment decision	91.14	193.61	0.65	0.87
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The validity analysis conducted shows that the Kaiser-Meyer-Olkin (KMO) is 0.923, Bartlett's Test of Sphericity (BTS) is 3472.69 ($p=0.00$) both signified that the sample used is adequate. According to Chan and Idris (2017), the recommended value of KMO is 0.6 and above, also BTS should be significant with $p \leq 0.05$. The summary of results is shown in Table 2

Table 2: KMO and BTS test

Test	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.923
Bartlett's Test of Sphericity - Approx. Chi-Square	3,472.69
Df	300.00
Sig.	0.00

The skewness value provides an indication of the symmetry of the distribution whereas kurtosis value measures the amount of "peakness" of the distribution. The exact value of skewness and kurtosis can be found in Table 3. It can be observed that most of the values are approaching zero which is equivalent to normal distribution. The study of Kim (2013) defined critical values of rejecting normal distribution based on sample size (n). He reported that when $n < 50$, Z-scores of either skewness or kurtosis are larger than 1.96, when $50 < n < 300$, Z-scores are more than 3.29 and when above 300, either absolute skew value is larger than 2 and kurtosis is larger than 7 may be used as reference as substantial non-normality.

Table 3: Skewness and Kurtosis

	N	Mean	Std. Deviation	Skewness	Kurtosis
Roads	352	18.64	3.31	- 0.04	0.02
ICT	352	18.18	3.51	- 0.03	- 0.23
Clean Water	352	17.90	3.48	- 0.26	0.47
Port	352	18.23	3.41	- 0.09	0.39
Electricity	352	18.18	3.36	- 0.15	0.58
Investment Decision	352	10.74	2.20	- 0.40	

Respondent Characteristics

Table 4 shows that 59.94 percent of the respondents are male, and 40.06 percent are female. The ratio of male and female resembles to Zanzibar statistics. This indicates that males are more engaged in business than females as far as Zanzibar is concerned. Respondents with the age of 20-30 years are more involved in business followed by those with the age of 31-40 years and few of them are those which are above 50 years. Secondary education is found to be the highest education level for most of the businesspeople in



Zanzibar equivalent to 58.84 percent followed by those who have completed certificate education level. Diploma graduates were rarely involved in business as only 8 percent of them have engaged themselves in business. This may be because most of them are waiting to join degree level. Interestingly, first degree graduates developed interest of doing business as they represent 13.92 percent of respondents.

Table 4: Respondents Characteristics

Demographic Characteristics	Frequency	Percentage
Gender		
Male	183	52.00
Female	169	48.00
Total	352	100.00
Age Group		
Below 20	27	07.70
21-30Years	150	42.60
31-40Years	90	25.60
41-50Years	55	15.60
Over 50Years	30	08.50
Total	352	100.00
Marital Status		
Married	144	40.90
Single	208	59.10
Total	352	100.00
Highest Education Level		
Secondary	205	58.24
Certificate Level	69	19.60
Diploma	29	8.24
Degree	49	13.92
Total	352	100.00

Variables Characteristics

This section summarizes the main features of variables used in this study based on general information which has been collected. It explained the maximum, minimum, average, and respective deviation of the response from the mean as shown in Table 5.

Table 5: Variable Characteristics

	N	Minimum	Maximum	Mean	Std. Deviation
Roads	352	9	25	18.64	3.31
Port	352	8	25	18.23	3.41

Electricity	352	5	25	18.18	3.36
ICT	352	9	25	18.18	3.51
Clean Water	352	5	25	17.90	3.48
Investment Decision	352	3	15	10.74	2.20

Generally, the average responses of all variables are high equivalent to 17.9 and above, except the investment decision which shows medium responses equivalent to 10.74. It can be observed that the road conditions and infrastructure are most reliable for business in Zanzibar while other infrastructures like ports, electricity, ICT, and clean water are slightly lower. On the other hand, businesspeople within the Isles were found to be reluctant on business location, profitability and type of business as they are contributing highly on making investment decision.

Hypothesis Testing

The hypothesis of this study is to understand that there is a relationship between country infrastructure and investment decision. Various regressions including simple multiple, stepwise and group wise regressions were conducted to test the existence of relationships.

The basic regression assumptions like multicollinearity and autocorrelation were tested and discussed prior to draw any conclusion on whether to accept or reject the hypothesis. Table 6 shows various measures of multicollinearity such as tolerance level, Variation Inflation Factor (VIF), eigenvalue and condition index. It can be recalled that VIF measures the level of variance of estimated regression coefficient (R^2), it increases when multicollinearity exists while the reciprocal of it is referred to as tolerance level. Likewise, Eigenvalue is the corresponding value of correlation matrix of independent variable which always ranges between 0 and 1, while the square root of the ratio between maximum Eigenvalue and Eigenvalue of each variable is the condition index.

Table 6: Multicollinearity Diagnostics

	Tolerance	VIF	Eigenvalue	Condition Index
Roads	0.51	1.94	0.02	16.98
ICT	0.43	2.31	0.02	18.54
Clean Water	0.44	2.29	0.02	19.44
Port	0.53	1.88	0.01	22.06
Electricity	0.52	1.94	0.01	24.14

It can be observed that the values of all measures in each variable are within the range of rule of thumb of each measure. According to Josh (2012) it must not exceed 5 to 10, and tolerance level must not be lower than 0.1 to 0.2, condition index must not exceed 30 while Eigenvalue must not approach 0.

Therefore, there is no multicollinearity among variables used. In other words, there is no strong relationship existing between variables. The value Durbin-Watson shown in Table 7 explains the degree of autocorrelation existed among variables. When the value of Durbin-Watson ranges between 1.5 to 2.5, it indicates that there is no autocorrelation. For that scale, the results revealed that there is no autocorrelation existing since the value of Durbin-Watson is only 1.81. It was also found that 44 percent of the variables were explained in the model as the value of R square is 0.44.

Table 7: Autocorrelation Test and Model Fit

Model	R	R Square	Adjusted R Square	Sig. F Change	Durbin-Watson
1	0.66	0.44	0.43	0.00	1.81

A simple multiple regression between investment decision and country infrastructure variables disclosed the existence of significant contribution in most of variables as shown in Table 8. Except Roads which have no significant contribution on investment decision as $p = 0.83$ ($p \geq 0.05$).

Other variables have significant contribution. The significant level for clean water and port is 0.00 which is equivalent to $p \leq 0.01$, while significant level for ICT is 0.01 which is equivalent to $p \leq 0.05$. Therefore, there is no enough evidence to reject the null hypothesis and consequently the study concludes that there is a relationship between country infrastructure and investment decision.

Table 8: Variable contribution in simple multiple regression model

	Unstandardized beta	Std. Error	Standardized Beta	t	Sig.
Roads	0.01	0.04	0.01	0.21	0.83
ICT	0.11	0.04	0.17	2.74	0.01
Clean Water	0.13	0.04	0.20	3.35	0.00
Port	0.16	0.04	0.24	4.40	0.00
Electricity	0.11	0.04	0.17	3.09	0.00

Table 9 presents the results of stepwise regression which identify clean water as the main factor which influences investment decision in Zanzibar. It represents 33 percent of R-square out of 44. When seaport and airport infrastructure were added in the model, the R-square changed by 7 percent, when electricity infrastructure was considered the R-square changed by 3 percent while ICT contributed only one percent. Unexpectedly, Roads has not contributed anything.

The results also revealed that the R-square change in all variables was significant with $p \leq 0.00$. Therefore, it can be concluded that, there is significant relationship between clean water facility, seaport and airport, electricity infrastructure as well as ICT infrastructure in investment decision in Zanzibar. Also, there is no significant relationship between roads and investment decision in Zanzibar.

Table 9: Stepwise Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		Durbin-Watson
					R Square Change	Sig. F Change	
1	.57 ^a	.33	.33	1.81	.33	.00	
2	.63 ^b	.40	.40	1.71	.07	.00	
3	.65 ^c	.43	.42	1.67	.03	.00	
4	.66 ^d	.44	.44	1.66	.01	.00	1.811

a. Predictors: (Constant), Clean Water
 b. Predictors: (Constant), Clean Water, Port
 c. Predictors: (Constant), Clean Water, Port, Electricity
 d. Predictors: (Constant), Clean Water, Port, Electricity, ICT
 e. Dependent Variable: Investment Decision

Groupwise regression was conducted to determine whether contribution of each infrastructure on investment decision depends on demographic characteristics. When demographic characteristics were not considered, the ranking of the infrastructure was clean water followed by ports then electricity and lastly ICT as shown in the footnote of Table 9. The results in Table 10 confirmed that the factors which influence investment decision are gender oriented. When gender was considered by choosing the dominant sample which is male, the ranking was clean water followed by electricity then ports and lastly ICT as shown in the footnote of Table 4.10. Table 11 demonstrated that the relationship between infrastructure and investment decision is also influenced by marital status.

When dominant sample which is married people was considered, the ranking of infrastructure appeared as ports contributed more followed by electricity and lastly clean water while ICT was not included in the rank. The results shown in Table 12 confirmed that the priority on which country infrastructure has more influence on investment decision also depends on education level. Unexpectedly, when the sample of graduate people which is the most dominant was considered, the ranking was clean water followed by ports, the remaining factors like electricity, ICT and roads were not ranked.

Table 13 shows the importance of different infrastructure on investment according to age bracket. When the businesspeople between the age of 21 to 30 which is dominant sample were compared to others, the results revealed that port is given the most priority followed by clean water and lastly electricity. Other factors like ICT and roads were excluded in the ranking. Table 14 summarizes the ranking of various infrastructure determinants based on most dominant demographic characteristics. Overall, the group-wise regression results confirmed that the demographic characteristics of businesspeople in Zanzibar have influenced the prioritization among various infrastructure on making investment decision.

Table 10: Group wise regression - Effect of Gender

Model	R		R Square	Adjusted R Square	Change Statistics			Durbin-Watson Statistic	
	Gender = Male (Selected)	Gender ~= Male (Unselected)			R Square Change	F Change	Sig. F Change	Gender = Male (Selected)	Gender ~= Male (Unselected)
1	.480a		0.23	0.23	0.23	54.10	0.00		
2	.527b		0.28	0.27	0.05	11.78	0.00		
3	.548c	.742	0.30	0.29	0.02	5.87	0.02	1.95	1.83

a. Predictors: (Constant), Clean Water
 b. Predictors: (Constant), Clean Water, Electricity
 c. Predictors: (Constant), Clean Water, Electricity, Port
 d. Unless noted otherwise, statistics are based only on cases for which Gender = Male.
 e. Dependent Variable: Investment Decision

Table 11: Group-wise Regression – Marital Status

Model	R		R Square	Adjusted R Square	Change Statistics			Durbin-Watson Statistic	
	Marital Status = Single (Selected)	Marital Status ~= Single (Unselected)			R Square Change	F Change	Sig. F Change	Marital Status = Single (Selected)	Marital Status ~= Single (Unselected)
1	.657a		0.43	0.43	0.43	107.9	0.00		
2	.705b		0.50	0.49	0.07	18.31	0.00		
3	.722c	0.59	0.52	0.51	0.02	7.17	0.01	2.01	1.70

a. Predictors: (Constant), Port
 b. Predictors: (Constant), Port, Electricity
 c. Predictors: (Constant), Port, Electricity, Clean Water
 d. Unless noted otherwise, statistics are based only on cases for which Marital Status = Single.
 e. Dependent Variable: Investment Decision

Table 12: Group-wise Regression – Education level

Model	R		R Square	Adjusted R Square	Change Statistics			Durbin-Watson Statistic	
	Education Level = Bachelor's Degree (Selected)	Education Level ~= Bachelor's Degree (Unselected)			R Square Change	F Change	Sig. F Change	Education Level = Bachelor's Degree (Selected)	Education Level ~= Bachelor's Degree (Unselected)
1	.660a		.436	.431	.436	94.35	.000		
2	.733b	.575	.537	.529	.101	26.25	.000	1.971	1.872

- a. Predictors: (Constant), Clean Water
 b. Predictors: (Constant), Clean Water, Port
 c. Unless noted otherwise, statistics are based only on cases for which Education Level = Bachelor's Degree.
 d. Dependent Variable: Investment Decision

Table 13: Group-wise Regression – Age bracket

Model	R		R Square	Adjusted R Square	Change Statistics			Durbin-Watson Statistic	
	Age = Between 21-30 (Selected)	Age ~= Between 21-30 (Unselected)			R Square Change	F Change	Sig. F Change	Age = Between 21-30 (Selected)	Age ~= Between 21-30 (Unselected)
1	.695a		0.48	0.48	0.48	138.6	0.00		
2	.736b		0.54	0.54	0.06	18.60	0.00		
3	.746c	0.57	0.56	0.55	0.02	5.15	0.02	1.80	1.72

- a. Predictors: (Constant), Port
 b. Predictors: (Constant), Port, Clean_Water
 c. Predictors: (Constant), Port, Clean_Water, Electricity
 d. Unless noted otherwise, statistics are based only on cases for which Age = Between 21-30.
 e. Dependent Variable: Investment Decision

Table 14: Demographic based Ranking of Infrastructure determinants

Demographics	Ranking				
	Clean water	Ports	Electricity	ICT	Roads
Gender - Male	1	3	2	nr	Nr
Marital Status - Married	3	1	2	nr	Nr
Education Level - bachelor's degree	1	2	nr	nr	Nr
Age bracket - 21 to 30 years	2	1	3	nr	Nr

* 1 = First choice, 2 = Second choice, 3 = Third choice, nr = not ranked

CONCLUSION

The objective of this was to examine the influence of country infrastructure on investment decision in Zanzibar. More specifically, the study focused on selected infrastructure such as roads, clean water, electricity, ICT, seaport and airport. A total of 352 respondents were selected randomly among businesspeople located in different areas in Zanzibar. The data was analyzed using SPSS and the hypothesis was tested using regression analysis. The data used to analyse the relationship between country's infrastructure and investment decision found to be reliable with Cronbach's Alpha range between 0.85 to 0.87 which is above the required range. Although, the study was conducted among 352 businesspeople in Zanzibar, yet the sample was reliable as the KMO = 0.92 which is above threshold ($KMO \geq 0.6$) and BTS was

significant with $p \leq 0.00$. Following the hypothesis testing conducted using various regressions including multiple linear, stepwise and group wise regression, no enough evidence was to reject the hypothesis of this study. It was therefore concluded that there is relationship between country infrastructure and investment decision. When Stepwise regression was conducted, clean water appeared to be the main factor which influences investment decision in Zanzibar, it represents 33 percent of R-square out of 44, followed by seaport and airport infrastructure which contributed 7 percent of R-square, electricity contributed 3 percent R-square, and ICT contributed only one percent. Unexpectedly, the contribution of roads infrastructure has negligible weight. When group wise regression was conducted based on demographic factors, the priorities on infrastructure were inconsistent. When gender was considered, all males rank clean water as priority followed by electricity, ports, ICT and excluded roads. When married people were considered, most preferred infrastructure was ports followed by electricity, clean water while ICT was excluded. When the sample of graduate people was considered, they rank clean water first followed by ports, the remaining factors like electricity, ICT and roads were excluded.

When the businesspeople between the ages of 21 to 30 were selected, their first preference was air and seaport followed by clean water and lastly electricity, other factors like ICT and roads were excluded in the ranking. It is well understood that most of the businesspeople in Zanzibar emphasized on having clean water to streamline day to day business activities. Impliedly, more people are engaged to businesses which are consuming more water such as tourism hotels, restaurants, constructions, etc. It is worth noted that other infrastructure including electricity, roads, seaport, airport, and ICT are not questionable by most of the businesspeople. This may be due to their significance on the existing business activities, or they are considered as more basic in Zanzibar. Following to study findings and implications, this study addresses some recommendations to government, businesspeople, and various stakeholders.

- There is a need for the government through Zanzibar Water Authority (ZAWA) to improve the clean water infrastructure.
- The businesspeople should consider the benefits of other infrastructure on various business activities. Instead of focusing more on clean water business related, they should also diversify to transportation and technology related business.

The scope of this study was limited to Zanzibar, existing business activities with various infrastructure such as clean water, electricity, seaport, airport, and ICT. This leads to have general overview in all aspects, however there is a gap that needs to be examined.

Future researchers can be more specific in term of business activities and infrastructure. For instance, the study related to existing infrastructure and petroleum exploration, or power supply (electricity) on small scale industries, etc.

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