

# Wage-setting in Collective Bargaining Agreements in Sub Saharan Africa: Analyses using WageIndicator data

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## **Abstract**

Collective bargaining agreements (CBAs) play a pivotal role in shaping employment relationships within economic sectors. Negotiations involve worker and employer representatives, often with governmental involvement. This study examines the prevalence of supplementary financial benefits within CBAs in Africa and evaluates the influence of industry sectors on wage determination. Using data from the WageIndicator collective bargaining database, featuring over 2000 coded agreements from 67 countries, and a comprehensive desktop review, we quantitatively analyse more than 424 CBAs from 20 African nations. Notably, manufacturing comprises a third of the agreements, followed by agriculture, transport, and finance, while nearly 90% of these CBAs contain at least one wage-related clause. Approximately 60% of these clauses stipulate wage agreements through individual contracts, with sectoral and company-level agreements accounting for the remainder. Through logit and multinomial logit models, our analysis indicates that wage clauses are more prevalent in manufacturing, finance, and mining and construction sectors, but less common in public administration, defense, and education sectors across African countries. This study's unique focus on CBA content provides a foundation for future research, offering insights into how wage determinations within CBAs compare to achieving fair wages in Africa.

**Keywords:** Africa, Collective bargaining, WageIndicator, wage-setting, sectors of industry.

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## **1. Introduction**

Collective bargaining is the process of negotiation between employers and employees, usually through their representatives, to determine the terms and conditions of employment. The International Labour Organization (ILO) defines collective bargaining as the process of negotiation that occurs between an employer or group of employers, along with one or more employers' organizations, and one or more workers' organizations. The purpose of these negotiations is to establish working conditions and employment terms (Hayter and Stoevska, 2010). Wage-setting in collective bargaining are important components of labour market institutions that have a significant impact on labour market outcomes., Wage settings institutions and collective bargaining agreements are important in understanding the global economy in relation to national labour markets and industrial relations systems (Besamusca and Tjeldens, 2015). In the theoretical view, wage-setting are negotiated at a decentralised level in which individual firms and workers determine wages, unlike the centralised system where employers negotiate wages with trade unions (Bhuller et al., 2022). This has led to the Calmfors-Driffill hypothesis in which both very centralised and very decentralised bargaining systems are likely to produce real-wage moderation and high employment (Calmfors and Driffill, 1988).

During the 1980s, there was an increasing focus on examining the impacts of different bargaining systems, with the argument being made that centralized wage bargaining can contribute to overall moderation of real wages and a reduction in unemployment levels (Calmfors, 1993). Different theoretical frameworks have been used to analyse the impact of centralized wage bargaining on the aggregate real wage. These frameworks range from union wage-setting to efficiency-wage models. In the monopoly-union framework, wages are unilaterally set by unions, with trade-offs being made between the benefits of a real wage increase for union members and the loss of employment (Layard et al., 1991). The efficiency-wage hypothesis, on the other hand, assumes that wages are unilaterally set by employers, who weigh the costs of higher wages due to increased wage bills against the benefits of higher employee effort or reduced labour turnover. Under decentralized conditions, an individual wage setter is strongly motivated to align their expected wage with the aggregate wage due to envy or efficiency-wage considerations (Bhaskar, 1990). However, the most realistic models are bargaining models, where unions and employers negotiate how to share production revenues, with trade-offs between the benefits of higher wages for employees and the associated decrease in profits for employers (Calmfors, 1993).

In Africa, wage-setting and collective bargaining systems have been established to address issues of inequality and social justice. The African continent is home to a diverse range of economies, political systems, and labour market conditions, and as such, wage-setting and collective bargaining practices vary greatly across countries and regions. While some countries have highly centralized wage-setting systems, others have decentralized systems that allow for more negotiation at the local level.

Additionally, the strength of trade unions also varies widely, with some countries having strong unions that play an active role in collective bargaining, while others have weaker unions with limited bargaining power. Despite the importance of wage-setting and collective bargaining in promoting equitable distribution of income and addressing issues of social justice, there is a lack of empirical research on the effectiveness of these systems in Africa.

The lack of empirical studies on decentralized wage settings is often suggested to relate to a lack of data on collective bargaining on the African continent. Very little is known about what exactly is agreed in these collective bargaining agreements (Besamusca and Tijdens, 2015, 87). Two databases with collective bargaining agreement texts covering Africa are available in this respect: the WageIndicator database, and the AGREED - Agreements Database of the South African Labour Research Service (LRS, 2022). These institutions code agreements differently and on varying levels of detail across different sectors. The process of collecting, reading, and coding these collective agreements is a time-consuming task. The lack of comprehensive data presents a challenge for researchers who seek to investigate the diverse issues negotiated in collective agreements especially related to wage settings. As stated by Besamusca and Tijdens (2015, 87) “Typically studies exploring wage setting differentiate between those covered and those not covered, sometimes distinguishing between different bargaining regimes, and occasionally taking industry dummies as a proxy for the variation in collective agreements”. Pay scales and settings are commonly used in collective agreements to distinguish between job categories and levels within an industry or company. It is generally assumed that pay scales tie wages to certified skills, such as attained educational levels or specific vocational qualifications. However, there is currently no research available in the African context that provides a comprehensive understanding of the importance of collective bargaining in pay-settings as well as other additional financial benefits agreed within the agreements.

In this context, the following research questions will be addressed: (1) apart from wages, how many additional financial benefits are agreed within the collective bargaining agreements in African countries? (2) how important are the sectors of industry in wage settings? (3) how important are sectors of industry in wage level determination? The paper adopts an empirical strategy which is descriptive and regression-based. Data for the analysis is obtained from the WageIndicator database. WageIndicator has developed an innovative method for gathering, annotating, coding, and publishing collective bargaining agreement texts in over 80 countries worldwide. The WageIndicator database was primarily established to enhance the content of WageIndicator's websites. However, it also offers a unique opportunity to examine the diversity within and among agreements and the global level using a comparison tool. Data collection began in December 2013, and this study examines the content of 424 agreements in 20 African countries that were collected by April 2023. Table 1 shows the number of

collective bargaining per country in the database with most of the agreements (54.2%) having been ratified and a majority (83.7%) of them concluded in the private sector.

**Table 1: Collective Bargaining agreements per country**

Country	Number	Number of agreements Ratified	Number of agreements signed in the Private Sector	Single Enterprise bargaining agreements	Language of the agreement
Burundi	19	17	2	18	French
Benin	23	19	10	18	French
Ethiopia	66	53	66	66	English
Ghana	38	25	33	38	English
Guinea	1	1	1	0	French
Kenya	90	7	89	78	English
Lesotho	5	1	5	4	English
Madagascar	13	6	12	9	French
Malawi	3	1	3	2	English
Mozambique	11	7	10	11	Portuguese
Niger	7	4	3	4	French
Rwanda	4	3	3	4	English
Senegal	28	22	23	3	French
Sierra Leone	2	2	1	0	English
South Africa	3	1	3	2	English
Zimbabwe	10	4	10	0	English
Togo	16	5	13	1	French
Uganda	29	12	25	19	English
Tanzania	34	22	33	32	English
Zambia	22	18	10	22	English
<b>Total</b>	<b>424</b>	<b>230 (54.2%)</b>	<b>355 (83.7%)</b>	<b>331 (78.1%)</b>	

**Source:** WageIndicator Collective Agreement Database (2023), selection of African countries.

The rest of this paper is organised as follows: section 2 reviews the single and multiple enterprise bargaining process. Section 3 deals with the literature review. Section 4 dwells on the data, methodology and estimation strategy. Section 5 focuses on the empirical results, and conclusion and policy implications are outlined in section 6.

## **2. Multi-employer versus single employer agreements in Africa**

In Africa, collective bargaining agreements are either negotiated by multi-employer bargaining or single employer bargaining. Unlike the single employer bargaining which takes place at branch, company or corporate levels, the multi-employer bargaining involves a number of employers represented in the bargaining process by an employer' organization (Godfrey, 2018). Multi-employer bargaining has its origins from Europe and dates back to the early 20<sup>th</sup> century as a mechanism through which trade unions and employers' organizations could democratize the economy by jointly regulating sectors through collective agreements that would be legislated (Dukes, 2008). The establishment of the multi-employer bargaining agreements was amplified in advanced industrialised countries after the First World War -

with the emergence of social democratic parties. As stated by Godfrey (2018): “The emergence of social democratic political parties after the First World War .... provided a fertile environment for the establishment of multi-employer bargaining arrangements.” (p. 1). Briefly after the First World War, there was a trend of the working class organizing into sectoral (instead of company-based) trade unions leading to increased pressure for labour legislation and the surge of multi-employer bargaining arrangements.

A somewhat similar trend could be seen in Europe soon after the Second World War - less linked with the social democracy but more as part of “a wider societal compromise that linked high investment levels, the increasing productivity of the economy as a whole and substantial economic growth with rising wages (...). Until its gradual demise after 1973-75, institutionalised forms of social dialogue were a core feature of this system, with solidaristic wage determination as its crown jewel.” (Van Klaveren and Gregory 2019, p. 16)”. However, the economic downturn of the 1970s created a less favourable environment for multi-employer bargaining as it was regarded as a ‘one size fits all’ approach which does not accommodate individual firms’ circumstances as well as being a major contributor to rigidity. From the 1980s, there was a shift towards decentralised bargaining due to the pressure exerted by governments and employers as single employer bargaining produces agreements that were supposed to be more responsive to the competitive circumstances of individual firms. More so, the worldwide dominant *political* move towards neo-liberalism at the time (Thatcher, Reagan), without a clear economic rationale, played at least an even important role. That neo-liberal ideology was also visible in policies of the European Commission (Van Klaveren and Gregory 2019, p. 19).

In the African context, the concept of multi-employer bargaining was first adopted in South Africa when it influenced early labour legislation in several Commonwealth countries (Godfrey et al., 2010; Godfrey 2018). It should be noted that under (semi) colonial rule, European legislation and bargaining practices played a significant role in African countries such as South Africa and Nigeria. As opposed to the single employer bargaining, one main feature of multi-employer bargaining agreement is the extension of the agreement to employers and employees who are not members of the organization (non-parties) that negotiated and probably signed the agreement. This extends the coverage of the multi-employer bargaining agreement to regional or national level for a particular sub-sector or sector with the key principle for legislative support being that the parties must be representative, like in the case of South African collective bargaining (Godfrey 2018). (Mandatory) extension (not widespread in African collective bargaining) is widespread in Europe though with some countries as exceptions (Van Klaveren and Gregory 2019).

The WageIndicator database shows that single-employer agreements are very common in French speaking countries, with most English-speaking countries taking a middle position (Table 1). For the

case of South Africa in particular, multi-employer bargaining was predominantly set in the legislative framework since the early 20<sup>th</sup> century which requires voluntary participation and representativity for the parties to the agreement that wish to extend it to non-members of the relevant employers' organisations (Godfrey, 2018).

### **3. Literature Review**

#### **3.1 Theoretical Literature**

Based on the works of economists and some social scientists, several theories of pay setting have been proposed. Starting with the bargaining theory which dwells on the classical economic doctrine of Adam Smith and was mathematically modelled by Pigou (1933). The idea underpinning the bargaining theory is that wages are determined by the relative bargaining power of workers and employers. Workers with strong bargaining power, due to unionization or high demand for their skills are able to negotiate for higher wages. It assumes that workers and firms have a perception about maximum and minimum acceptable wage levels that provide boundaries to the contract zone. The absence of a contract zone makes strikes inevitable. However, the theory fails to provide a determinate solution for the bargaining outcomes. Hicks (1963) attempted to find such a solution based on the costs of strikes, while explaining pre-strike conditions, though it is impossible to estimate strike costs before the strike occurs.

The marginalists (Menger, Jevons and Walras) and economists from the Austrian School (Menger, Von Böhm-Bawerk) challenged the classical labour theory by emphasizing the importance of subjective value and marginal productivity in determining wages. According to the marginalists' view, wages were determined by the marginal productivity of labour, or the additional output produced by an additional unit of labour. Thus, workers who were more productive would earn higher wages, while those who were less productive would earn lower wages (individual productivity). The Austrian School, in particular, emphasized the importance of market processes and the role of entrepreneurs in identifying and exploiting opportunities for profit. According to this view, entrepreneurs would hire workers based on their productivity and would adjust wages in response to changes in labour supply and demand. Building on these views, Hicks (1963) presented the theory of marginal productivity as a wage determination theory taking the special state of an economy in which there is perfect competition, no technological progress and no uncertainty and risk. The theory posits that a worker's wage is determined by the marginal productivity for each unit of labour input. Hence, employers pay workers according to the value they add to the production process, with more productive labourers receiving higher wages. This theory formed the basis for the human capital theory advanced by Mincer (1975) which suggests that individual wages are primarily determined by their skills, education, and experience which collectively represent their human capital. The theory assumes that investment in education is necessary to acquire skills and training which, in turn, will increase individual capital (Blundell et al.,

1999). Therefore, people would invest in education up to the point where the private benefits from education are equal to the private cost. Individuals become productive with investment in education and training and turn to earn higher wages.

Building from the human capital theory, Jovanovic (1979) developed a job-matching theory which argues that there exists a positive correlation between wages and tenure and a negative relation between wages and turnover. Due to differences in workers' suitability to different firms, only workers who perfectly match with jobs will be employed and continue to receive higher wages. Liu (1986) states that job matching arises as a result of incomplete information and heterogeneity in the labour market. Similar to the human capital theory, firms offer higher wages as tenure progresses above the market wages. In addition, this assertion was supported by Tachibanaki (1996) who stated that a wage growth path is likely to be positive for employees who stay with current employers.

One of the key contributions to the understanding of wage setting is the institutional theory (Thurow, 1983), among other scholars. This theory highlights the significant impact of institutional factors, including labor market structures, labor legislation, social norms, and collective bargaining agreements, on the determination of wages. According to this theory, wages are not solely determined by the forces of supply and demand, but rather by the prevailing institutional arrangements within a specific firm or industry. Thurow's institutional theory recognizes that the wage-setting process is influenced by a complex interplay of factors beyond market forces. Institutional factors such as labor market structures refer to the organization and functioning of the labor market, including factors like union density and industry concentration. Labor legislation, including laws related to minimum wages, working conditions, and employment protection, also play a role in shaping wage outcomes. Collective bargaining agreements are crucial institutional elements considered in this theory because they establish specific terms and conditions of employment, including wage levels, job classifications, and benefits. The theory recognizes that wage outcomes are influenced not only by market forces but also by the institutional framework in which employment relationships are embedded. Building on this theory, this paper aims to understand the broader institutional context in which pay levels are determined within the collective bargaining agreements in Africa. This could enable policy makers to better understand the drivers of pay settings and work to create more equitable compensation schemes across sectors and countries within Africa.

### **3.2 Empirical Literature**

In Africa, wage-setting and collective bargaining have been significant issues in where many workers face low wages and poor working conditions. One of the main challenges facing wage-setting and collective bargaining in Africa is the lack of formal institutions to regulate these processes. As a result,

many workers are not covered by collective bargaining agreements, and those that are often face weak bargaining positions. This has been linked to factors such as the informal nature of many African economies (Tijdens et al., 2015) and the limited capacity of trade unions (Nkomo, 2010; Verhagen and Botha, 2018). Despite these challenges, there have been some successful efforts to improve wage-setting and collective bargaining in Africa. For example, some countries have established national bargaining councils to regulate wage-setting in certain sectors. Others have implemented social dialogue mechanisms to facilitate negotiation between employers, workers, and government officials.

While there is limited empirical literature on pay setting in collective bargaining agreements in Africa, some studies have investigated this issue while all suggesting that the collective bargaining approach has positive effects on wages and working conditions. Abor and Quartey (2010) examined the factors that influence collective bargaining in the manufacturing sector in Ghana, with a focus on the labour market environment. The study argued that this environment plays a critical role in shaping the collective bargaining process and outcomes. A survey of 80 manufacturing firms in Ghana was conducted to gather data on their collective bargaining practices and to identify the factors that influence bargaining outcomes. The study found that the labour market environment in Ghana is characterized by low levels of unionization and weak labour regulations, which limit the bargaining power of workers. As a result, collective bargaining outcomes are often determined by the relative bargaining power of employers and workers. The results also revealed that size and ownership structure of firms have a significant impact on collective bargaining outcomes, with larger and foreign-owned firms generally having more bargaining power than smaller and domestically-owned firms.

Mazibuko and Maume's (2015) examined the role of collective bargaining in wage determination in South Africa's informal economy. The study argued that informal workers are particularly vulnerable to low wages and poor working conditions, and that collective bargaining can help to address these issues. Data was analysed from the Labour Force Survey to investigate the determinants of bargaining coverage and the effect of bargaining on wages in the informal sector. The paper finds that bargaining coverage is lower in the informal sector than in the formal sector, and that bargaining has a positive effect on wages in both sectors. As a result, the study concluded that promoting collective bargaining in the informal economy could help to improve working conditions and reduce poverty in South Africa.

Amankwah and Coulombe (2016) examined the role of trade unions in wage determination in Ghana and South Africa, two countries with different institutional contexts for collective bargaining. The study used data from the Ghana Living Standards Survey and the Quarterly Labour Force Survey in South Africa to analyse the factors that influence collective bargaining outcomes and the role of unions in wage determination. In Ghana, collective bargaining takes place at the industry level, while in South Africa it is more decentralized, with bargaining taking place at the firm level. The study finds that trade



unions have a significant impact on wage determination in both countries, with unionized workers earning higher wages than non-unionized workers: the union wage premium. However, the magnitude of that premium varies depending on the institutional context. In Ghana, the union wage premium is higher in industries with a higher degree of centralization in collective bargaining. In South Africa, the union wage premium is higher in firms with a higher union density.

In a South African study, Qwabe and Rogan (2017) examined the wage-setting process in the mining industry, which is characterized by a high degree of unionization and centralized bargaining. The study used a combination of qualitative interviews and analysis of collective bargaining agreements to explore how wages are set in the industry. The findings show that wage negotiations in the mining industry are highly centralized and are influenced by factors such as labour market conditions, commodity prices, and government policies, as well as the bargaining power of the parties, with unions able to leverage their bargaining power to secure better wages for their members, and government regulations setting minimum wage levels. In addition, Qwabe and Rogan (2019) examined the wage-setting process and collective bargaining outcomes in the South African mining industry. The authors reviewed the existing literature on the topic and identify key challenges faced by workers and trade unions in the sector.

The limited empirical studies in Africa is largely due to the lack of country-specific databases with coded information about collective agreements clauses. Most of the studies in Africa are concentrated in South Africa due to the fact that Labour Research Service (LRS) in that country gathers data about collective agreements (Besamusca and Tijdens, 2015; LRS, 2023). Having a systematic approach to collecting data on negotiated topics, particularly in African countries, offers an empirical basis. Therefore, using WageIndicator data which has been systematically coded collective bargaining agreements for over 80 countries worldwide, this paper seeks to expand the understanding of wage setting process in collective bargaining especially in Africa.

#### **4. Method of CBA database and Analysis**

##### **4.1 Data Source and Description**

Unless other studies that have analysed the content of collective bargaining agreements for developing countries with CBAs from Africa, Latin America and South East Asia (Besamusca and Tijdens, 2015), this paper will focus on the wages and wage related clauses for African collective bargaining agreements across sectors and countries. Data for the analysis is collected from the Collective Bargaining Database established by WageIndicator Foundation. Being a global, independent and non-profit organisation, Wageindicator began in 2000 with a website for inclusive salary check for working women mainly in the Netherlands. It has grown over the years and currently counts over 200 websites for 206 countries (including territories and overseas areas) worldwide. The organization collects, analyses and shares

information on actual wages, minimum wages, living wages, labour laws, gig and platform work and collective bargaining agreements with over 40 million web-visitors in 2021 (see [wageindicator.org/about](http://wageindicator.org/about)).

More specifically to Africa, the collective bargaining project began in late 2013 as part of the Development Aids Projects with social partners (trade unions, employers organisations and others) in the Global South who expressed a strong desire for their agreements to be published online as it was a more effective and economical way of communicating the results of the bargaining efforts to a wider audience (Besamusca and Tijdens, 2015). Through an agreement with social partners, the agreements are collected, coded in a custom-made data entry system (COBRA), annotated and published in the website for easy comparison across sectors, countries and regions with the help of a web tool. The code data, though found in csv format in the database is easily converted into a statistical programme (stata) for analysis. The coding exercise of the collective bargaining agreements is carried out in two parts. Part one basically contains general meta-data about the collective agreements with more specific information on duration of the agreement (start and end dates), types of agreements (national framework or transnational or inter-professional), ratification dates and parties involved, nature of the collective agreement (single or multiemployer), signatories to the agreement (trade unions, employers and/or professional associations) as well as coverage characteristics of the agreement. More specific to coverage, it covers issues related to industry, sectors as well as the number of workers and gender representation in the agreement. Part two of the coding exercise handles information related to the content of the agreements under 11 indicators of decent work follows: job titles, training, social security and pensions, employment contracts, sickness and disability, health and medical assistance, work and family balance arrangements, gender equality, working hours, wages, and conflict at work place. More specific to wages and related clauses, the coded data provide information on wage determination on individual contracts and company level, pay scales, provision on minimum wages, structural wage increases and other related bonus and compensations (seniority allowances, meal allowances, transport, hardship premium, overtime allowance, pay annual leave, on-call allowance, evening and weekend allowances among others). By February 2022, the database had over 2000 agreements from 67 countries which were coded and published in the national websites in the national language(s). In Africa, the project started in August 2013 with the first agreement coded and published in the Togo website. Currently, the database contains 424 CBAs from 20 African countries (Ceccon and Medas, 2022).

#### **4.2 The Model of Analysis**

In addition to presenting descriptive statistics to address the first research question on the additional financial benefits in the collective bargaining agreements, the study will apply both the logistic and multinomial models to investigate how the sectors of industry affect the wage settings in collective bargaining. First, the logistic model will be applied to the trigger question “Does the agreement have

clauses on wages [YES/NO]?”. Second, the multinomial logit model is applicable to the question, “Where are the wages determined [INDIVIDUAL LEVEL/COMPANY LEVEL/SECTORIAL LEVEL/ELSEWHERE]?”.

In order to identify which sectors of industry impact the wage setting in collective bargaining, a logistic model is employed since the dependent variable is binary. Following Hellberg and Syren (2019), the logistic model is specified as:

$$P_i(Y = 1) = F(Z_i) = \frac{1}{1 + e^{-(\alpha + \sum \beta_i X_i)}} \quad (1)$$

where  $P_i$  is the probability that a sector will impact on wage setting,  $\alpha$  and  $\beta_i$  are regression parameters to be estimated.  $e$  is the base of the natural logarithm and  $Z_i$  is the odds ratio of the probability. For easy interpretation of coefficients, the logistic model could be written as:

$$\left( \frac{P_i}{1 - P_i} \right) = e^{Z_i} \quad (2)$$

Taking the natural logarithm of equation (2), yields the estimable logit model:

$$\ln \left( \frac{P_i}{1 - P_i} \right) = Z_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon_i \quad (3)$$

Where  $X_1, X_2, \dots, X_n$  are the different independent variables presented in Table 1.

To further explore the relationships between wage setting levels (individual, company, sectoral and elsewhere) and sectors of industry, a multinomial logit specification (MNL) was employed since the outcome variable has more than two categories. MNL models estimate the direction and intensity of the explanatory variables on the categorical dependent variable by predicting a probability outcome associated with each category of the dependent variable (Green, 2003). Following Green (2003), the probability that  $Y = j/x$  is given as:

$$Prob(Y = j/x) = \frac{e^{\beta_j x_i}}{\sum_{j=1}^{J=3} e^{\beta_j x_i}} \quad (4)$$

In (1),  $j$  denotes the wage setting levels used for the analysis ( $J$  predicted probabilities for each observation),  $\beta$  a vector of estimation parameters and  $x_i$  are the exogenous variables for all  $Y$ . Eq. (4) holds if the error terms are independently and identically distributed as log Weibull (McFadden, 1973). Normalising on all probabilities yields a log-odds ratio, with the dependent variable expressed as the log of the odds of one alternative relative to the base category (Greene, 2003). Significance of estimators is tested with  $z$ -statistics.

Estimated coefficients measure the change in the logit for a one unit change in predictor variable while other explanatory variables are held constant. A positive estimated coefficient implies an increase in likelihood that a respondent will predict the alternative choice of wage level determination while a negative estimated coefficient indicates that there is a less likelihood of the prediction. Coefficients of

each independent variable in the models above will not represent the impact of the variable on the dependent variable in terms of magnitude or size. Thus, marginal effects are used to interpret the results of model effectively and these effects show the probabilities of occurring the dependent variable with respect to the changes in each explanatory variable. According to Long (1997), marginal effects provide a more intuitive interpretation of the impact of the independent variables on the probability of including wage clauses in the agreements. The marginal effects directly quantify the change in the predicted probability of the event for a unit change in the independent variable while holding other variables constant. More so, marginal effects allow for meaningful comparisons across different independent variables (sectors of industry) and provide a more actionable interpretation of the model by showing how changes in the independent variables affect the probability of the event of interest. This information is valuable for policy-making, decision-making, and understanding the practical significance of the variables under consideration.

## 5. Results and discussion

### 5.1 Descriptive statistics

This section provides an explanation of the descriptive statistics presented in Tables 1 and 2. The database contains 424 agreements from 20 African countries. Taking Burundi as an example from Table 1, there are a total of 19 agreements, out of which 17 have been ratified. Only 2 of these agreements were negotiated in the private sector.

**Table 2: Descriptive statistics of variables**

	Frequency	Mean	S.D.	Min	Max
<b>Dependent Variables</b>					
Wage trigger					
➤ Yes	374	0.882	0.323	0	1
➤ No	50	0.118	0.323	0	1
Level of wage determination					
➤ Individual level	190	0.636	0.482	0	1
➤ Company level	31	0.104	0.305	0	1
➤ Sectoral level	32	0.107	0.309	0	1
➤ Elsewhere ( state, regional...)	78	0.154	0.361	0	1
<b>Independent Variables</b>					
Ratified collective Bargaining	230	0.542	0.499	0	1
Private sector Bargaining	355	0.837	0.369	0	1
Single Employer Bargaining	331	0.789	0.408	0	1
English collective Bargaining	306	0.722	0.449	0	1
Manufacturing Sector	134	0.321	0.467	0	1
Agriculture and forestry sector	62	0.148	0.356	0	1
Construction sector	26	0.062	0.242	0	1
Transportation and Storage	38	0.091	0.288	0	1
Accommodation and food service	29	0.069	0.254	0	1

Financial and Insurance	37	0.089	0.284	0	1
Public Administration and defence	20	0.046	0.209	0	1
Education sector	22	0.053	0.223	0	1
Social work and other services	27	0.065	0.246	0	1

**Source:** WageIndicator Collective Agreement Database, selection of African countries (2023).

The category of single enterprise bargaining accounts for 8 agreements negotiated. In the case of Ghana, an English-speaking country unlike Burundi (which is French-speaking), there have been a total of 38 negotiated agreements, all falling under the category of single enterprise bargaining. Out of these, 33 of them were specifically negotiated in the private sector and 25 agreements have been ratified. In total, out of the 424 agreements across all countries, 230 agreements (54.2%) have been ratified, and 331 of the agreements (78.1%) fall under the category of single enterprise bargaining.

Table 2 gives a description of the dependent and independent variables used in the empirical models. The wage trigger variable captures the responses for the question of: “Does the agreement have clauses on wages?” Out of the total agreements, 374 agreement had wage clauses which gives a mean/proportion of 88.2% and a standard deviation of 0.323. Based on the WageIndicator code Book (Ceccon and Medas, 2022), wages in the agreements are determined at 5 levels: individual contracts, company level, industry/sectoral level, state or regional level and elsewhere. Due to missing observations and the low frequencies, industry/sectoral level, state or regional level and elsewhere, were combined to a category (elsewhere). As a result, 190 (74.3%) agreements provide information for wages negotiated at individual contracts, 31 agreements (7.3%) show that wages are negotiated at company levels while 78 agreements (18.4%) show that that wages are negotiated elsewhere. Furthermore, the database provides information for the "How wage increases are paid to workers?". The information shows that most of the wage increases are paid as a percentage of the regular wage (130 agreements), while only 10 agreements indicated that wage increases are paid in amounts. However, there were a lot of missing observations for this variable with only 33% of the agreements having information on how the wage increases are paid to workers.

By April 2023, 306 agreements (72.2%) from 12 countries with at least one of the official languages being English had had been coded and published in the national websites of the African countries. Except for 11 agreements published in Mozambique (Portuguese), the rest of the agreements are published in the national websites of French speaking countries. Based on the WageIndicator Code Book and following the Nomenclature of Economic Activities (NACE) coding, the agreements in the sample were negotiated across 18 distinct sectors of industry, with most agreements in the private sector, which accounts for 83.7% of agreements. Among the sectors of industry, the manufacturing sector has the highest number of agreements (134), followed by agriculture, forestry, and fishing (62), transportation, logistics and storage (38), financial and insurance (37), accommodation, hospitality,

catering, and tourism (29), social works and social services (27), extraction, mining, and quarrying and construction (26), education (22) and public administration and defence (20). For the purpose of empirical estimation (where the degrees of freedom are reduced for small observations), the paper included only sectors with 20 agreements and above.

## **5.2 Additional financial benefits in collective bargaining agreements**

To address the first research question, this section's analysis looks at what extent are financial benefits and other remunerated-related clauses included in the agreements in Africa (Table 2). First, agreements were coded for including wages and wage related clauses, as well as whether they include other financial benefits in addition to the regular wages paid to employees. Second, the additional financial benefits were coded in the agreements which include: maternity pay, disability pay, severance pay, health insurance, yearly bonus, evening premium, standby allowance, extra leave pay, overtime payment, hardship allowance, Saturday/Sunday premium, transport allowance and seniority allowance. Meal allowance was excluded due to many missing data on the agreements. However, it was difficult to determine the percentage/amount of the additional benefits since some agreements had missing observations and some of the agreements had the amounts in local currencies.

With the exception of Guinea Conakry, Lesotho and Mozambique, all agreements from other countries included clauses on maternity pay. All agreements in Sierra Leone, South Africa and Mozambique contain clauses on maternity pay, even though these countries only have a total of 15 agreements in the database. A majority of agreements from Ethiopia (90.9%), Ghana (84.2%), Kenya (84.4%), Madagascar (76.9%), Niger (57.1%), and Zambia (63.6%) contain clauses on maternity leave pay. Overall, 62.74% of the agreements contain clauses on maternity leave.

Only 44 per cent of the agreements contain clauses on health insurance premium. This low rate might be due to several reasons: First, some trade unions may prioritise other benefits, such as wage increases, over health insurance premium due to immediate economic need especially in some poor African countries, and second, lack of awareness among employees regarding the importance and benefits of health insurance especially in the agriculture, mining and construction sectors. However, all agreements from South Africa and Sierra Leone contain clauses on health insurance premiums. Clauses on sickness and disability pay are common in the agreements, being included in 66.6% of the agreements in Togo, Rwanda, and Guinea while the rest of the countries had at least 50% of the agreements have disability pay clauses.

**Table 3: Share of collective agreements that include additional financial benefits clauses per country (in percentages)**

Country	No	Maternity Pay	Disability pay	Severance Pay	Health Insurance pay	Yearly Bonus	Evening Premium	Standby or on-call Premium	Extra Leave premium	Overtime premium	Hardship premium	Sunday Premium	Transport Allowance	Seniority Allowance
Burundi	19	15.79	80	15.79	25	35.71	14.29	0	7.14	35.71	0	0	21.43	28.57
Benin	23	39.13	88.89	73.91	60.87	31.82	52.38	0	47.62	86.36	40.91	45.45	63.64	22.73
Ethiopia	66	90.91	44.44	51.52	31.91	27.78	5.41	2.7	0	54.29	2.78	16.22	29.73	0
Ghana	38	84.21	77.14	94.74	84.21	81.08	62.16	43.24	8.11	83.78	11.11	66.67	45.95	64.86
Guinea	1	0	100	100	100	100	100	0	0	100	100	100	0	100
Kenya	90	84.44	59.55	95.56	27.27	23.86	35.23	1.16	86.05	100	2.35	74.12	29.76	11.63
Lesotho	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Madagascar	13	76.92	69.23	46.15	38.46	46.15	53.85	0	38.46	76.92	7.69	53.85	30.77	53.85
Malawi	3	0	0	0	0	100	0	0	0	0	0	0	100	0
Mozambique	11	0	80	100	36.36	70	50	0	30	63.64	9.09	10	63.64	18.18
Niger	7	57.14	71.43	71.43	42.86	42.86	0	14.29	14.29	71.43	14.29	28.57	71.43	85.71
Rwanda	4	75	100	25	33.33	50	0	0	50	50	0	0	25	0
Senegal	28	21.43	80	96.43	12.5	17.86	64.29	3.57	50	82.14	14.81	48.15	21.43	77.78
Sierra Leone	2	100	50	100	100	100	100	0	100	100	100	100	50	50
South Africa	3	100	50	0	100	66.67	33.33	66.67	0	33.33	0	0	33.33	33.33
Zimbabwe	10	100	80	80	77.78	75	40	0	10	90	0	40	60	20
Togo	16	50	100	87.5	64.29	53.33	60	0	13.33	86.67	13.33	60	73.33	80
Uganda	29	37.93	78.57	44.83	50	25.93	17.86	7.14	26.92	39.29	3.57	21.43	25.93	25
Tanzania	34	44.12	66.67	67.65	57.58	38.71	35.48	9.68	70.97	70	3.23	41.94	58.06	51.61
Zambia	22	63.64	42.86	54.55	43.75	50	20	5	55	75	20	70	40	40
Total	424	62.74	66.57	67.92	44.35	39.51	36.76	7.59	43.29	76.36	9.29	47.81	39.78	34.42

**Source:** WageIndicator Collective Agreement Database (2023), selection of African countries.

Clauses on severance pay and yearly bonus are included in 67.9% and 39.5% of the agreements respectively. At least 80% of agreements Ghana, Guinea, Kenya, Senegal, Zimbabwe, and Togo have clauses on severance pay, while for yearly bonus, there are countries like Ghana, Guinea, Malawi and Sierra Leone. Only Lesotho agreements do not have clauses on severance pay and yearly bonus.

Information on clauses from the database categorize pay premiums into six types, including, evening or night work (36.7%), on-call work or standby (7.6%), extra holiday pay (43.3%), overtime (76.4%), hardship (9.3%), and Sunday work (47.8%). Additionally, there are three types of allowances for commuting (39.8%), seniority (34.4%), and meals (no observations for most countries). The most commonly mentioned premiums in the agreements are for overtime work, work on Sunday (53%), and evening/night work with the less common being hardship and standby allowance. Only Guinea and Sierra Leone guarantees a majority of these premiums and allowances even though the 2 countries have the least agreements in the database. Ghana, Kenya, Senegal, Uganda, Tanzania and Zambia (mostly English-speaking countries with the exception of Senegal) are the only countries where all the premiums and allowances are sometimes awarded. Countries like Ethiopia, Madagascar, Niger, Sierra Leone, Togo have at least 6 of the premiums awarded. Burundi, Malawi and Lesotho have the least premiums and allowances awarded in the agreements.

### **5.3 Sectoral impact and wage setting in collective agreements**

This section aims to explore the impact of sectors of industry on wage clause addition in the agreements. The impact of the sectors on wage clause additions is complex and multifaceted, and the specific circumstances of each industry and country can vary significantly. Table 4 presents the logit coefficients and marginals effects with wage clause addition as the dependent variable. Since most of the manufacturing industries in the analysis (60.9%) are in the private sector, the paper controls for multicollinearity by estimating 2 models. A recursive model (2) is estimated while excluding the private sector variable. The interpretation of the results will focus on the marginal effects.

When examining the probability of the inclusion of wage clauses in different agreements by sectors of industry, the following findings are observed in Table 4. The ratification of agreements is significantly associated with an estimated increase of approximately 0.0886 in the probability of including wage clauses. Being a single employer is associated with an estimated decrease of approximately 0.1051 in the probability of including wage clauses. In the case of language/country of publication of the agreement, English countries are associated with an estimated increase of approximately 0.1516 in the probability of including wage clauses, with private sector associated with an estimated increase of approximately 0.1148 in the probability of including wage clauses. The positive and significant marginal effects for ratified agreements, agreements from English countries, and private sector



agreements suggest that these factors are associated with an increased likelihood of including wage clauses in the agreements.

**Table 4: Probability of inclusion of wage clauses in collective bargaining agreements**

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Coefficients		Marginal effects		Marginal effects (at mean)	
CBA Ratified	0.997*** (0.380)	0.987*** (0.379)	0.0886*** (0.0336)	0.0891*** (0.034)	0.0669*** (0.0254)	0.0676*** (0.0256)
Single Employer	-1.182* (0.643)	-1.115* (0.649)	-0.1051* (0.0573)	-0.1006* (0.0586)	-0.0794* (0.041)	-0.0763* (0.0418)
English countries	1.704*** (0.599)	1.880*** (0.591)	0.1516*** (0.0529)	0.1696*** (0.053)	0.1145*** (0.0371)	0.1286*** (0.0368)
Private sector	1.291* (0.746)		0.1148* (0.0661)		0.0867* (0.0501)	
Manufacturing	0.507*** (1.086)	0.583** (1.086)	0.0451*** (0.0967)	0.0526** (0.0981)	0.0341*** (0.0727)	0.0399** (0.0741)
Agriculture	-1.426* (1.091)	-1.489* (1.089)	-0.1268* (0.097)	-0.1344* (0.0982)	-0.0957* (0.073)	-0.1019* (0.0742)
Construction	2.259** (1.145)	2.201* (1.141)	0.2009** (0.1013)	0.1986* (0.1024)	0.1517** (0.0771)	0.1506* (0.0781)
Transportation	-0.918 (1.173)	-0.952 (1.172)	-0.0817 (0.1044)	-0.0859 (0.1058)	-0.0617 (0.0785)	-0.0652 (0.0799)
Accommodation	-0.56 (1.207)	-0.636 (1.206)	-0.0498 (0.1075)	-0.0574 (0.1089)	-0.0376 (0.0808)	-0.0436 (0.0822)
Financial sector	0.263*** (1.282)	0.025*** (1.273)	0.0234*** (0.114)	0.0022*** (0.1149)	0.0176*** (0.0861)	0.0017*** (0.0871)
Public Admin	-3.474** (1.398)	-2.459* (1.267)	-0.3090** (0.124)	-0.2219* (0.1142)	-0.2333** (0.0908)	-0.1683** (0.0842)
Education sector	-2.749** (1.258)	-2.239* (1.213)	-0.2445** (0.1112)	-0.2020* (0.1093)	-0.1846** (0.0836)	-0.1532* (0.0816)
Social works	-1.112 (1.29)	-0.972 (1.285)	-0.0989 (0.1148)	-0.0877 (0.116)	-0.0747 (0.0865)	-0.0665 (0.0876)
Constant	7.403*** (1.474)	6.289*** (1.311)				
Observations	418	418	418	418	418	418

**Source:** WageIndicator Collective Agreement Database (2023), selection of African countries.

**Note:** Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Concerning the sectors of industry, the results suggest agreements in the manufacturing, mining and construction, and financial and insurance sectors are associated with estimated significant increase of approximately 0.0451, 0.2009 and 0.0234 respectively in the probability of including wage clauses. This implies that collective bargaining agreements in the manufacturing, financial and insurance, and mining and construction sectors are more likely to include provisions related to wages. Agreements in the agriculture and forestry, public administration and defence and education sectors are associated with

estimated significant decrease of approximately 0.1268, 0.3090 and 0.2445 respectively in the probability of including wage clauses. Simply put, wage clauses are less likely to be included in agreements in the public administration and defence and education sectors in most African countries since the state is mostly responsible in setting wages in these sectors. The results are not significant for the transportation, accommodation and social works sectors.

#### **5.4 Sectors of Industry and wage level determination**

To further explore examine the impact of sectors of industry on levels of wage determination, a multinomial logit model is estimated and the results (marginal effects) presented in Table 5. The estimation is only performed for agreements that have wage clauses. According to the agreements, wages can be determined in individual contracts, company level, sectoral level or elsewhere.

For the manufacturing and financial sectors, the results are significant and positive for the individual contract and company level determination of wages while statistically insignificant for the sectoral level and elsewhere. This implies that most agreements in the manufacturing sector indicated that wages are either negotiated at individual contracts or company levels. The two sectors are seen to be regulating pay-settings in the agreements. For the agricultural and forestry sector, transportation and accommodation, there are no statistical significance for the four levels of wage determination. However, the marginal effects are positive for the sectoral level wage determination.

Table 5: Multinomial logit model for levels of wage determination (marginal effects)

Variables	Model 1				Model 2			
	(1) Individual	(2) Company	(3) Sectoral	(4) Elsewhere	(5) Individual	(6) Company	(7) Sectoral	(8) Elsewhere
CBA Ratified	0.066*** (3.166)	-0.034 (2.179)	-0.015 (1.325)	-0.017 (2.450)	0.066*** (3.166)	-0.032 (5.954)	-0.013 (3.537)	-0.015 (6.216)
Single Employer	-0.019 (5.361)	0.056*** (3.555)	-0.045 (4.002)	0.009 (1.199)	-0.019 (5.361)	0.050*** (9.214)	-0.041 (11.190)	0.006 (2.551)
English countries	0.172 (9.803)	-0.134 (8.564)	-0.058 (5.206)	0.020 (2.759)	0.172 (9.803)	-0.124 (23.014)	-0.051 (13.791)	0.019 (7.871)
Private sector	0.055*** (4.119)	0.015*** (1.010)	0.008 (0.754)	0.031 (4.323)				
Manufacturing	0.031** (2.641)	0.005** (0.314)	0.020 (1.814)	0.016 (2.175)	0.031** (2.641)	0.004** (0.802)	0.018 (4.921)	0.013 (5.645)
Agriculture and forestry	-0.003 (3.322)	-0.028 (1.819)	0.013 (1.140)	0.019 (2.688)	-0.003 (3.322)	-0.030 (5.529)	0.011 (2.848)	0.016 (6.803)
Construction and mining	0.302* (10.337)	0.002* (0.463)	-0.323 (10.444)	0.019 (2.692)	0.302* (10.337)	0.002* (0.681)	-0.330 (16.304)	0.013 (5.383)
Transportation	0.156 (1.633)	0.046 (2.998)	0.016 (1.459)	-0.217 (1.235)	0.156 (1.633)	0.041 (7.893)	0.013 (3.710)	-0.206 (4.546)
Accommodation	0.028 (2.624)	-0.037 (2.374)	0.013 (1.164)	-0.004 (0.512)	0.028 (2.624)	-0.034 (6.350)	0.012 (3.208)	-0.003 (1.097)
Financial and insurance	0.016*** (2.546)	0.006* (0.410)	0.028 (2.493)	-0.006 (0.826)	0.016** (2.546)	0.011** (2.036)	0.024 (6.397)	-0.008 (3.547)
Public Admin and defence	0.823 (4.415)	-0.663 (3.758)	0.016* (1.786)	-0.176 (2.739)	0.823 (4.415)	-0.714 (1.434)	0.008* (3.213)	-0.184 (7.393)
Education	-0.019 (5.829)	-0.048 (3.047)	0.039** (3.500)	0.028* (3.864)	-0.019 (5.829)	-0.054 (10.079)	0.031** (8.349)	0.010* (4.121)
Social work and services	-0.031 (3.199)	-0.007 (0.470)	0.017 (1.486)	0.022 (3.063)	-0.031 (3.199)	-0.013 (2.496)	0.013 (3.384)	0.014 (6.150)
Observations	295	295	295	295	295	295	295	295

**Source:** WageIndicator Collective Agreement Database (2023), selection of African countries.

**Note:** Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Regarding the education, public administration and defence sectors, the results are significant and positive for sectoral level of wage determination. The results show that the wages in the education and public administration and defence sectors are mostly set by the state (sectoral level). For the other controlled variables, the probability of wages being determined at individual contracts increases by about 1.9%, 5.5% and 6.6% if the agreement is negotiated by a single employer in the private sector and has been ratified respectively. Though not significant, the results are also positive for agreements concluded in English speaking countries.

## **6. Discussion and Conclusion**

Using data for 424 agreements across 20 African countries, the study attempted to explore the content of agreements in relation to wage settings and also show the extent of additional financial benefits included in agreements. This dataset is unique in its scale, as it covers a large number of agreements across multiple countries and it is consistently coded, ensuring accuracy and comparability across agreements. The paper has demonstrated that the utilization of web-based data collection methods for gathering collective agreements yields valuable and systematic insights into the topics and wage related issues that are negotiated and agreed upon in the collective bargaining process. This approach, facilitated by the internet, has made it possible to obtain and analyze such comprehensive information, which would have otherwise been unattainable especially in Africa.

The analysis of data reveals that in more than 50% of the examined agreements, wage settings were agreed upon at the individual level. This finding highlights the significance of individual-level negotiations in determining wages. While collective bargaining is widely recognized as a crucial mechanism for wage determination (Freeman & Medoff, 1984; OECD, 2014; Ebbinghaus & Visser, 2020), the data indicate a weak bargaining position for trade unions in the African continent. The data underscores the limited influence of trade unions in shaping wage outcomes in these African countries. This could be attributed to various factors, such as low union density, legal constraints on union activities, or a lack of bargaining power vis-à-vis employers (Freeman & Medoff, 1984, OECD, 2019, ILO, 2020). The weak bargaining basis of trade unions suggests a challenging environment for collective bargaining processes and highlights the dominance of individual-level wage negotiations (Frege & Kelly, 2003; Marginson & Sisson, 2018).

It is important to note that while individual-level wage setting may provide flexibility and customization based on specific circumstances, it can also lead to disparities and unequal bargaining power between employers and employees (Eichhorst & Marx, 2011). The weak bargaining basis of trade unions in the African countries analyzed raises concerns about the ability of workers to collectively negotiate for fair wages and better working conditions (De Cuyper et al., 2018).

The findings of the study reveal that collective bargaining agreements in the manufacturing, financial and insurance, and mining and construction sectors, as well as in English-speaking countries and the private sector, are more inclined to incorporate provisions specifically related to wages. On the other hand, the education and public administration and defense sectors primarily rely on state determinations for wage setting, except in the financial and manufacturing sectors where individual contracts are more prevalent for setting wages. The findings agree with those of Nekhili et al., (2020), which examine the impact of trade unions on firms' performance in the manufacturing sector in Tunisia, focusing how agreements shaped wage-related provisions and their implications for both firms and workers in terms of performance and productivity.

The study utilized multinomial logit regression analysis to examine the factors influencing wage setting practices across various sectors. The results revealed distinct patterns in wage determination based on the sector under consideration. In sectors such as education and public administration and defense, the state plays a dominant role in setting wages, presumably reflecting centralized and standardized approaches to wage determination (OECD, 2019). In contrast, the financial and manufacturing sectors exhibited a greater prevalence of individual contracts for wage setting. This suggests that within these sectors, negotiations at the individual level play a more prominent role in determining wages. The flexibility offered by individual contracts may allow for more tailored and context-specific wage arrangements in these sectors (Andrews & Sanchez, 2011).

Regarding additional financial benefits, the study uncovered that the majority of agreements included provisions for maternity pay and yearly bonuses. This finding suggests that negotiations surrounding maternity arrangements and yearly bonuses are significant aspects of intense bargaining. It also indicates that employers have the opportunity to distinguish themselves by demonstrating good practices and policies in these areas (Lillie & Greer, 2020). Furthermore, employers who prioritize and excel in implementing comprehensive maternity arrangements showcase their commitment to promoting work-life balance and gender equality, which are topics included in the coding of the agreements, although not specifically analysed in this paper.

The study made a distinction between pay premiums, which encompassed evening or night work, on-call work or standby, extra holiday pay, overtime, hardship, and Sunday work, and allowances, including commuting, seniority, and meals (with limited observations for most countries). Among the countries analyzed, only Guinea and Sierra Leone guarantee a majority of these pay premiums and allowances, despite having the fewest agreements in the database. On the other hand, Ghana, Kenya, Senegal, Uganda, Tanzania, and Zambia, predominantly English-speaking countries, are the only ones where all the pay premiums and allowances are occasionally awarded. These findings highlight the varying levels of provision for pay premiums and allowances across different countries and underscore

the potential for employers to differentiate themselves by providing comprehensive and fair financial benefits. It suggests that certain countries, particularly those mentioned, have a greater tendency to include these premiums and allowances in their agreements, potentially reflecting the influence of specific labor market practices or regulations.

The findings highlight the diverse approaches to wage determination across sectors and shed light on the role of collective bargaining, individual contracts, and state involvement in different contexts. Understanding these variations in wage-setting practices is crucial for policymakers, employers, and employees in designing appropriate wage policies, fostering effective labor relations, and promoting fair and equitable compensation practices in different sectors and countries. The insights derived from these discussions suggest that the WageIndicator Collective Agreements Database holds potential for future research endeavors. It can serve as a valuable resource for analyzing agreements that establish both wage scales and low/minimum wages. Furthermore, it offers an opportunity to examine how wages specified in collective bargaining agreements compare to the concept of decent wages. To achieve this, a merging of data from the decent wage and collective bargaining databases would be necessary.

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