

The Digital Improvement in Human Resource Management of Africa: Evidence from BGI

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Abstract. Contemporarily, the digital improvements as well as transitions have been proposed in various aspects and fields. Among various fields that are undergoing the digital transition, the digital improvement in human resource management is a hot topic, especially in some poor area (e.g., Africa). In this study, the fundamental problems in the human resource management fields of some global enterprises in Africa have been mentioned and discussed. To be specific, this study attempted to take the company BGI as an example to illustrate that the problems could be solved by digital improvement. With this in mind, some practical actions implemented by BGI have been demonstrated and analyzed. According to the analysis, some beneficial references from BGI could be used by other companies in human resource management, which want to develop their Africa business following the same routine. Overall, these results offer a guideline for further exploration of digital improvement for human resource management.

Keywords: Human resource; digital improvement; Africa.

1. Introduction

In recent 10 years, the Chinese government has put out a historical policy called One Belt One Road, which aimed at calling for globalization of Chinese enterprises. A current report shows that there are more than 1000 quoted company have started their global strategy in China [1]. Africa is a main market for those enterprises, a statistic from China's Ministry of Commerce claimed that a 3.74-billions' investments in Africa comes from Chinese enterprises just in 2021 [2].

Beijing Genomics Institute (BGI) is one of the third most advanced gene biology companies of the world, which is also one of the core enterprises in One Belt One Road project. BGI also regards African Market as a key point for its globalization project, with three subsidiary companies and more than 200 employees in 15 African countries. BGI has hold on 3 main business in Africa: Birth Test, Cancel Test and Contagion Test (e.g., COVID-19). In 2021, BGI made a great achievement in Africa with a 200 million income totally [3].

For human resource management some literature below can be for reference. In 2017 SIMO KAMDEM Sorelle made a study on the motivation policies to improve the performance of African employees in Cameroon and pointed that extrinsic rewards are the most effective factor to encourage them to increase their productivity level [4]. In 2019, a study carried out from Linda Susan Kabba shows some objective data on the strategic of human resource management of health employees in Sierra Leone which is related to BGI. And gave out some possible strategies for the human resource management in the health industry of Africa countries [5]. In 2013, Li Anshan and Funeka Yazini April wrote a report for the For Forum on China-Africa Cooperation, which shows that what Chinese companies should do to develop the training and exchanging policies in Africa [6].

For data technology in human resource management some literature below can be for reference. Thomas Stephen Calvard and Debora Jeske in 2018 makes a point that data management could help companies to avoid risk in human resource management and hope that their recommendations enable employers to better anticipate and address emerging big data challenges [7]. In 2017, Liao Huiyin put the datamation transformation for a Chinese government as a example. In her opinion human resource management is a chance and a challenge for Chinese companies [8].

Datamation in human resource management is coming normalized these days in China. This method could help a company to reduce labor costs. Monitor and improve working efficient of employees. However, in Africa it is still an elementary concept because of some objective

circumstances. For a more efficient management in human resource, the implement of digital improvement project is becoming necessary for Chinese companies in Africa. To be specific, human resource managers in headquarter could analyze the satisfaction of local employees and the salary contribution in a recruitment process. This study will discuss BGI's human resource data management in Africa as an example to demonstrate the value of the datamation transformation for other Chinese companies in Africa.

2. BGI Human Resource Management in Africa

2.1 High Costs in Labor

It is widely known that most low-income countries mainly distribute in Africa region. Low labor cost is regarded as one of the strengths of investment in Africa. It is also a reason for BGI to launch the company's Africa strategy. However, after two years' operation, a unusual result has been shown in BGI's annual finance report [9]. When an audit project in BGI's Ethiopia (one of the most poverty countries in the World) branch, it showed that the labor costs (Salary is not contained) of this region are much higher than those in China. The bar chat shown in Fig. 1 compared the average monthly costs between a single employee in China and Ethiopia. Through the bar chat, it is obvious that the labor costs of BGI employees in China are fixed, around 20USD per month. Conversely, the labor costs in Ethiopia are higher and unstable. This should be investigated by the headquarters of BGI.

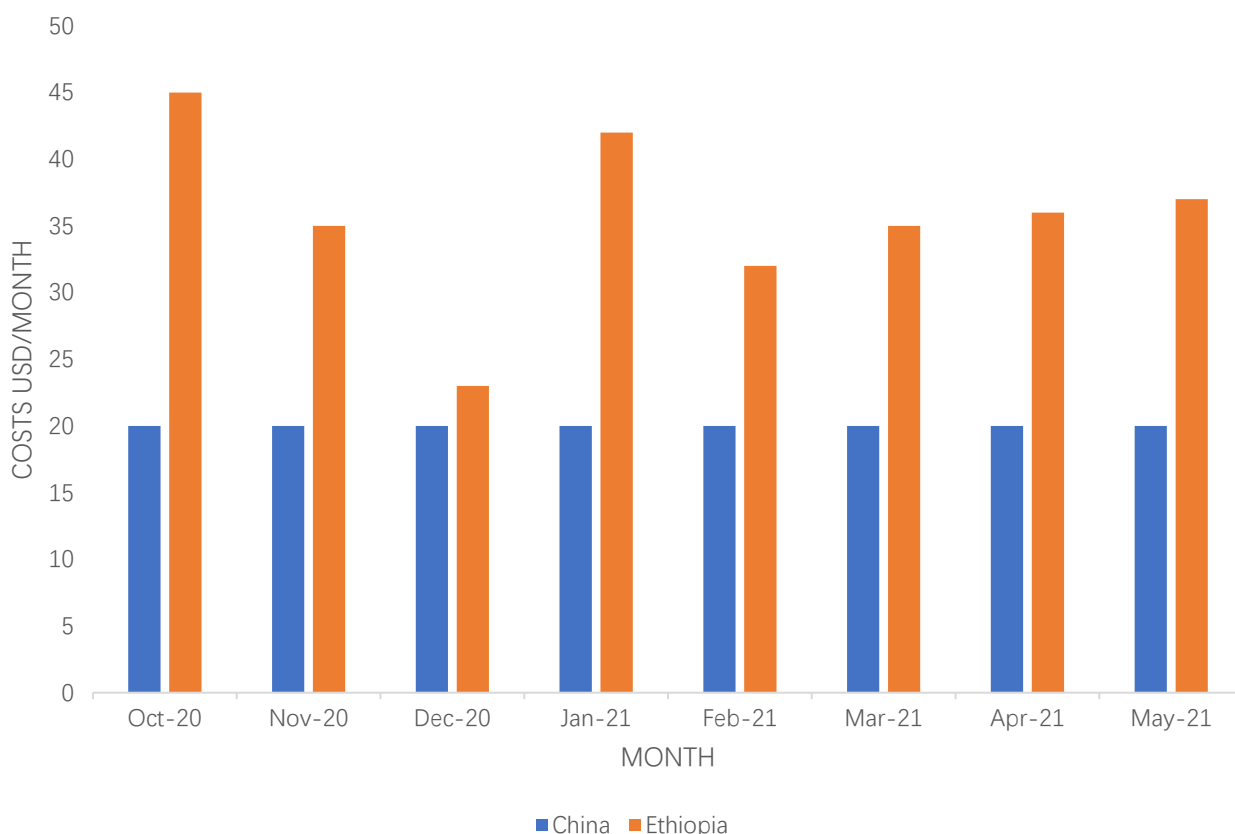


Fig. 1 Average monthly labor costs between a single employee in China and Ethiopia.

2.2 Low Working Efficient in Multilingual Environment

Africa is a multilingual region. A report indicated that the official language of African countries includes English, French, Portuguese, Spanish and Arabia. At the first period of BGI's Africa strategy, employees in non-English speaking countries always complained that they could not work through an English and Chinese human resource OA system. Paulino, who is the human resource manager in BGI Angola said that before he became a member of BGI, he was a fresh student major in Chinese

without any experience in human resource management. He could be this position only because he can speak in both Portuguese and Chinese fluently. It means that the headquarters could implement their human resource plans with his translation. Nevertheless, Paulino also claimed that it was not a solution from the root, a Portuguese human resource system was necessary. The HR team in China also realized the potential problem and decided to develop different system in different languages till an unacceptable cost budget from the IT department.

2.3 Problems Caused by the Lack of Recruitment Methods

Although BGI is one of the third largest gene biology company in the world but the company are not extraordinary enough in Africa even in global. Through the LinkedIn, a fact could be found that there are only around 50000 followers of BGI LinkedIn account, much less than its competitors such as Illumina (330000 followers) and Johnson& Johnson (8000000 followers). Because of lower visibility, BGI always launched their recruitment process through some Chinese human resource agencies with a large amount of cost (5000USD's minimum charge). After new employees' onboarding, they need to write a questionnaire which were set to investigate whether they heard about BGI before. The result shows that 70% of new African employees have not heard about the company absolutely.

3. Digital Improvement

3.1 A Human Resource Data Operation Center in Mauritius

After analyzing the three issues, BGI human resource team decided to change. Most evidences showed that the main reason of those problems was they did not have enough data to monitor the management process in the first line. Therefore, a data center in Africa was seemed necessary for the company.

However, a problem was ignored by company's management team: it could be a trouble to choose an acceptable situation for the data center because of the limitation of infrastructures and facilities in Africa. To be specific, the average internet speed in Africa is just 5.74 Mbps while it is 11.03Mbps of the world [9]. In this crucial point, an old report was mentioned that HUAWEI established its global finance data center in Mauritius [10], where could provide enough hardware for a human resource data center.

Mauritius is the country which has a good relationship with China. The country has put out some policy for Chinese investor such as tax deduct or land leasing. The most important is Mauritius is one of the most developed countries in Africa with those facilities for a data center. For example, with a long time contribution from China, Europe and its own operators, Mauritius can provide a 20Mbps' internet speed [11] and it is also one of the first African countries in which 5G internet can be used. With these preconditions, BGI has established a human resource data center in Mauritius since the end of 2021.

3.2 The Solutions of High Labor Costs

After the establishing of human resource data center, human resource team of the company started their action on labor costs control and make Ethiopia company as a case. After an investigation of distributions of the cost, a pie chart is presented in Fig. 2. Through the pie chart, the cost in suppliers service fees is the largest, which include the charges for payroll service, recruitment agencies, EOR services etc. Generally, that kind of service could be negotiated at first. Nevertheless, without the supports of data, the human resource specialist in Ethiopia could just accept the quotations from local human resource suppliers.

The Distributions of Labor Costs

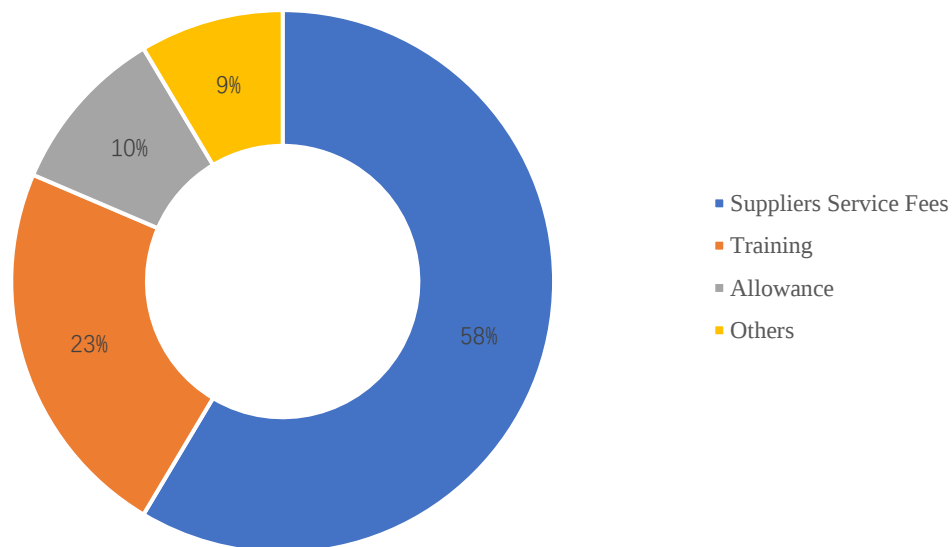


Fig. 2 The distributions of the cost.

Aimed at the problem, the data analyst in Mauritius gave out a plan to collect the employees' data related to human resource services including age, gender, working experience, which not only comes from BGI Ethiopia companies but also from other global enterprises based in Ethiopia. Finally, they issued a report about the labor perspectives of Ethiopia and established a database with selected conditions to help human resource specialists to negotiate with suppliers. With those actions, the labor costs in BGI Ethiopia branch have a 30% reducing. In addition, headquarters think that it would be assist them to reduce more cost with the perfection of data center.

3.3 The Solutions of Multilingual Environment

Due to the high costs of a new systems, human resource team of BGI must discuss other solutions. In fact, Mauritius could be the situation of data center also was considered that most people in the country could speak in both English and Chinese. It also could be a solution for multilingual environment. However, after some attempts of it, the idea was given up because staffs in Mauritius also have their own work, they cannot be translators in full-time. At the same time, a full-time translator presumably means a higher cost. In 2018, two information scientist Zhang and Wang issued an essay about AI translation. They thought that in the next 2 or 3 decades, AI will be a good assistant to translators during translations, and high-level translators will be in short supply [12]. After considering about of the attitudes of the essay, BGI human resource team decided to combine with IT team to develop an AI translation plug-in, analyzing the high-frequency vocabularies through the database and translating the key words in different languages to assist employees in different countries. After this, Paulino said that most people in Angola could use the human resource OA system fluently. Although the plug-in can just translate the key works by itself, it is a good signal for us. It is believed that one will have a total AI translation plug-in in the future.

3.4 The Solutions of Recruitment in Africa

In fact, the root of recruitment problem of BGI is lack of international reputational. People in the same industry do not know the company well in Africa. Regard to the problem, at first BGI decided to establish a professional SNS operation team to edit attracted contents. However, it seems that these

actions have no use for talent acquisition. Because a recruitment advertising should be obtained by job hunters directly and accurately.

For the requirements of recruitment team, data scientists in Mauritius data center started to analyze the potential candidates' habits through the big data comes from search engine. They collected the data from college students of related majors, employees from medical institutes, hospital doctors and so on, as detailed as possible. Additionally, one needs to give out a way to broadcast the company and launched the recruitment advertising precisely, and set up a recruitment model as illustrated in Fig. 3.

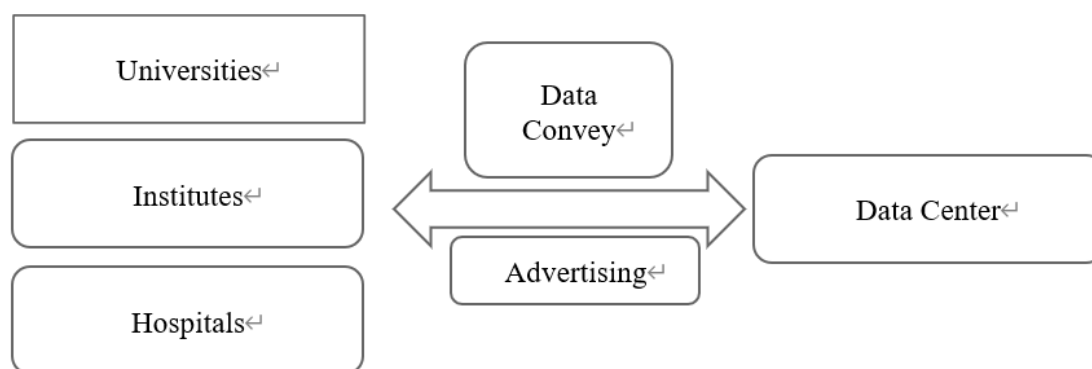


Fig. 3 The procedure of the data center.

Through this model, the company could acquire right employees for their business. At the end of 2021, human resource department organized an annual meeting and invited all the departments to point the work of every part of human resource management. With the marks, it was obviously that recruitment work of human resource team is most satisfied by the other departments.

4. Limitations & Prospects

Although it seems that BGI has a great achievement in digital improvement but it just covered a same part of human resource management of the company. A more complete solution plan for the entire human resource data management should be launched in the future to develop the efficiency in this field. For example, data could help the HR team to estimate employees' performance automatically. A salary data system can put out some reports about the labor attitudes of the hole industry so that management team could implement a new salary plan to match employees' requirement.

Furthermore, the human resource team of BGI is the first department to notice the importance of digital improvement, which has not taken full advantage of digital management. It is also an important method for those department such as marketing, sales and finance. For example, BGI's sales managers still use original excel formulas to analyze the trend of market. In this way, the sales team would get a subjective analysis report which depends on the ability of analyst. It is also very emergency for the company to implement the digital improvement for entire company.

5. Conclusion

In summary, this study took BGI as evidence to describe its digital improvement project in human resource management of Africa region. Three problems of human resource management in Africa have been put out included the high labor costs, multilingual working environment and recruitment. Accordingly, some solutions which were implemented by the company have also been mentioned, i.e., data analyzing on costs distributions, AI translation plug-in and the precisely launching of recruitment advertising. The foundation of all the actions is a data center in Mauritius. Nevertheless, the study just clarified an elementary utilization of digital improvement. The exact way to implement

a digital improvement plan for entire company is worth to be further research. Anyway, these results offer a guideline for digital improvements for human resources.

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