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# ACTIVE LABOR MARKET POLICIES IN CAPE VERDE: LABOR MARKET INFORMATION SYSTEMS AND ACTIVE LABOR MARKET POLICY EVALUATION IN DEVELOPING COUNTRIES

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**Abstract**: This thesis investigates the multifaceted landscape of Active Labor Market Policies in Cape Verde, a developing country facing unique challenges. Four distinct themes are explored: informal labor markets, education, agriculture, and the role of job search platforms and labor market information systems. The first theme that will be studied considers that the high levels of informality can constitute a challenge to reaching high levels of dignified working conditions, that the Government of Cape Verde is working for. The second theme explores the potential of innovative educational approaches to alleviate obstacles within education systems in developing nations and shape the labor market. The third theme to be discussed aims to investigate public policies in developing nations like Brazil and Angola, focusing on their relevance for labor market strategies and the agricultural sector in Cape Verde. The final theme to be analyzed is the role that Labor Market Information Systems play in allowing jobseekers, employers and policymakers to make informed choices.

**Keywords**: Informal labor; Dignified labor; Cape Verde; Active Labor Market Policies; Information and awareness-raising; Education Systems in Developing Countries; Hybrid Education Model; Innovative Learning Approaches; Educational Policy and Practice; Agribusiness; Sustainable Development; Precision Agrotech; Labor Market; Renewable Sources; Employment Metrics; Skills; Wages; Job Trends; Environmental Protection; Developing Countries; Africa; Information System; Job Matching; Online Job Platforms; Underperformance; Partnerships; Administrative Data; Informal Sector; Public Sector; Private Sector; Artificial Intelligence; Government; Education; Policy Evaluation.

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# 1. INTRODUCTION

Skill and employment policies are vital in shaping the socio-economic development of a country. According to the ILO (n.d.), these policies aim to improve "the functioning of the labor market by inducing changes in labor demand and supply, as well as their matching process". They serve as a driving force for economic growth, social cohesion, and individual prosperity. Creating effective strategies in these domains is crucial for developing countries like Cape Verde. This thesis examines various aspects of employment policies in Cape Verde, each addressed by a different group member. Our investigation spans the themes of informality, education, agriculture and job search platforms.

Our first theme explores the informal labor market in Cape Verde, which makes up 52% (Observatório do Mercado de Trabalho, 2022) of the jobs in the country, seeking to understand how this influences the design and implementation of Active Labor Market Policies (ALMPs). While offering greater flexibility and immediate opportunities for income generation, the informal sector typically lacks the benefits and protections provided by formal employment. Therefore, understanding the impact of informality on labor market policies is crucial in ensuring effective, efficient and inclusive policy design. Guided by the research question, "How should labor market informality influence Active Labor Market Policies in Cape Verde?" we study the informal labor market, understanding the impact that informality has on the Cape Verdean economy and if it is possible for the government to support the creation of decent jobs without firstly eradicating informality.

The second theme explores the role of education in shaping the labor market. Education is fundamental for equipping individuals with the skills necessary for productive employment. However, developing countries' traditional education systems often need help providing quality and relevant learning opportunities. Therefore, our second research question asks: "How can innovative learning approaches address the challenges faced by education systems in

developing countries?" Through this lens, we will explore the potential of innovative educational approaches to alleviate obstacles within education systems in developing nations. We will analyze the Brave Generation Academy (BGA) model, a pioneering hybrid educational system, to understand its efficacy in addressing these educational shortcomings. By comparing the traditional methods with the practices of BGA, the research aims to derive insights into how such innovative models can be adapted and scaled in various developing country contexts.

Thirdly, the research directs attention to the agriculture sector in Cape Verde, a field of critical importance that frequently has challenges related to low productivity and sustainability. Thus, the third research question arises: "What key strategies and public policy interventions are required to enhance agricultural productivity, reduce dependence on foreign food supplies, increase labor market participation, and promote sustainable agribusiness development in Cape Verde?" This inquiry is the cornerstone for analyzing potential measures to enlarge best agricultural practices, bolster labor engagement, and foster sustainable growth. Numerous factors, such as limited geographic conditions, arable land, water scarcity, pervasive soil erosion, and inconsistent rainfall patterns, curtail Cape Verde's agricultural productivity. Consequently, the strategies to increase productivity must be multi-faceted, addressing various dimensions to escalate productivity and curtail reliance on food imports. The main goal is reducing dependence on foreign food supplies stands, considering imported food poses a substantial concern for national food security. Moreover, increasing labor market participation represents another facet of this complex issue. To avoid the young generation's aversion to agriculture labor, there is the need to counteract through attractive incentives, comprehensive education, and training programs designed to render agriculture attractive, enticing more young individuals into this vital sector.

Finally, we examine the role of job search platforms and labor market information systems in developing countries. Moreover, we also consider their role in evaluating the impact of

ALMPs. These platforms may be crucial for matching job seekers with employers and providing valuable data to guide policy decisions. Our research question is: "How can labor market information systems facilitate impact assessments of Active Labor Market Policies?" We aim to provide insights into how Cape Verde can better leverage information systems to evaluate and improve its employment policies by addressing this question.

In conclusion, this thesis aims to analyze employment policies in Cape Verde comprehensively. Considering the four themes mentioned above, we intend to understand the interconnectedness of these sectors and their implications for Cape Verde's economy. The outcomes obtained from our four studies include suggesting improvements to make job policies more inclusive and effective, identifying innovative educational strategies that better prepare individuals for employment, proposing methods to enhance agricultural productivity, and understanding the role of job search platforms in shaping job policies. Through this comprehensive analysis, we hope to contribute positively to Cape Verde's socio-economic development and provide insights that could benefit other countries in similar circumstances.

## 2. LITERATURE REVIEW

### 2.1. INTRODUCTION TO ACTIVE LABOR MARKET POLICIES (ALMPS)

Active Labor Market Policies (ALMPs) are interventions designed to improve the labour market's functioning by increasing jobseekers' employment prospects and enhancing workers' skill sets. Forslund (n.d.) categorizes these policies into four types: job-search assistance, training, subsidized employment, and work practice schemes. Each policy measure often incorporates a combination of channels to effectively support unemployed individuals, such as influencing job-search behavior, enhancing worker skills, and facilitating labor-market connections.

Card, Kluve, and Weber (2015) conducted a meta-analysis of ALMP studies and found that well-targeted ALMPs can improve the functioning of the labor market and reduce

unemployment. Their analysis emphasizes the importance of tailoring policies to the needs of different groups, such as long-term unemployed, young people, and disadvantaged workers.

Crépon and Berg (2016) discuss the potential drawbacks of ALMPs. Despite their potential benefits, some participants may dislike these programs. They discuss the "threat effect," where individuals may accept low-paying jobs to avoid enrolling in an ALMP. This effect drives people out of unemployment and inadvertently reduces the number of actual program participants. Moreover, ALMPs may have unintended consequences on the job search process and productivity, with the threat effect sometimes dominating the overall ex-ante effects of training.

The authors also present the "lock-in effect," acknowledging that time spent in programs like vocational training could detract from other activities that could help job seekers find employment. Consequently, the upfront time costs might counteract the program's positive impact on reducing unemployment duration.

McKenzie (2017) argues that traditional ALMPs in developing countries, whose focus tendency is skills training and job search assistance, have, to a certain point, a frugal impact on employment and earnings. This and the regular over-expectation around these policies breed disappointing results. One explanation offered by the report is that labor markets (e.g. in rural settings) in developing countries function better than commonly anticipated, with a significant fluctuation of workers between job openings and opportunities. Even though traditional ALMPs fall flat in these contexts, alternative policies may bring positive outcomes. The report alludes to Campos et al. (2016) work in Uganda, which depicted that the salary of women transitioning to male-dominated industries was three times higher than that of women who remained in female-dominated industries.

Kluve et al. (2018) conducted a quantitative review of 113 impact evaluations of youth employment programs, finding considerable variation in their effectiveness across different

interventions, target populations, and contexts. Skills training and entrepreneurship programs and those targeting vulnerable groups such as young women, low-skilled youth, or rural populations showed higher impacts on labor market outcomes.

### 2.2 ALMPs AND LABOR MARKETS IN SUB-SAHARAN AFRICA

Forecast data indicates a significant rise in youth populations in West, Central, and East African nations, contributing considerably to this demographic rise in Africa continental. Forecasts suggest that, by 2050, up to one-third of the global youth population could be living in Africa, up from one-fifth in 2012 (AFDB, 2015). In Sub-Saharan Africa (SSA), where Cape Verde is inserted, the economic growth largely remained static. The region's real GDP per capita in 2000 showed a mere 7% increase compared to the 1960's value (AFDB, 2015).

An OECD (2018) study emphasizes that employment remains a significant challenge in West Africa. According to this study, the lack of jobs in the formal sector, the weak levels of education, and the lack of matching between the jobs available and the skills of the population lead to high levels of unemployment, especially among the youth population. OECD (2018) states that to promote inclusive growth, it is crucial to focus the development strategies on three different sectors: a better interconnection between the rural and the urban areas, improvement of local products by encouraging companies to collaborate, and, lastly, an upgrade at the institutional level, both on companies and also on the tax system of the country.

When adapted to the local context, active labour market policies can play a crucial role in addressing these challenges. Betcheman and Khan (2018) argue for unconventional interventions and emphasize improving skills and training for the young African population. They propose categorizing interventions into five areas: employment creation, skills development, employment services, entrepreneurship, and agriculture.

Regarding employment creation, the aim is to improve the labor demand for youth through public works programs and wage subsidies. Public works have proven their success in

increasing employment and earnings; however, they need to provide skills improvement. Regarding the wage subsidies, young people have more difficulty establishing themselves in the labor market since they are perceived as needing more skills and experience, and this type of hiring incentive will allow them to enter the market.

As for the second program mentioned above, which is the most common type of intervention, it provides the required education and training for the youth to enter the labor market.

Employment services correspond, for example, to job search assistance. This type of program improves the functioning of the labor market, allowing for better circulation of information in the market and leading to better matching between job seekers and employers.

Entrepreneurship interventions address two goals. The first is to support self-employment in a way that leads to poverty reduction, usually through microfinance. The second objective is encouraging young people to engage in entrepreneurial activities, not through microfinance support for their livelihood, but through advising on their financial and technical needs.

The final intervention, on agriculture, aims to support farm initiatives in developing countries and improve the livelihood in agriculture, considering that this activity is one of the most crucial in the economy of sub-Saharan African countries. Despite its relatively low productivity, agriculture still has a critical economic role in the sub-Saharan African economy. Kanu et al. (2014) note that agriculture employs around 57% of Africa's workforce, making it a primary employment sector.

## 3. CAPE VERDE'S LABOR MARKET AND POLICIES.

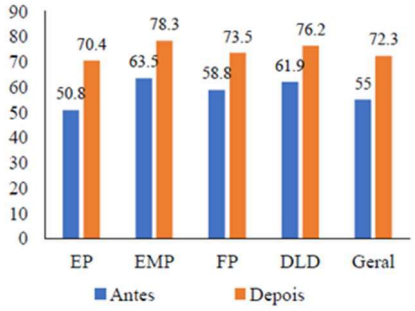
### 3.1. OVERVIEW OF CAPE VERDE'S LABOR MARKET STRATEGY

Concluding the analysis of the sub-Saharan African labor market, it is crucial to perform a deep analysis of the labor market of Cape Verde. The Ministry of Finance and Business Promotion of Cape Verde (2022) developed a report to show the impact active labor policies can have on employment and formation. The report starts by explaining that, given the need to

fulfill 2030 sustainable development with a focus on poverty eradication, better working conditions, more productive work, and dignity for all, Cape Verde adopted several measures from 2018 to 2020. These measures focus on politics, active labor policies, and training, which aims to give people a set of tools from which they will benefit when facing the possibility of entering a dignified and proper job.

The study from the Ministry of Finance and Business Promotion of Cape Verde (2022) provides a quantitative approach and involves all the beneficiaries of the active labor policies between 2018 and 2020; however, no comparison group of non-participants is included. The ALMPs correspond to professional training (*formação professional*), technical courses (*ensino técnico*), internships (*estágios profissionais*), long-term unemployed insertion projects, and projects promoting entrepreneurship and self-employment. The government implemented five measures: Professional Business Internship Program, Professional Training, Integration of the long-term unemployed, Entrepreneurship, and Technical Education (technical pathway).

The following figure, in Portuguese, shows the percentage of respondents that worked before and after the programs, corresponding to the abbreviations EP, EMP, FP, and DLD for Professional Internship, Entrepreneurship, Professional training, and Long-term unemployment, respectively. The method used to collect information was self-completion via either an online questionnaire or a telephone interview, which resulted in 2004 valid responses, which, according to the report, represent a small number of replies.



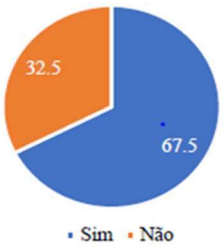

*Graphic 1 Percentage of respondents that worked, before and after the program, Cape Verde - 2022*
*Source: Observatório do Mercado de Trabalho*

### 3.2. IMPACT ANALYSIS OF ACTIVE LABOR POLICIES IN CAPE VERDE

The success rate of Active Labor Market Policies (ALMPs) can significantly fluctuate based on factors such as the policy, how well it is executed, and the local environment. Therefore, a comprehensive understanding of the region's employment market and the distinct challenges that job seekers encounter is crucial. These policies can demand considerable resources, and appropriately directing them is vital to maximizing their benefits.

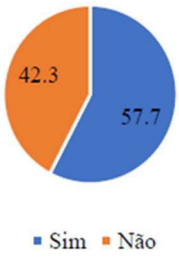
The report previously mentioned by the Ministry of Finance and Business Promotion of Cape Verde (2022) analyzed the outcomes of these measures. When looking more closely at the traineeship program, the report shows that the IEFP has been developing studies in this area since 2010. During the five years before the report release, INE, in partnership with IEFP/DGE, developed some questions that allow us to calculate the insertion rate of beneficiaries of vocational training programs, which has fed the GAO matrix. On the topic of vocational training, another two studies have also been carried out, in the same timeline as the one just mentioned, on the satisfaction with the qualifications designed, which assesses the quality of the training implemented with the insertion in the labor market.

According to the following graphic, most respondents declared that the training contributed to their first job after completing the program, and on the following graphic, 58% declared it was their first job.




*Graphic 2 Percentage of participants that said formation contributed for the finding of their first job, Cape Verde 2022*

*Source: Observatório do Mercado de Trabalho*




*Graphic 3 Distribution, in percentage, according to first job, Cape Verde 2022*

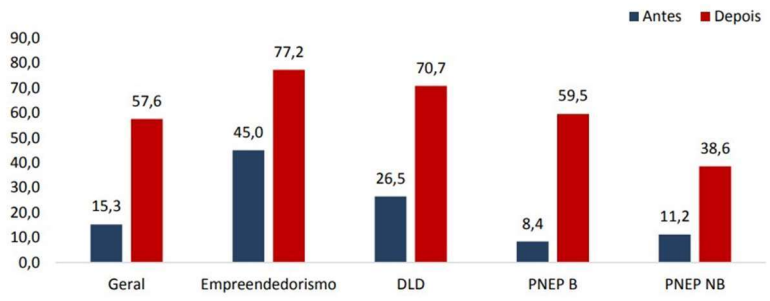
*Source: Observatório do Mercado de Trabalho*

Previous reports underlining the impactful evaluation of ALMPs in Cape Verde have been conducted, most notably between 2015 and 2017. As previously mentioned, the report focused on the impact of programs/projects for the unemployed, entrepreneurs or individuals seeking professional internships.

During the analyzed period, 75.5% of beneficiaries were in *Programa Nacional de Estágios Profissionais* (PNEP), followed by entrepreneurship and unemployment projects. This is unsurprising considering the strong bet on professional internships in the country.

Most of the respondents underlined in the report were women, granting this group a higher insertion rate after six and twelve months. Nevertheless, analyzing both sexes individually demonstrated that males had a higher insertion rate.

The report's significant findings depict that after the programs, there was a significant increase in the proportion of individuals with jobs between 2015 and 2017, as observed in the following graph. Moreover, all of the beneficiaries experienced higher salaries after the programs.




*Graphic 4 Proportion (%) of respondents who have ever worked: before and after the program,*

*Source: IEFP, estudo de impacto de programas e projetos de emprego, 2018*

This study examines the role of labor market information systems in Africa, and more thoroughly in Cape Verde. These systems allow jobseekers, employers, and policymakers, to make informed choices. Evidence from previous literature shows that common constraints present in the continent are found in Cape Verde. Limited government support, lack of private sector involvement and subpar dissemination of data are notable examples. Benefits are found in the educational and informal sector. Creating protocols with digital job platforms and pursuing administrative data can aid the operability of the systems. Costs associated with AI make it an non-viable approach for the moment.

Keywords: Developing Countries · Africa · Information System · Job Matching · Online Job Platforms · Underperformance · Partnerships · Administrative Data · Informal Sector · Public Sector · Private Sector · Artificial Intelligence · Government · Education · Policy Evaluation

I would like to acknowledge and wholesomely thank my family for the support given during this process and for allowing me to pursue this academic path. I would also like to mention my friends and the moments we have shared along these years. To my colleagues in this Work Project, I would like to extend my gratitude for all the help provided. Finally, I would like to recognize and appreciate the help provided by Professor Pedro S. Martins during the realization of this project. His contributions greatly helped me in producing a coherent and valuable work.

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# 1. INTRODUCTION

The continuous ever-changing and emerging world dynamics[1] have imposed numerous challenges to the efficiency of labor markets across it. In order to adapt and respond to these challenges, Active Labor Market Policies (ALMPs), have been heavily pursued by governments to alleviate pressures[2] on workers.

However, the mere implementation of these labor market policies does not directly translate to an efficient labor market infrastructure. In order to guarantee that informed choices are carried out by jobseekers, employers, and policymakers, it is crucial that Labor Market Information Systems (LMISs) are in place to analyze and correctly disseminate Labor Market Information (LMI).

After this brief introduction, Chapter 1 will provide readers with basic concepts surrounding these systems to allow for a better understanding of the matter being discussed. Chapter 2 will provide a brief explanation of the methodology used in order to carry out this Work Project. Chapter 3 will depict an overview of the current status of the systems in the African Continent. Following this, Chapter 4 and 5 will display persistent constraints and possible opportunities, in the development of the African Information Systems. Chapter 6 will more thoroughly discuss the status of these systems in Cape Verde. In conclusive terms, Chapter 7 will attempt to provide meaningful additions to previous research, while reinforcing it.

## 1.1. WHAT IS A LMIS?

In a first level, a LMIS consists in all activities involving LMI. The latter encompasses the relation between labor demand and supply, which includes dimensions such as jobs, hirings, wages, and training, among other job market indicators. Being an information system, the pillar holding a LMIS is data. With this in mind, the previously mentioned activities cover the collection, processing, storing, analysis and dissemination of data revolving around LMI.

[1] E.g. frequent job switching, increased geographical mobility and extensive digitalization.
[2] E.g. unemployment, skill mismatch, lack of training and skill development, decrease in per capita income.

Moreover, apart from workers and firms, who play a crucial role in labor supply and demand, respectively, a LMIS entails the presence of various different stakeholders (e.g., government, public and private employment services, social partners, education and training providers).

The final element associated with a LMIS is the operational level which it surrounds. Considering geographical, economical and time levels, a LMIS can operate and provide data from local to national levels. In order to achieve efficiency when managing a LMIS, the previously mentioned levels need to thrive, accordingly.

### 1.2. TO WHOM, ARE THEY INTENDED? AND WHAT DO THEY PROVIDE?

Considering the various stakeholders involved in a LMIS, it is possible to display some examples of its role in assisting them with desired goals. The following depict this, in addition to providing some insight on the benefits of these systems.

a) Young individuals who recently finished compulsory or secondary schooling, and intend to enter the job market. Considering the multitude of needs and demands entitled to every one of these individuals, efficient matching[3] is paramount. Through a LMIS, all these individuals can search vacancies, under their desired outcome, according to their region and profile. Adding to this, the system would provide information in terms of education and training providers, for the improvement of needed skills in the job market, if the individual in question is lacking them.

b) Secondary schools or an Education Ministry wishing to improve their programs in terms of labor market relevance. Through a LMIS, these stakeholders would be able to analyze current labor market trends (e.g., occupations on the rise or in decline) and change their programs accordingly.

c) Unemployed workers that registered in the public employment services and are starting their job search. Similar to the young individuals who have recently finished their

[3] Jobseekers applying for suitable positions according to their skills.

schooling, a LMIS can provide information to the worker regarding wages and jobs adjusted with his profile. Once again, matching is crucial. Following the previous comparison, a LMIS can, furthermore, provide information in terms of occupations in greater demand and training providers for the betterment of the worker skills, in order to adapt to the "new" job market.

d) Firms wishing to launch a new establishment, unsure about where to locate them. Through a LMIS, firms can gather information regarding local labor markets, in order to make efficient decisions in terms of its placement, attractiveness and choice of workers.

e) For a government that wishes to evaluate the impact of a program, the use of a LMIS is paramount. Through the system, the government could evaluate the impact of the program by comparing the outcomes of interest, before and after the introduction of the program, using a counterfactual approach, for example. Typically, evaluations of these caliper require rich data sets, which a well-developed LMIS encompasses.

### 1.3. WHAT CHARACTERIZES A WELL-DEVELOPED LMIS?

It is vital to acknowledge that a "perfect sketch" of a LMIS does not exist. Between developed and developing countries, the sophistication of these systems varies accordingly. Notwithstanding, their operability is commonly built through a technological infrastructure (e.g. information platform), regulations for the act of sharing and trading information and, consequently, an understanding of these regulations in order to guarantee the previous actions are suitable and appropriate[4].

As per the World Bank (2021), a well-functioning LMIS "encompasses institutional arrangements between key stakeholders[5], collaborative partnerships with private sector actors

[4] Martín I. (2011), Best Practice on Collecting and sharing migration data for the improvement of the labor market information system, ILO

[5] E.g. policymakers and the education system.

and advanced technology solutions to gather, validate, analyze and distribute LMI that is relevant, reliable, useful, and as comprehensive and up to date as possible"[6].

A previous study commissioned by Germany's Agency for International Cooperation (GIZ) depicts LMISs as ALMP tools that "collect, evaluate and provide labor market information to both the labor supply side and the labor demand side" in order to support skill progression[7].

Through a well-developed LMIS, the various stakeholders[8] involved in it, can carry out informed choices regarding the multitude of topics specific to each. In order to guarantee this, clear and concise services of job-matching, career and skills guidance need to be present, along with clear-cut government-backed services to fill the quotas associated with accessibility and reach.

## 2. METHODOLOGY

LMISs can serve developing countries effectively in areas such as impact evaluation of ALMPs and in the very performance of the labor market in question.

This Work Project aims to evaluate the literature in existence and attempt to draw new conclusions and reinforce previous ones, regarding the benefits and "dangers" of implementing these systems in African countries, more thoroughly, in Cape Verde.

## 3. OVERVIEW OF AFRICAN LABOR MARKET INFORMATION SYSTEMS

On the previous chapter, an emphasis on the presence of a well-developed LMIS has been mentioned, nevertheless its mere implementation will not bring about the intended results which could be obtained once it achieves its "full potential". In actuality, the potential of these systems can never be truly attained considering the constant need to update it with new LMI, along with a persistent enhancement of labor market structures. By carrying forth these crucial steps the

[6] World Bank. 2021. Toward a World-Class Labor Market Information System for Indonesia: An Assessment of the System Managed by the Indonesian Ministry of Manpower. © World Bank, Washington, DC. http://hdl.handle.net/10986/35378 License: CC BY 3.0 IGO.
[7] Silke Woltermann, (2012) The Labor Market Information System as an Instrument of Active Labor Market Policies, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
[8] E.g. job seekers; firms; students and schools; governmental departments, among others.

systems can continuously be up-to-date and provide the previously mentioned benefits.

Regardless of the advertisement on LMISs as tools for policymakers, its main focus, in order to provide the "building blocks" for a well-established system, should be the employers and jobseekers. When jobseekers delve into the system, the exhibit of vacancies, training and guidance services, from public and private services, along with unemployment benefits, is critical. Furthermore, when an employer accesses the system, the same range of systems must be provided, focusing on the matching of jobseekers with the available vacancies in the firm.

In spite of previous positive actions[9], the majority of LMISs on the continent remain stuck at basic levels of development. According to Powell and Reddy (2015), many of these systems do not provide notable services to policymakers, nor to employers and jobseekers[10]. There is a significant delay in Africa's standards of data autonomy and provision of credible results when it comes to certain labor market indicators[11], according to Sparreboom (2013). Johanson and Adams highlighted, in 2004, the dependence of LMISs in the continent on donor support, becoming obsolete and falling flat if discontinued[12].

Various explanations can be brought upon to evaluate the underperformance of these systems in the African context. Still, one persistent and common cycle is often mentioned. This vicious cycle depicts three interdependent pillars, more specifically, low demand, few resources and poor quality. As previously mentioned, great attention has been put in the development of these systems, nevertheless these projects are often overlooked when compared to other projects, specially donor-led initiatives. Consequently, few resources are left to project these

[9] Since 2015, the active development of LMIS has been put forth as a vital step in the economic development of African countries.
[10] Powell, M., & Reddy, V. (2015). Roadmap for the Implementation of a Skills Planning Unit. Labour Market Intelligence Partnership. https://psetresearchrepository.dhet.gov.za/show-pdf/394
[11] Sparreboom, T. (2013). Labour Market Information and Analysis Systems. Perspectives on labour economics for development . International Labour Organization. Geneva: ILO.
[12] Johanson, Richard K.; Adams, Arvil V.. 2004. Skills Development in Sub-Saharan Africa. Regional and Sectoral Studies;. © Washington, DC: World Bank. http://hdl.handle.net/10986/15028 License: CC BY 3.0 IGO. https://openknowledge.worldbank.org/server/api/core/bitstreams/43f2ab8a-d8ce-553b-8276-eaf3ccba05b8/content

systems forward, leading to poorly-developed structures. The lack of quality of LMISs (e.g. weak data) severely dampens the crucial analysis and information that they hope to disseminate.

A preceding study commissioned by the African Union (AU) with the aim to draw a roadmap for the development of LMISs in the continent holds that traditional assistance[13] has not produced improvements in labor market performance or in the sustainability of the systems and their services.

## 4. UNINTERRUPTED HANDICAPS IN THE DEVELOPMENT OF LMIS IN AFRICA

### 4.1. LACK OF INTEGRATION WITH POLICY MAKING CHANNELS

As previously mentioned, these "projects" are often overlooked and depicted as a secondary or even, tertiary, goal. This lack of exposure grants lackluster LMI for the different stakeholders involved. A significant number of these systems, in the past, have been internationally financed to push forth their development, but unfortunately this initial investment has seemed to have stagnated[14].

Many refer to the attribution of these systems to the department in charge of statistics of the country as a possible constraint. Measuring the accuracy of the most commonly used tools (e.g. labor force surveys), it is possible to display some inconsistencies and out-of- date data due to their complexity[15]. Nevertheless, considering the leverage and focus of these departments on data crucial to the betterment of these systems, their hand on the project is severely vital. Possibly, in order to mitigate these "monopolistic view", partnerships between governmental departments, i.e. between Statistical Departments and Labor/Economy Departments, could be beneficial. With this, different goals and objectives would intertwine and provide more up-to-date and reliable information and, considering the resource allocation at the hands of the other

[13] Engrossed in assembling employment statistics;
[14] Sorensen, Kjartan, and Jean-Michel Mas. "A Roadmap for the Development of Labor Market Information Systems." FHI 360, August 2016. https://www.fhi360.org/resource/roadmap-development-labor-market-information-systems.
[15] Powell, M., & Reddy, V. (2015). Roadmap for the Implementation of a Skills Planning Unit. Labour Market Intelligence Partnership. https://psetresearchrepository.dhet.gov.za/show-pdf/394

department, attenuate the vicious cycle previously mentioned.

Nevertheless, the previously alluded study under the domain of the AU signals that through the LMISs observed[16] it was common to note that although partnerships with other institutions were envisioned, these fall flat or do not proceed altogether, and the management of these systems remains the sole commitment of one department or institution[17]. As expected, this significantly damages the quality and usefulness of the information gathered and provided.

### 4.2. PRIVATE SECTOR "DISTRUST"

Representatives of Private Sector Associations have formerly critiqued the lackluster provision of relevant information[18], through these systems.

Despite their interests in the development of these information systems, due to this weak dissemination of desired information, the involvement of the sector is feeble.

It should be noted that granting a more active role in the governance of LMISs to the private sector is pivotal, considering their influence on the job market, being in terms of job creation or in more broader terms, their reach and resources. Through Private Employment Services (PrES) and Public Employment Services (PES), individual constraints would be complemented.

#### 4.2.1. PUBLIC-PRIVATE PARTNERSHIPS

Considering the rich data sets imbedded in LMIS, it is paramount to mention the benefits associated with Public-Private Partnerships (PPPs), most notably, the interchanging flows of information, when considering the role and accessibility of PrES and PES.

The flow from the former to the latter is associated with the fact that PrES have greater access to vacancies[19]. Taking this into account, private agencies would provide lists of

[16] Cameroon; Rwanda; Botswana.
[17] Sorensen, Kjartan, and Jean-Michel Mas. "A Roadmap for the Development of Labor Market Information Systems." FHI 360, August 2016. https://www.fhi360.org/resource/roadmap-development-labor-market-information-systems.
[18] E.g. available skills.
[19] Martins, Pedro S. . "2020 Labour Market Vision: Labour Market Information Systems for the New Decade." SOCIEUX+, July 2019. https://socieux.eu/reports/2020-labour-market-vision-labour-market-information-systems-for-the-new-decade/.

vacancies to PES regularly. On the other hand, PES have greater access to jobseekers[20], displaying a flow of information to PrES under these guidelines. This complementary arrangement would significantly improve the efficiency of the labor market, while creating the previously mentioned data sets.

Adding to the previous, it is important to mention that the viability of these partnerships depends greatly on the degree of customization of the underpinning data[21]. For example, the adoption of a set of common codes[22] to characterize vacancies and jobseekers, can greatly increase the efficiency and operability of a LMIS. To guarantee an extensive adoption of these common codes, PES play a predominant role in the engagement and persuasion of all the stakeholders involved.

This association would also demystify possible distrust in government statistics which typically arise in Africa. Moreover, this consortium would provide additional benefits to private enterprises. Typically, private job platforms are created by these to fill information gaps existent in the job market. With this new active role, resources spent on the creation of these platforms, could be used for more favorable contributions.

#### 4.2.2. SHORTAGE OF ANALYSTS

Another major obstruction for the development of these systems in the African context is the shortage of analysts. Johanson and Adams noted, in 2004, that qualified analysts were and will remain in high demand, making it difficult for them to remain in the public sector[23]. Once again, by providing a more active role to the private sector, this problem could slowly be solved.

### 4.3. DEFICIENCY IN INFORMAL LABOR MARKET INFORMATION

[20] Martins, Pedro S. . "2020 Labour Market Vision: Labour Market Information Systems for the New Decade." SOCIEUX+, July 2019. https://socieux.eu/reports/2020-labour-market-vision-labour-market-information-systems-for-the-new-decade/.
[21] *Ibidem*.
[22] E.g. occupations, industries, regions, schooling, previous employment spells, etc.
[23] Johanson, Richard K.; Adams, Arvil V.. 2004. Skills Development in Sub-Saharan Africa. Regional and Sectoral Studies;. © Washington, DC: World Bank. http://hdl.handle.net/10986/15028 License: CC BY 3.0 IGO. https://openknowledge.worldbank.org/server/api/core/bitstreams/43f2ab8a-d8ce-553b-8276-eaf3ccba05b8/content

There is a clear strong presence of the informal sector in the African Continent's labor markets. According to the International Labour Organization (ILO), by 2022, nearly 83% of employment in Africa was informal[24]. A LMIS "merely" focusing on the formal sector of the labor market would wreck itself in its development.

It is key that new approaches[25] are designed and implemented to gather data and information regarding this sector to avoid the previously alluded drawbacks in terms of attaining up-to-date data and information. Surveys depict an expensive backbone and due to the complexity of the sectors often analyzed, when the management of the data is finished, it has already become "old-fashioned".

With revamped approaches, typical constraints associated with the attainment of LMI for this sector[26] will be mitigated, leading to new data being collected, allowing for a careful analysis of this sector and, granting a possible betterment of the labor market outcomes of workers[27] within it.

#### 4.3.1. THE CURIOUS CASE OF THE "BISCATE" PLATFORM

A randomized controlled trial (RCT) was conducted in Mozambique regarding the effects on jobs outcomes of incentivizing young people to use digital platforms for job matching. A SMS was sent to randomly selected (treated) individuals, inviting them to register in one of the two following platforms: *Emprego* – traditional website to find formal jobs (vacancies posted online and applied to, accordingly); *Biscate* – informal labor market portal in Mozambique (workers post their availability and are contacted, accordingly).

Evidence gathered from the experiment depicted discouraging results in a widespread analysis[28]. There were no systematic positive effects on labor market outcomes (e.g., job

[24] In 2022, 95.708 Cape Verdeans worked as informal employees, with 53.8% of employment being informal.
[25] E.g. analyze rates of transition to the formal sector and the services provided in the informal sector.
[26] Vacancies on online job portals normally focus on the formal sector.
[27] Provision of better services; more and better assets; etc.
[28] Considering all treated individuals.

quality, hours worked, wage earnings, etc.) arising from the registration on the respective platforms. Adding to this, treated individuals appeared to register lower life satisfaction.

Despite disappointing results considering all treated individuals, uptake for the platforms increased significantly compared to the control group, as it would be expected. Consequently, treated individuals appeared to be searching more actively for work, compared to the control group. Finally, and possibly the most noteworthy finding, women that studied courses associated with manual and industrial jobs[29] and used the *Biscate* platform, had increases in hours worked and earnings.

Considering the results, the *Biscate* platform displayed some possible benefits associated to technology in the development of LMISs in the case of informal markets. Through the platform "workers indicate their occupation and location, while it also collects and displays ratings provided by users"[30]. Adding to this, recent evidence has suggested that the platform has "led to the establishment of informal apprenticeship networks and new forms of entrepreneurship"[31].

### 4.4. INEFFECTIVE DISSEMINATION OF LABOR MARKET INFORMATION

According to Powell and Reddy (2015) one of the most significant curbs in the blossoming of LMISs is related to deficiencies in the dissemination of LMI[32], which gruel the process of utilizing it efficiently. It is important to consider the accessibility of a typical jobseeker, who may face constraints in attaining relevant information for his job or skill training procurement process. With the growing importance and use of internet search engines, the dissemination of this reports should be a trivial question, nevertheless this seems to face some defaults. As LMIS should be user-centric, the information gathered should attend to all stakeholders (i.e.,

[29] Sen , Kunal, and Sam Jones. "Digital Platforms and Job Search: Experimental Evidence from Mozambique." CEPR, August 28, 2022. https://cepr.org/voxeu/columns/digital-platforms-and-job-search-experimental-evidence-mozambique.
[30] *Ibidem*.
[31] *Ibidem*.
[32] Powell, M., & Reddy, V. (2015). Roadmap for the Implementation of a Skills Planning Unit. Labour Market Intelligence Partnership. https://psetresearchrepository.dhet.gov.za/show-pdf/394

jobseekers, policymakers, researchers, students, etc.) and not only the most capable researchers.

Adding to this, it is decisive that the information disseminated is comprehensive and easily accessible. For example, information regarding courses on skills training should include detailed information of the requirements to enroll, the location of the exercise, among other basic instructions. Apart from this, considering the profile of the jobseeker, information should be catered to him/her.

## 5. SCOPE FOR IMPROVEMENT

### 5.1. HIGH-LEVEL SUPPORT

As it has been alluded, the role of governments in the operability and investment of these systems is pivotal. Through information flows between ministries and actors (i.e. labor and statistics), a state of symbiosis can be attained with LMISs. Due to the government's reach, the share of information would become more accessible.

Along with this reinforced role of the government, the previously mentioned attribution of a more active role to the private sector, represents a fulcrum step in order to establish an integrated knowledge base.

The active participation and interchanging nature of a system with various actors (e.g. employers, employees, online jobs platforms, etc.), ministries, firms, among other stakeholders, would allow for a constant up-to-date data transmission and flow, ensuring one of the most vital pillars for the accessibility and operability of these systems.

### 5.2. FOCUS ON PREEXISTING SOURCES OF LMI

In Africa, surveys and censuses conducted for the gathering of LMI are expensive and the data gathered from them, has turned obsolete when its analysis is completed, due to the complexity of information intended for collection. Considering this, preexisting sources of LMI have been advertised as efficient and inexpensive sources of this information.

Administrative data has taken a central role, in more recent years, in the development of

LMISs. The collection of this type of data can be conducted through a multitude of channels, most notably, Social Security. Apart from it, Public Service Departments, related Ministries (e.g. labor, education, etc.), the country's Tax Authority, Trade Associations, and even departments specific to other sectors such as agriculture or tourism.

Considering the multitude of available data ready to be extracted and used in these preexisting sources of LMI, the use of expensive surveys becomes a secondary thought.

#### 5.2.1. SOCIAL SECURITY DATA

There are some drawbacks when managing these types of data sets. First and foremost, the lack of detail in social security data is valuable to mention, since it mostly measures four indicators (the firm, the worker, the salary and the payment made to or by social security[33]), excluding other valuable indicators (e.g. schooling of the worker). Secondly, the lack of representativeness of the data, when measuring the labor market, arising from the influential presence of the informal sector in many developing countries, such as in the case of Cape Verde.

### 5.3. EXPAND INFORMAL LABOR MARKET KNOWLEDGE BASE

The informal market is prominent in Africa, and will remain for many years to come. With this, expanding the knowledge base concerning it is crucial. Once again, not through traditional analytical methods, but more prominently through the establishment of relations with organizations which engage directly with different actors (i.e. workers or firms) in the informal sector. Most notably, Microfinance institutions, Tax authorities and Trade associations depict a valuable body of information regarding this sector.

### 5.4. DEVELOP PARTNERSHIPS WITH UNIVERSITIES AND RESEARCH CENTERS

A possible approach that can provide some assistance to the departments in charge of

[33] Martins, Pedro S. . "2020 Labour Market Vision: Labour Market Information Systems for the New Decade." SOCIEUX+, July 2019. https://socieux.eu/reports/2020-labour-market-vision-labour-market-information-systems-for-the-new-decade/.

carrying forth the management of these systems is to entrust a role to research institutions, i.e. universities. These institutions could carry out the collection and treatment of data, as a segment to be evaluated under a specific course related to these systems. Or, under the guidelines of a thesis or a final work project, depending on the availability of the course for Master or Bachelor (i.e. undergraduate programs) students. Due to their reach and the ambient typically cultivated inside these type of institutions, the beforehand mentioned task can be more smoothly assembled and incentivized across students.

### 5.5. TIME FOR AN UPDATE?

The use of Artificial Intelligence (AI), for whichsoever goals, is undoubtedly a sensitive topic. Nevertheless, a growing number of companies and countries are using this "program" for the betterment of intended services. Startups, notably, are using data and specialized digital job platforms to better connect workers, in developing countries. Seekuur, a web-based startup that supports jobseekers in the Caribbean is a noteworthy example of the integration of AI for specialized job-matching and assistance in the recruitment processes of companies.

Nonetheless, AI's call forth as a "delicate issue" is not a hypothetical notion, with many advising precaution in regard to the risks involved. The untampered use of this technology, in this context, can lead to recruitment bias. In order to avoid this major drawback in the intended matching of jobseekers, Seekuur "aggregates and standardizes data from candidates and hiring companies before matching them via AI"[34].

Taking into account, the use of this "program" in job-matching platforms, by startups, questions arise regarding its use in LMISs. Focusing on the evidence formerly presented, there may clear benefits in its use. Nevertheless, as alluded earlier, crucial steps such as the standardization of the pulled data must be taken to guarantee that its treatment is not biased and

[34] Munoz, Angelica, Koen Maaskant, Kaleab M. Tesema, and Nicholas Kee. "How Startups in Developing Countries Use Data to Better Connect Workers with Jobs." World Bank Blogs, April 13, 2022. https://blogs.worldbank.org/jobs/how-startups-developing-countries-use-data-better-connect-workers-jobs.

insecure.

In the dominion of AI, it is important to mention the active role of JANZZ Technology in the advancement of LMISs of countries in concordat with the company. Through its use, the company transforms labor market data into valuable labor market intelligence regarding the workforce, possible skill gaps and consequent training opportunities. Moreover, up-to-date AI systems allow the company to indulge in the design of full system architectures.

### 5.5.1. FEASIBILITY IN THE AFRICAN CONTEXT

The adoption of AI systems is not achieved through a simple download in the "World Wide Web". It requires investment, which typically comes about by way of government channels or foreign investment.

In recent years, the desire to integrate AI in the governmental infrastructure has increased, at a steady rate. This is explained by the challenges governments face when contemplating the adoption of these systems, more specifically, lackluster investment in AI research and innovation and ambiguous regulation[35] regarding its use[36]. The role of research centers and universities could provide, once again, a fair mitigation of these constraints, providing aid in the assessment and development of AI.

The viability of AI in the African continent is severely dampened considering the internet usage in the region. According to the International Telecommunication Union (ITU), only 40% of the population has access to the internet[37]. Moreover, considering least-developed and landlocked countries the percentage decreases to 36%[38].

As others have previously exhaustingly mentioned, there are other prime concerns in the

[35] Ethical and secure management.
[36] Berglind, Niklas, Ankit Fadia, and Tom Isherwood. "Niklas Berglind." *McKinsey & Company*, July 25, 2022. https://www.mckinsey.com/industries/public-sector/our-insights/the-potential-value-of-ai-and-how-governments-could-look-to-capture-it.
[37] Development Aid. "How AI Can Impact Developing Countries: Positives and Negatives." *DevelopmentAid*, March 22, 2023. https://www.developmentaid.org/news-stream/post/158745/how-ai-can-impact-developing-countries.
[38] *Ibidem*.

region, such as education and healthcare. Moreover, the complex infrastructure of data under these systems are in a general sense, unaffordable for the time being[39].

The enterprise software company ITRex Group produced an estimation of US$50 thousand for a minimum viable product of AI[40], which would increase consistently with the level of complexity[41]. Considering the complex dynamics of a LMIS, namely the job matching mechanism, skills training provision adapted to the job seeker, and the sheer amount of information for policymakers, it is safe to assume that the previous figure would be significantly higher. For the foreseeable future, it is better and cheaper to work with structured data such as the previously discussed administrative data.

## 6. CAPE VERDEAN CONTEXT

### 6.1. PLAYERS AND STAKEHOLDERS

#### 6.1.1. THE ROLE OF "OBSERVATÓRIO DO MERCADO DE TRABALHO"

LMISs are not a newfound concept in Cape Verde. Many AU countries have pushing forth for their advancement for almost a decade. Nevertheless, as previously mentioned, many of these systems find themselves in basic stages of development.

"Observatório do Mercado de Trabalho" (OMT) is a Cape Verdean institution established by the Legislative Decree No. 89/IX/2020 on May 7th, 2020, being harbored by the Economic, Social and Environmental Council[42]. in charge of centralizing the labor market data, establishing a database regarding vacancies, skills training and advancement, beneficiaries from ALMP, among other fundamental indicators from a well-developed LMIS. The existence of such platform already depicts a major development in regard to the importance being given to

[39] Chatterjee, Joyjit. "Developing Countries Are Being Left behind in the AI Race – and That's a Problem for All of Us." The Conversation, April 13, 2022. https://theconversation.com/developing-countries-are-being-left-behind-in-the-ai-race-and-thats-a-problem-for-all-of-us-180218.
[40] Likhadzed, Vitali , and Andrei Klubnikin. "How Much Does Artificial Intelligence Cost in 2023? — ITRex." *ITRex*, July 12, 2023. https://itrexgroup.com/blog/how-much-does-artificial-intelligence-cost/.
[41] Type and scope of the system; quantity of data; accuracy of the system.
[42] Entity established by the Constitution of the Republic of Cape Verde.

these systems.

Moreover, and contrary to what is seen in other AU LMISs, the institution displays official support from the governmental body, along with protocols with two major Public Employment institutes, more specifically, "Instituto do Emprego e Formação Profissional" (IEFP) and "Direção Nacional Administração Pública" (DNAP).

### 6.1.2. ONLINE JOBS PLATFORMS

Apart from the beforehand mentioned Public Employment institutes, it is possible to underline six major online jobs platforms in Cape Verde, with varying degrees of quality and accessibility. It should be noted that many private enterprises (e.g. consulting companies) display vacancies in their own websites, but for the purpose of this study, the previously mentioned platforms take a central role, considering the development of LMISs.

The six major platforms for jobs and professional internships, by order of appearance, are: "VAGAS CV"; "Empregos.cv"; "YP People Jobs"; "Negocia"; and "NOSiAkademia". Through an analysis of the individual websites of the platforms it was possible to deduct some important considerations.

In a wide analysis, information regarding the number of registered jobseekers and vacancies is severely lacking, with the exception of "VAGAS CV". The digital platform delivers a rough estimate of registered jobseekers, whereas information regarding vacancies is well-established being split across a multitude of indicators[43]. "Negocia" and "NOSiAkademia" also depict relatively solid websites depicting information regarding a smaller quantity of vacancies when compared to the previous, companies registered, and internships, respectively. Considering the companies registered or in partnerships with the digital platforms, it was possible to see that many of the same companies are registered across all platforms. [See Appendix: Figure 6]

[43] E.g. job vacancies, internships, "concursos", "Biskaiti", job vacancies in Portugal, etc.

### 6.1.3. PRIVATE COMPANIES

Beyond online jobs platforms and PES, it is common for companies namely in the consulting sector to communicate their vacancies in their own websites. In order to guarantee that the systems in question are capable of producing previously alluded to positive results in the performance of the labor market, being in developed or developing countries, companies must increase their involvement, through flows of information with PES, for instance.

### 6.1.4. GOVERNMENTAL BODIES

When measuring the involvement of the Cape Verdean Government in the development of the country's LMIS it is vital to mention the active role of "Instituto Nacional de Previdência Social"[44] (INPS) and the Ministry of Finance, more specifically, through "Direção Nacional de Receitas do Estado" (DNRE), as suppliers of labor market microdata.

The first provides social security services, with an active system being built at the present time, which will help with the gathering of the previously discussed administrative data, essential for the creation of well-structured LMIS database.

The latter, through income taxes, and other mechanisms, allows for the collection of individual information regarding salary, employment status, type of work, industry/sector of labor, among other labor market indicators which assist in the creation of the beforehand mentioned database. Through these different types of information, embedded in a common system, it is possible to observe which sectors are growing or declining[45], for instance, allowing for a better targeting system for programs and policies to mitigate these labor market frictions.

## 6.2. Analysis of LMIS in Cape Verde

Considering OMT's role, and the databases created, reports evaluating the development of the Cape Verdean LMIS are elaborated by the institution. In 2022, a report evaluating the Cape Verdean labor market and anticipation of skills information system, was published and the

[44] Social Security.
[45] E.g. according to the salaries of workers.

reinforced several previously mentioned challenges common to LMIS in the African continent.

The report displayed that Cape Verde did not have a capable LMIS, due to limited government support, lack of private sector involvement and unsatisfactory dissemination of data.

## 7. CONCLUSION

From the investigation carried out, it was possible to extract important information in regard to benefits that informed choices, fueled by LMISs, can bring about, and the current footing of these systems in Africa and more specifically, Cape Verde.

It is crucial that these systems are in place to carry out any type of impact evaluation[46] of ALMPs, considering that in order to reach meaningful and accurate results, substantially rich data sets are needed, which can be built under the domain of these systems.

With respects to the educational sector, these type of systems appear as a grand tool, allowing governments and institutions to make informed choices regarding which formations and courses to carry out and invest, and which ones are losing force in the labor market, and consequently, should be put in a "back-burner".

One of the big themes in the backdrop of this Work Project was the strong presence of the informal market in Cape Verde and how LMISs figured into this. The evidence previously mentioned regarding the *Biscate* platform (in Mozambique), showed how digital job platforms allow for a more secure functioning of the informal sector, where workers are more informed leading to a possible betterment of their labor market outcomes. This served as an important reminder that LMISs can bring about benefits otherwise often constrained by labor market inconsistencies and frictions.

In Cape Verde, the jobs platform which can better serve the beforehand mentioned purpose appears to be "VAGAS CV". During a meeting with Cape Verde's OMT it was mentioned that

[46] E.g. counterfactual approach.

there is a desire to create protocols with “VAGAS CV” and “Empregos.cv”. The establishment of protocols consisting in the provision of data regarding vacancies by the jobs platforms would lead to more detailed databases, which in turn would allow for more accurately disseminated LMI. Considering this, the establishment of this association should be considered a priority.

Alas, OMT cannot carry out the advancement of the Cape Verdean LMIS by itself, due to a limited number of analysts[47]. Considering the important role this systems can play in the economic development of developing countries, partnerships with other governmental departments, universities, and research centers (in Cape Verde and or abroad) should be procured and initiated.

However, some governmental departments have already initiated this contact, with DNRE and INPS, contributing to the databases of the Cape Verdean LMIS. The development of these systems should have a strong focus on the administrative data shared through these contributions due their relative cheapness and up-to-date information when compared to census and surveys.

As examined, there is a lack of involvement of the Private Sector in the wide-range development of African LMISs. This “tension”, possibly arising from distrust or pessimism regarding the provision of valuable data, stagnates the advancement of these systems. In order to guarantee that a well-grounded development of LMISs is pursued, cooperation through a better delimitation of roles must be procured.

Ultimately, for the foreseeable future, AI managed systems are not possible, due to its costs. Still, slowly paving the way for these is favorable, since being unprepared could create a bigger gap between developed and developing countries.

It should be noted that LMISs in developing countries should not be seen as a simple emulation of what is practiced in developed countries. Each country possesses a specific labor

[47] Four.

market with different frictions and constraints, that can be often mitigated through the use of personalized systems. Hopefully, these conclusions can provide a better understanding of how important these systems can be in Cape Verde, and in other developing countries.

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## APPENDIX

Table of Abbreviations

| | |
|---|---|
| ALMP | Active Labor Market Policies |
| LMIS | Labor Market Information System |
| LMI | Labor Market Information |
| KEIS | Korea's Employment Information Service |
| GIZ | Germany's Agency for International Cooperation |
| AU | African Union |
| PrES | Private Employment Services |
| PES | Public Employment Services |
| PPP | Public-Private Partnership |
| ILO | International Labour Organization |
| RCT | Randomized Controlled Trial |
| AI | Artificial Intelligence |
| ITU | International Telecommunication Union |
| OMT | Observatório do Mercado de Trabalho |
| IEFP | Instituto do Emprego e Formação Profissional |
| DNAP | Direção Nacional Administração Pública |
| INPS | Instituto Nacional de Previdência Social |
| DNRE | Direção Nacional de Receitas do Estado |

Figure 1: Table of Abbreviations

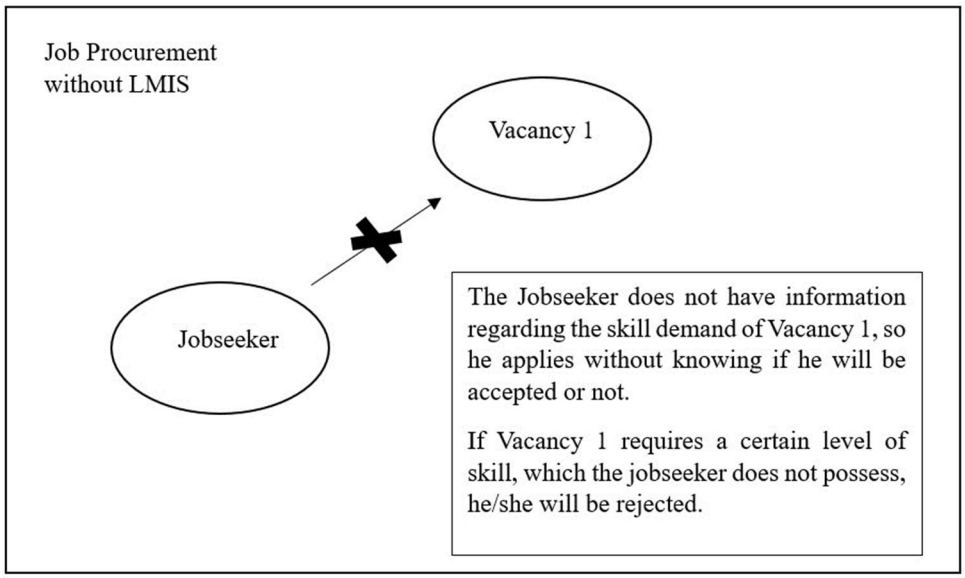


Figure 2: Job Procurement without LMIS

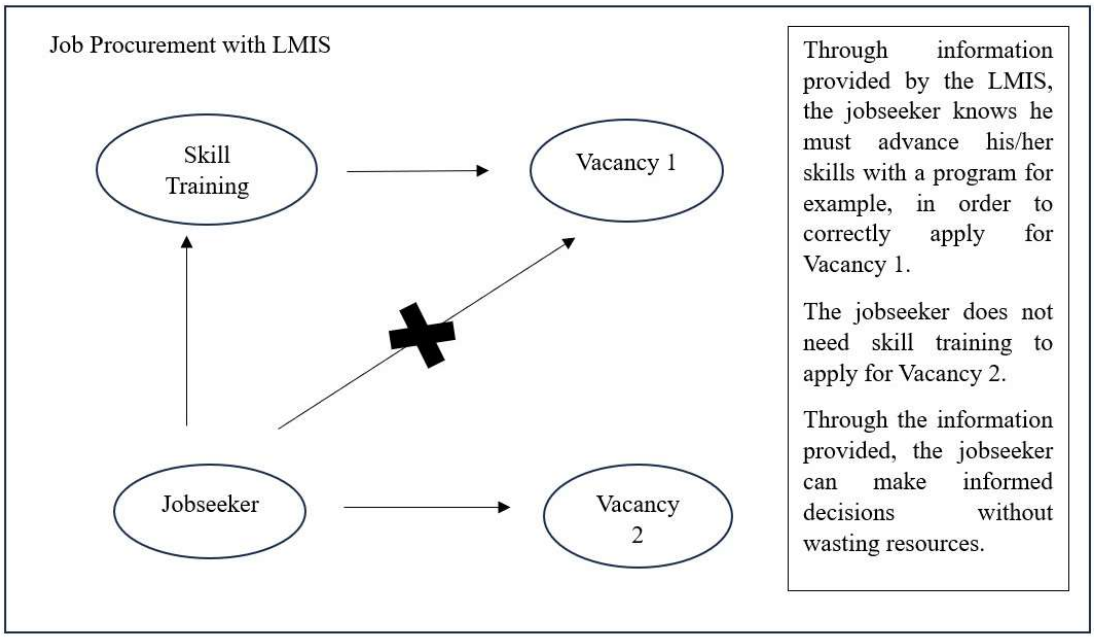


Figure 3: Job Procurement with LMIS

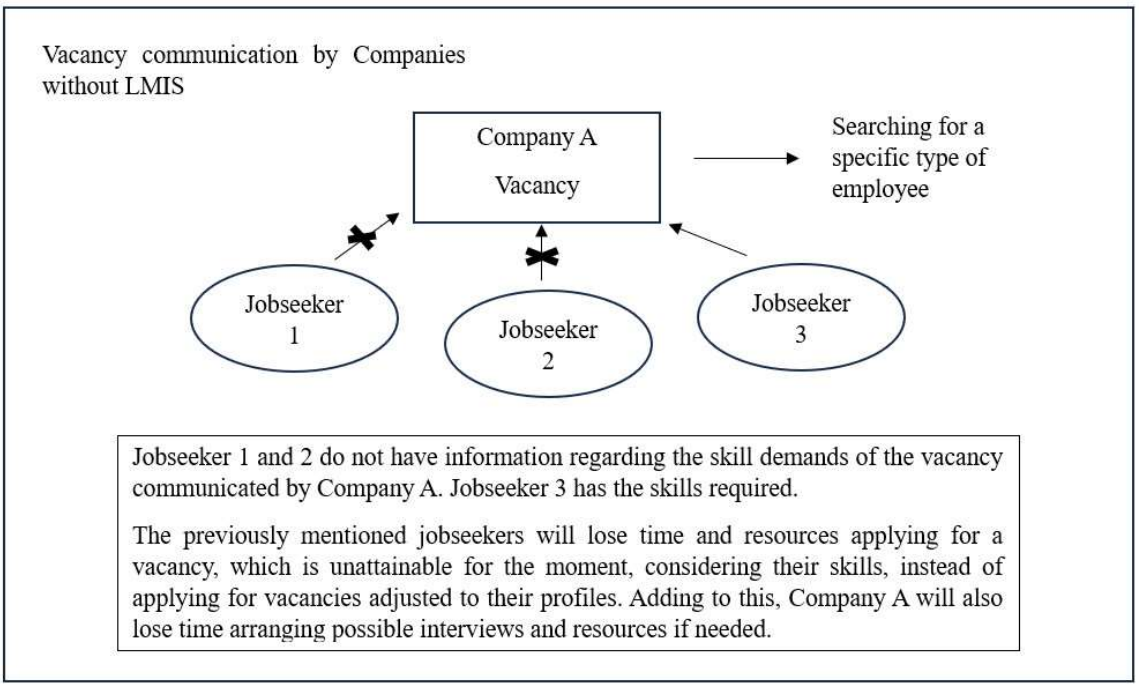


Figure 4: Vacancy communication by Companies without LMIS

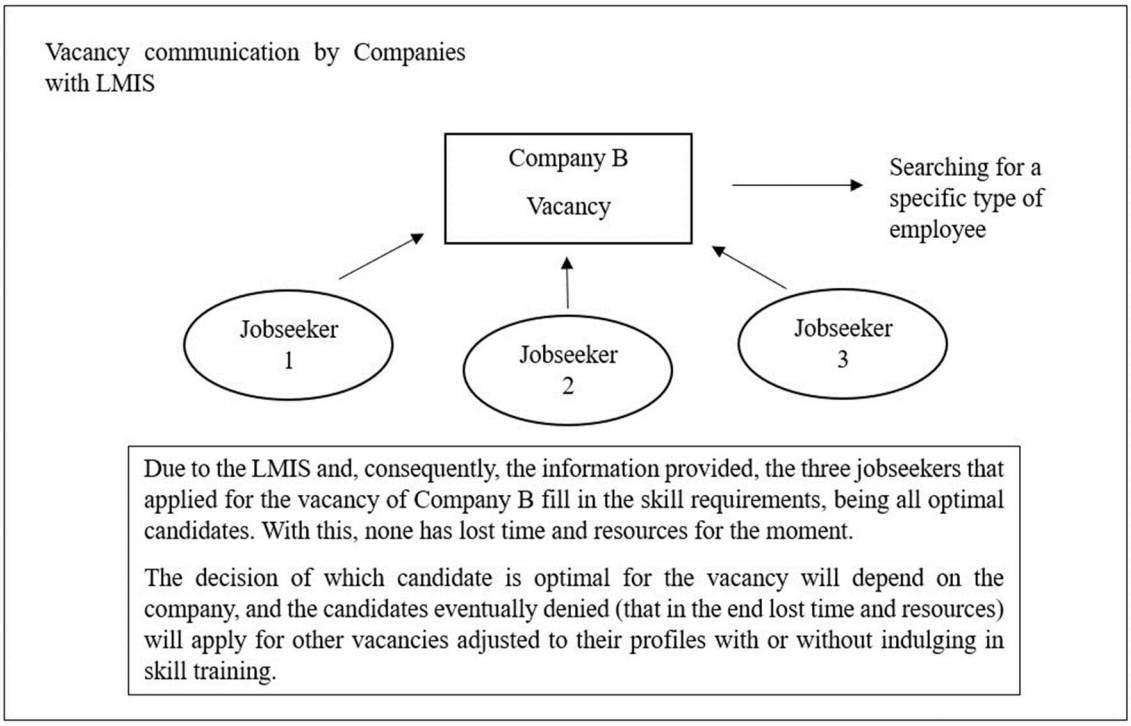


Figure 5: Vacancy communication by Companies with LMIS

| Digital Job Platforms in Cape Verde | | | | |
|---|---|---|---|---|
| **Name** | **Number of registered jobseekers** | **Number of Vacancies** | **Partners** | **Additional Information** |
| **Negocia** | No Information | 597<br>(majority in the island Santiago) | Ex: UN Development Programme (UNDP); Câmara de Comércio de Sotavento; Integrated National Financing Framework (INFF) | 55 companies are registered (Ex: Electra; Banco Caboverdiano de Negócios; Business Incubation Center (BIC), among others);<br>The number of formations posted on the platform is 90;<br>The numbet of "concursos" (for schorlarships, public vacancies, etc.) available is 34. |
| **Vagas Cabo Verde** | 61300* | 1411<br>(total vacancies)<br>1168**<br>(Job vacancies + internships + concursos)<br>1307<br>(Job vacancies + internships + concursos)<br>+<br>Job vacancies in Portugal and Spain | No information | The total number of vacancies is obtained through the sum of: "Abertas" (17); "Artigos" (14); "Biskaiti" (13); "Bolsas" (15); "Competir CV" (8); "Concursos" (63); "Cursos" (2); "Emprego" (908); "Espanha" (2); "Estágios" (197); "Freelancers" (8); "Kwan" (4); "Nôs Ferry" (5); "Plaza Park" (3); "Prestação de Serviço" (2); "Programas" (6); "Vagas PT" (137); "Vistos" (36); "Voluntariado" (3). |
| **NosiAkademia** | 2023: 53 (Management Sector) + 47 (Tecnhological Sector)<br>2022: 12 (Management Sector) + 44 (Tecnhological Sector)<br>2021: 13 (Management Sector) + 35 (Tecnhological Sector)<br>*** | No information | Ex: Cape Verdean Government; Huawei; Microsoft; PricewaterhouseCoopers (PwC); VisionWare | The platform contains PDF files with the number of interns admited in internship programs (in management and technological sectors), their names and universities they attended. |
| **Empregos Cabo Verde** | No Information | No information**** | No information***** | Companies can subscribe packages similar to the ones offered by Telecom operators, which include different benefits, such as more advertisements. |
| **YP People Jobs** | No Information | No information | Ex: Ministério das Finanças e do Planeamento; Directel<br>Cabo Verde; Electra; Bolsa de Valores Cabo Verde; Casa do Cidadão; Correios de Cabo Verde; Tecnicil indústria; Banco BAI Cabo Verde; TAAG; Ministério da Justiça Cabo Verde; Cabo Verde Telecom; News Phone; Buildertrend; Duda; Páginas Amarelas de Cabo Verde | The platform offers formation to jobseekers in order to improve their skills. |

* = possible estimation, considering that the Facebook group has this amount of members, and the platform posts vacancies posted in the Facebook page.
** = this value appears to be the most suitable for this study, considering it focus solely on Cape Verde and does not consider many of the indicators, such as "voluntariado" (unpaid work) that the total value of vacancies considers.
Still, considering the number of "Biskaiti" offers may be favorable, due to these reporting typically to the informal market.
*** = NosiAkademia is digital platform directed to internships, so the values presented above depict individuals accepted to the internships under this platform.
**** = when entering the platform, solely five vacancies are presented under the designation "Highlighted Vacancies".
***** = when registering on the platform as a company, a multitude of companies are presented, but no information is displayed regarding their status of partnership. Ex of companies: BIC; Banco BAI Cabo Verde; MC Consulting, among others.

Figure 6: Digital Job Platforms in Cape Verde