

Statistical Investigation on the Brain Drain of 264 Guineans People Living Outside the Country

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Abstract In Guinea, the flight of brains continues to grow. While the government needs men skilled in the coming years to respond to the economic order needs, cultural, educational or remarkable those are already planning to do so in the future, and to track the progress of the country. The aim of this article is to identify the degree of acceptance of 264 Guineans people living outside the country. We used a statistical method to investigate a total of 12 factors in measuring the fight against the brain drain in Guinea. This investigation found eight essential parameters through some foreign people interviewed with a questionnaire. This questionnaire helps in ascertaining the level of acceptance to return in helping the country in areas such as security, economy, health, education, and other areas. The distribution and collection of the questionnaire was used, and the responses of 264 respondents' cadres were recovered using sampling. The factors studied have a reliability coefficient of 0.944. The study showed that the return to the fold in the direction of helping the country move forward will be a positive contribution in achieving the objectives of acquiring people, maintaining retention, and decreasing the brain drain. This study recommends that the Guinean authorities should focus more on the development of the quality of studies and on the treatment of complaints and queries effectively and appropriately in decision feedback from managers. Also, they should involve them in all future strategies, and establish an ongoing communication with them using various communication channels in order to achieve their objectives.

Keywords: foreign people, brain drain, Guinean authorities, quality of studies

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1. Introduction

The phenomenon of "brain drain" is not new and dates back to the 1950s [1], at the time of the mass exodus of scientific and British engineers to the United States. However, international changes have strongly developed since the 60s. According to UNESCO, over 30, 000 Africans holding a 3rd cycle university degree live outside the continent. Also, a stock of 25,000 Africans who came to study in European Union countries have not returned to their countries of origin. The World Bank estimated in its 1995 report that Africa has lost a third of its executives between 1960 and 1987; thus, parties to the industrialized countries and 23,000 academics and 50,000 executives still leave the continent each year [2,3]. Studies of W. J. Carrington and Detragiache E. point out that African immigrants to the United States are mainly the graduates [4]. Easterly and Nyarko take the data one step further and perform calculations which compute the costs and benefits of the higher education, taking explicit account of migrations out of the local economy due to the Brain Drain [5]. The Toronto Globe and Mail (November 2, 2005) went so far as to write an article about the African brain drain entitled "The new slave trade: A poor country's

best workers" in which it said warned that rich countries could "suck all of the human capital out of the poor countries, leaving them forever destitute" [6]. Today, the real meaning of globalization can be defined as enabling migration dynamics while at the same time promoting a rise in educational levels. Thus, African countries usually raise questions and reflections on the sustainability of the increase in the brain drain. The problem of the flow of skilled migrants coupled with the fragility related data, poses the importance of actually facing the problem of brain drain today. Therefore, a very deep analysis is needed. From data relating to the Guinean diaspora on the statistical basis of many observers, we had to reflect on the factors that explains the brain drain in the outer territories. For thousands of Guinean expatriates who wish to contribute to national development, initiatives to stop the exodus of the professional Guinea offer new opportunities. Now more than ever, this is an opportunity we should not overlook to turn this scourge (the brain drain) into a very important new scourge. Thus, the professionals included scientists, doctors, engineers, conference teachers, economists, information technology specialists, and other highly qualified experts that are lacking in the country. From our analysis, we highlight the factors that compel the executives not to agree in returning to the frame. Many countries have contributed to the

formation of a large number of cadres and students Guineans through the provision of postgraduate scholarships that allows them to receive quality education in large universities abroad. After their training, the graduates return back to Guinea with great skills and many experiences crowned with good control in several areas. These graduates are optimistic in getting the service of the nation in order to make valuable contributions towards the development of their country. Unfortunately, many of these executives after their return are increasingly finding it difficult to begin a career in the government or the private sector. This occurs as a result of the lack of employment or the absence of support in promoting young graduates who have returned from their training in various foreign universities. Today, many people still struggle to obtain a job worthy of their training. As a result, they are forced to become volunteers by serving simple contract to make ends meet. However, others remain idle even though they have the skills and training necessary for positions of high responsibility. This fact pushes us to realize that this promotes an unfortunate plague i.e. the brain drain. Africa in general suffers, particularly Guinea, because young people are increasingly discouraged by the thought of returning to their country. This is due to the absence of support and help, of whom many are victims. Basically, this is the reason many prefer to stay in Europe, America, Asia, and even in other African countries instead of returning to serve their nation. Thus, if the Guinean government and international institutions continue to invest huge financial resources for their training, their efforts may be wasted and would be useless if there is no proper monitoring of graduates at the end of their training for their effective use in areas under their jurisdiction. This statistical method uses reliability, Item and factors analysis to explain the frame acceptance through some factors. We will also put in evidence some explanation on this article explaining the fears which are exaggerated. The brain drain has positive and negative effects on African countries in particular Guinea. It is not easy that Africans are less well equip because of the opportunity through qualified people to migrate to rich countries..

2. Literature

We build upon a rich literature that gives a much more balanced picture of the possibility of "brain gain" in addition to or instead of "brain drain" [7-19]. Since the 60s, some African countries have experienced developments with optimism. Subsequently, they hope for a sudden change without thinking about their miserable conditions. This position promoted the rapid growth of the world economy through which the SSA should receive priority [20] stated that the community of donors, sharing that feeling, has not failed to provide the necessary assistance [21]. This period led to the training of several African executives in the greatest institutions of Europe. However, many of them have chosen to stay there once their training is complete. As against the same phenomenon, it affected professionals who, not being able to fully reintegrate into their country of origin, decide to return back to the country where they were educated [22]. According to His Excellency, Mr Abdou Diouf, President of the Republic of Senegal, "governments have a role to play in creating and

strengthening national scientific and technological capabilities, by setting up a vigorous policy of Science that makes up regional and international cooperation. Hence, a prerequisite for stopping the brain drain from Africa is a victim." For this cooperation to be more judicious, Mr Cheick Modibo Diarra stated that "countries should pool their meager resources to create sub-regional training institutions and research to contribute the fight against the brain drain in Africa» [23]." This idea is a way to get the African country in this situation. As regards Guinea, no return to the frame of some intellectual elites, Guinea has relatively well-defined factors. Although the number seems calculably hard, we can still consider it. Therefore, it needs to be seriously corrected. The No Return reasons are really based on the attractiveness of the developed countries: the best working conditions, wages are high, acceptable health care, better educational opportunities, rights and freedom of citizens, and also the presence of a political stability that prevails. Better working opportunities in scientific research and in the development of Science, freely facilitates the final hour of literature and multiple meetings with some experts in different fields from various countries. Regarding the Guinean case, the most crucial and very powerful factors are ethnocentrism, regionalism, and above all, selfishness. Thus, countries of such usually funds education specialists. In some cases, they finance their training abroad, but receive no return on their investment. Subsequently, this may involve few top executives Guineans living abroad, their ability to attract foreign investment, or even their research on Guinea. Specifically, this article will aim to inform African government, particularly that of Guinea, to actively contribute to the integration of graduates returning to giving visibility that can enable the various employment sectors to know their route and to know that there are youth trained managers that can meet the expectations of any position of responsibility through quality training they undergone abroad. Thus, the enormous financial means invested in their training by collaborating countries and the Republic of Guinea would be a waste. This waste is to the extent that these graduates are more likely to put their knowledge to the service of the nation instead of remaining at nothing. As stated, those who choose to return to France may have difficulty finding a job; hence, this may encourage young scientists to extend their stay abroad [24]. Recent studies on brain drain have examined the issue from the perspective of the theory of the center and the periphery. Thus, this was illustrated by the following definition: "the brain drain [has] the loss of intellectual potential of developing countries, due to the fact that students studying abroad do not return home after the completion of their studies" [25]. Other authors such as Américo Ramos dos Santos, argues that the brain drain is a technology transfer in reverse which deprives developing countries of their highly qualified resources [26]. Chu noted that about 400,000 European graduates in Science and technology are now living in the United States, and thousands still go there every year [27]. A survey published in November by the European Commission found that only 13 percent of European professional scientists currently working abroad intend to return[28]. To achieve this objective at the end, the government will be obliged to set up a rapid recruitment structure from their tough training to provide

ongoing support and permanent support to all Fellows STATE serving as guide and counselor for good orientation and adequate employment based on their training. Therefore, this structure will be an important interface between the labor market and graduates as it could facilitate the rapid recruitment of those who meet employers through job vacancies and facilitate job search for many of these returning officers that the state alone cannot employ despite their level of education.

3. Research Objective

The brain drain continues to grow in African countries, especially Guinea, while the government contributed to the training of managers in the public service and private companies. The rapid enrollment growth and the economic crisis of the 1980s led to higher education which resulted to consequences in the deterioration of infrastructure and equipment, the significant decline in the quality of training and research, increased unemployment of graduates, the race for diplomas acquired abroad and especially the brain drain favored by the deplorable internal conditions (deterioration of social and economic conditions, poor governance, etc.) [29,30,31]. The objective of this study is to achieve acceptance of contentment investigation for the homecoming of 264 Guinean staff living outside the country, Guinea, Conakry. In particular, this study has three main objectives: investigating the acceptance of the return of 264 Guinean staff living outside the country, identify the key determinants that influence their acceptance for homecoming, and other reasons.

4. Research Questions

This study aims to answer the following questions:

What are the main factors that influence the acceptance of 264 Guinean frames living outside?

What is the degree of acceptance of 264 Guinean staff living outside?

5. Hypotheses

In order to conduct the study on the degree of acceptance of Guinean frames for their return to the national interest of the country, four Hypotheses were developed. They include:

H1: When salaries are low, this would lead to a reduction of the frames degree acceptance.

H2: Good performance of the country can increase acceptance of frames.

H3: When security managers are low relative to the management of the state, it could reduce the acceptance of frames.

H4: There is a positive relationship between good recruitment and acceptance of frames for return.

6. Research Methodology

Furthermore, this research will make use a survey question on some questionnaire numbers. Data is collected

through this method. On the other hand, secondary data will be collected from the intervention of some senior frames recognized exile.

6.1. Sample and Sampling Techniques

The sampling technique is one of the procedures adopted in this article to gain more knowledge through our investigative study. It is commonly used in qualitative methodology because the emphasis is on understanding, rather than on generalizing the concept under investigation. The sample for this article consists of Guineans executives living outside the country. A size of 264 sample frames was chosen. Respondents were 18 years and older. Respondents were from different countries of the world. Thus, they provided a variety of responses with other precision in the conclusion of the results. All research procedures were selected by the author, as it is imperative to use investigative procedures to totally solve the research problems of this article. Thus, our data were collected through a questionnaire delivered directly to the respondents. The questions were very simple and it was asked to avoid the probability of a wrong answer. And once it was collected, they were used to analyze and interpret the results.

6.2. Data Collection Instrument

This study collects information from Guinean frames because their answers were helpful in our study. The data collection instrument has enabled us to conduct our investigations in this work well. Thus, it is essential for obtaining good results. This allows us to get ideas by asking a few questions. The questionnaire was written in two versions (English Language and French). Therefore, this makes it easier for it to be understood by the respondents. Therefore, they were placed in a logical order of personal data that ends with suggestions frames. Basically, it consisted of two parts, 32 questions.

6.3. Data Collection Administration

The data collection method, led us to selecting two standard questions (quantitative and qualitative) for this grouping formula. Therefore, the collection was carried out through the aid of some good friends living outside the country. In addition, some presidents of associations in Guinean living outside the country were in direct collaboration with the researcher. With the help of some fellow workers, 264 frames including students, staffs, and trainees were invited to answer our questionnaires about the brain drain. To complete our investigation, the collections of respondents' answers were very helpful to fully draw conclusions using the SPSS software.

6.4. Data Analysis Method and Discussion

After data collection, the results were analyzed using SPSS and other Statistical software. However, the data were presented in this research with the use of numbers, graphs, and tables. This was done such that the data can understandably and reasonably be analyzed by the reader. Also, there were a total of 32 questions in the questionnaire. In addition, the explanation of the data will be observed through the methodology.

7. General Information

Table 1. Gender of respondents

Gender	Frequency	Percentage
Men	181	68.6%
Women	83	31.4%

In Table 1 above, 68.6% of respondents were men, while the remaining 31.4% were women.

Table 2. Age of respondents

Age	Frequency	Percentage
25-29	31	11.7%
30-39	61	23.1%
40-49	148	56.1%
50 plus	24	9.1%
Total	264	100%

Table 2 shows the age distribution of respondents. 11.7% are between 25-29 years and 23.1% had their ages ranging from 30 to 39 years. For those whose ages ranged from 40 to 49 years are constitute 56.1% of the whole samples and 9.1% were more than 50 years old.

Table 3. Educational levels of respondents

Educational level	Frequency	Percentage
Professional	37	14.02%
Bachelor	92	34.84%
Master	125	47.35%
Doctorate	10	3.79%
Total	264	100%

Table 3 denote the educational level and the area of the respondents According to the results, around 47.35% of the respondents have master level of education, 34.84% were educated to the bachelor level, and 14.02 % had professional level of education. However, it should be noted that 3.79 % had Doctorate educational qualification.

Table 4 show that Based on the area of living of the surveyed respondents that were observed, the different types included Asian (13.6%), American (8.0%) and African (12.5%) countries. Moreover, majority of the respondents were from European (65.9%).

Table 4. Living country of respondents

Areas of respondents	Frequency	Percentage
Africa	33	12.5%
Europe	174	65.9%
Asian	36	13.6%
American	21	8%
Total	264	100%

Table 5. Employment Type of respondents

Employment Type of respondents				
	Frequency	Percent	Valid Percent	Cumulative Percent
unemployed	17	6.4	6.4	6.4
Student	48	18.2	18.2	24.6
Official	79	29.9	29.9	54.5
Valid businessman / woman	59	22.3	22.3	76.9
Others	61	23.1	23.1	100.0
Total	264	100.0	100.0	

Table 5 above shows 264 Guineans frame who are living outside the country. For the frame respondents observed, the different categories included unemployed (6.4%), student (18.2%), trading (10.79%), official (29.9%), businessman/woman (22.3%), and other activities (23.1%). The majority of the employed respondents are in other activities sector or businessmen and women. However, this distribution shows the structure of 264 Guineans frame living outside the country.

8. The Analysis of Reliability and Factor Analysis

Validity and reliability of the research have to be examined on each phase of the research procedure which includes the questionnaire structure, the sample, data collection method, and proper analysis of findings [32]. Thus, research can be reliable but not valid; but if research approach is acutely valid, then it is also reliable.

Table 6. Item-Total Statistics

Variable	Summary for scale: Mean=30.9545 Std.Dv.=10.8382 Valid N:264 (Spread sheet1) Cronbach alpha: .944444 Standardized alpha: .936428 Average inter-item corr.: .653417				
	Mean if Deleted	Var. if deleted	Stdv. if deleted	Item-Total Correl.	Alpha if deleted
Age	28.32955	103.0391	10.15082	0.813787	0.939225
Gender	29.64015	112.8061	10.62102	0.405490	0.948899
Levels	28.54545	108.5207	10.41733	0.490553	0.946807
Areas	28.78409	115.0860	10.72781	0.086953	0.955094
Employment	27.57955	94.1831	9.70480	0.916343	0.933398
Acceptance	28.13258	93.2135	9.65471	0.768952	0.939745
Willingness	26.35985	107.1546	10.35155	0.615243	0.944224
Performances	28.70076	91.0430	9.54165	0.952645	0.931593
Salary	28.79167	91.2407	9.55200	0.921381	0.932872
Security	28.76894	92.5564	9.62063	0.942602	0.932182
Welfare	28.43561	89.3140	9.45061	0.945315	0.931875
Factors	28.43182	87.7605	9.36806	0.946381	0.932030

Subsequently, we observed in this table that Cronbach's alpha is 0.944. Thus, this determines a high level of frame acceptance consistency for our scale with this specific sample.

8.1. Factor Analysis

The table below shows the first step of our factor data analysis. We observed that some data cleaning procedures in the table must be removed prior to knowing which factors are dependent. In considering this prior to running factor analysis, it is at first Control, if all factors are dependent. The second step involves the removal of the factors which are not influenced by the analysis (data outliers). Lastly, it entails the diminution of the factors of the relevant analysis variables in order to see the exact number of factor analysis than is adequate to provide insight into the factors that can be used with further analysis. You will notice that the Figure 1 shows us very simple way the relationships between factors that influence the degree of acceptance the cadres Guineans living in outside of the country to return home. Also Figure 1 principally shows other factors that may better influences on the study of the brain drain through our investigation concerning our Guinean officials in particularly. First step (preliminary analysis).

Table 7. Results of Principal Components Analysis of the Guinean acceptance Tests for their return home

Variable	Factor Loadings (Unrotated) (Spread: Extraction: Principal components) (Marked loadings are >.700000)	
	Factor 1	Factor 2
Age	-0.861652	0.360672
Gender	-437160	-0.662760
Level	-0.552093	0.575186
Areas	-0.097223	0.053007
Employment	-0.942649	0.112478
Acceptance	-0.803849	-0.205783
Willingness	-0.677024	0.561723
Performances	-0.959637	-0.178466
Salary	-0.939673	-0.237806
Security	-0.955393	-0.161307
Welfare	-0.963265	-0.071375
Factors	-0.951724	-0.049461

In the table above, we see that four factors (Gender, Level, Areas and willingness) are not adequate compared to the rest of the factors. Thus, eight factors are the factors that can influence the conditions of acceptance of cadres living outside the country (see in Figure 1 below).

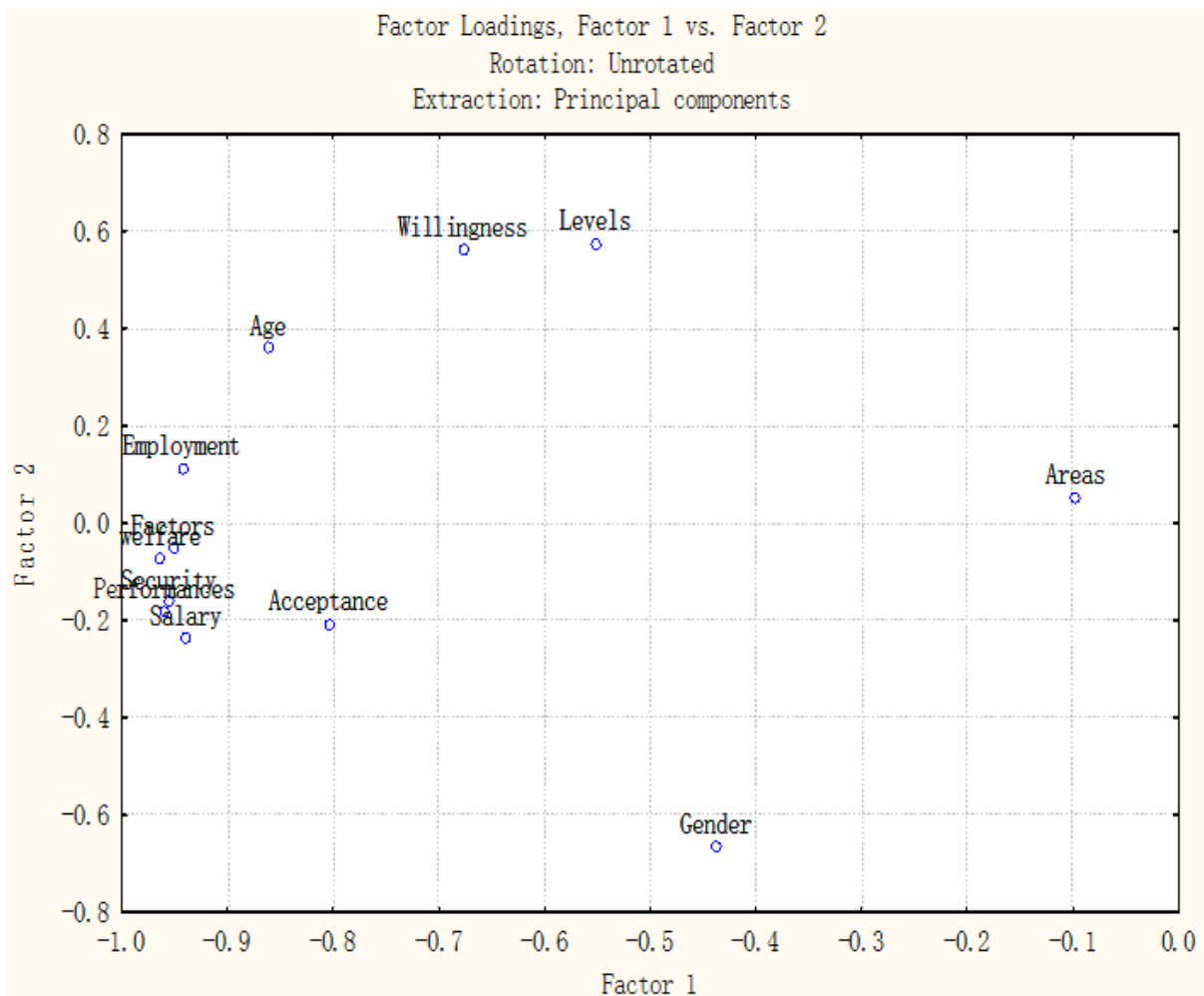


Figure 1. In addition, we observed in the graph that only the four factors (Gender, Level, Areas and willingness) are data outliers. This means that only the four factors have little impact on the degree of acceptance of the Guinean executives living outside the country

As Table 8 in down shows through investigative studies, they are 7 factors that are really impressionable with our

observation on the study done. Therefore the acceptance degree is in function of its seven factors.

As shown in Table 8, the eight (7) factors were adequate.

Table 8. Factor Loadings (Unrotated)

Variable	Factor Loadings(Unrotated) (Spread: Extraction: Principal components) (Marked loadings are >.700000)	
	Factor 1	
Age	-0.861652	
Employment	-0.942649	
Acceptance	-0.803849	
Performances	-0.959637	
Salary	-0.939673	
Security	-0.955393	
Welfare	-0.963265	
Factors	-0.951724	
Expl. Var	6.907701	
Prp.Total	0.863463	

8.2. Correlation Analysis

Consequently, we use a conceptual model for a study of correlation across the calculation of Pearson product-moment correlation coefficients. This was done between the degree of acceptance of frames and its determinants, their degree of patriotism, their willingness, the quality of service, level of wages, security, social assistance, and some key factors.

Table 9. Means and standard deviations of eight (8) factors

Variable	Means and standard deviations) (Spreadsheet)	
	Means	Std.dev
Age	2.133803	0.745948
Employment	2.422535	0.697757
Acceptance	1.774648	1.138584
Performances	3.239437	1.058097
Salary	3.126761	1.184170
Security	3.105634	1.022497
Welfare	3.647887	0.969003
Factors	3.823944	0.792691

Table 10. Correlations between eight factors

	1	2	3	4	5	6	7	8
Age	1							
Employment	0.804	1						
Acceptance	0.011	-0.138	1					
Performance	0.831	0.832	-.0232	1				
Salary	0.832	0.793	-0.163	0.915	1			
Security	0.874	0.752	-0.144	0.940	.908	1		
Welfare	0.860	0.746	-0.060	0.830	.911	.875	1	
Factors	.820	0.789	0.105	0.803	0.757	.811	0.759	1

Notes: ** indicates that correlation is significant at the 0.01 level (2-tailed).

The factors are positively correlated with frame acceptance at the 0.01 level of significance. Also, the total determinant is positively correlated with one another at the 0.01 level of significance.

8.3. Primary Factors

Table 11 shows the percentage and frequency of some important factors to fight against brain drain.

Table 11. Some important factors to fight against brain drain

The primary factors

	Frequency	Percent	Valid Percent	Cumulative Percent
Salary level	121	45.8	45.8	45.8
The quality of Employment	11	4.2	4.2	50.0
National security	29	11.0	11.0	61.0
Because of parents	79	29.9	29.9	90.9
Because of the nation	24	9.1	9.1	100.0
Total	264	100.0	100.0	

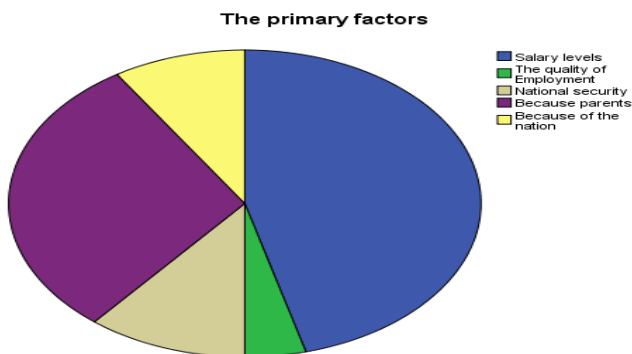


Figure 2. The primary factors

Figure 2 shows five (5) important factors that influence the degree of Guinean frames living outside the country.

Furthermore, the following analysis is based on responses from the survey sample. Notes are also regarded as the size of the sample due to the fact that respondents were able to choose multiple answers. Also in this further statistical study, it is important to understand the following: what are the factors that must be considered by the Guinean frames living outside the country in the interest of the nation when it comes to help? What are the degrees of acceptance of 264 Guinean frames living outside? In addition, we need to know and identify these factors that need improvement. However, this section aims to answer these important research questions. Table 8 gives

the answer to the first question, while Table 10 and Figure 2 give the answers to the second question.

8.4. Analysis of the Results

This statistical method allows us to see the degree of acceptance of the Guinean executives living outside the country. However, it defines the factors that may influence the degree of these frameworks acceptance, while the main determinant factors are considered by these executives in their position to accept in returning to help their country. Finally, they explain the recommendations of some cadres in the direction of the amelioration labor conditions. To achieve the objective of this research, a way to help the government fight against the brain drain in the country should take into account the lines between the appearances seen in this article. Thus, this is with particular emphasis on the recommendation of points in the measurement to help the country. Nowadays, good numbers of frames have continued to complain about the countries of operations. Also, this was according to an exhaustive control of theoretical knowledge of the investigation who developed a conceptual plan that suggests the degree of acceptance of executives would be based on the quality of Guinean executives outside, increases in wages, the country that have security, and on a significant impact to stop this scourge. Therefore, the article suggests that if these factors were taken into account, it would help in increasing the salaries and contribution of parents. As such, this would help the government to fight against this scourge. The results of our analyses show that the degree of acceptance of Guineans depend on the executives salary level 45%, because of parents 29.9%, national security 11%, because of the nation 9.1%, and the quality of employment 4.2%.

Additionally, this article revealed that frames have a guaranteed job whose homecoming is related to the factors marked as improvement.

10. Hypothesis Confirmation

H1: When salaries are low, this would lead to a reduction in the frames degree of acceptance. The results explain that there is a positive relationship between salary and acceptance of frames. Their correlation coefficient is positive, 0.753. However, this means that an increase in the salary of employees also leads to an increase in the degree of acceptance. On the other hand, a decrease in the salary of employees also leads to a decrease in the degree of their acceptance.

H2: Good performance of the country can increase frames degree of acceptance. The correlation coefficient between the performance of the country and the frames degree of acceptance is positive, that is 0.752 supporting H2. However, this explains that an increase in good performance of the country also leads to an increase in the frames degree of acceptance.

H3: When security managers are weak relative to the management of the state, it could reduce the acceptance of the frames. The correlation coefficient between security managers and that of the frames degree of acceptance is acceptable, 0.757. This explains that the frames want security in the country. This result could as

well be due to the fact that there are lots of good frames living outside the country.

H4: There is a positive relationship between good employment and acceptance of frames for return. The result defines that there is a positive relationship between good employment and the frames degree of acceptance. The correlation coefficient between the variables is positive, that is 0.679. Thus, this means that clients are influenced by the brand of the company.

9. Conclusion

In conclusion, our analysis shows that the country lack some of the high-level scientific and few competent managers in research. Hence, this represents the biggest obstacle of the ability of Guinea to be innovative. Today, Guinea has begun to understand the brain drain through the education system. Therefore, this was according to a new vision that found more than 73% of the Guinean frames who benefited from very good training in some prominent foreign universities. They are not willing to return to live in their homeland. Despite that, there has been a significant improvement in some areas as a result of the efforts of the new government in continuing to fight for the incentives to return to the country. Based on our investigation, a significant number of the most outstanding minds who were abroad no longer want to return back to their country. This is because they want to have a higher standard of living, brighter career opportunities, and the freedom to have a good salary, welfare, safety in their lives, and finally to help to support their poor families.

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