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Impacts of Direct Cash Assistance, Social Security Enrollment, and Employment Stability on the Welfare of Hand-Rolled Cigarette Workers in Central Java

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Abstract

This research investigates the relationship between Direct Cash Assistance (BLT) from the Tobacco Product Excise Profit Sharing Fund (DBHCHT), BPJS Employment, employment status, and the welfare of hand-rolled cigarette workers in Central Java, Indonesia. Given the significant shifts from manual to mechanized production in the tobacco industry, the study addresses the crucial aspect of worker welfare amidst these changes. The analysis focuses on four key areas: Pati, Kudus, Demak, and Jepara, utilizing data collected from 451 hand-rolled cigarette workers through structured interviews. The methodology involves an ordered logit regression model to evaluate how financial assistance, health and accident insurance coverage through BPJS Employment, and permanent versus contractual employment statuses impact the welfare of these workers, with welfare quantified in terms of income and asset ownership. The results indicate a positive correlation between the provision of BLT DBHCHT and improved welfare indices, highlighting the effectiveness of direct financial aid in enhancing living standards. Additionally, enrollment in BPJS Employment is significantly associated with better welfare outcomes, underscoring the importance of robust social security systems for protecting worker welfare. The study also finds that permanent employment contributes to higher welfare levels compared to contractual work, suggesting that job security plays a crucial role in promoting worker well-being. These findings underscore the necessity for targeted policy interventions aimed at improving socio-economic conditions for laborers within Indonesia's tobacco sector. They also advocate for an expanded scope of welfare indicators in future studies to include more comprehensive assessments of worker well-being, incorporating health, educational attainments, and psychosocial factors.

Keywords: welfare, tobacco workers, direct cash assistance social security, employment status, Indonesia

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1. Introduction

Based on data from the Food and Agriculture Organization of the United Nations (FAO) in 2021, Indonesia is the fourth largest tobacco-producing country after China, India, Brazil, and

Zimbabwe, with total production reaching 237 thousand metric tons (FAO, 2021). In terms of consumption, Indonesia's smoking prevalence rate occupies the highest position in the Southeast Asia region. The Global Adult Tobacco Survey (GATS) results also show that almost 34.5% of adults in Indonesia consume tobacco (CDC Foundation, 2021). This number increased from 60.3 million smokers in 2011 to 69.1 million in 2021(Ministry of Health, 2022).

The economic value of the cigarette industry in Indonesia continues to increase from year to year and is projected to reach USD 16.9 billion in 2026 (Euromonitor,2022). The tobacco processing industry will absorb 0.33 percent or 1,254,856 workers in Indonesia in 2022 (BPS, 2022). The tobacco sector also contributes more than 60% of employment and 25% of local employment in tobacco-producing areas such as Kudus, Temanggung, and Kediri(World Bank Group, 2017). In addition, the cigarette industry contributes to state revenues through excise on tobacco products. The realization of tobacco excise (CHT) revenue in Indonesia continues to increase yearly, in 2010 amounting to Rp. 63.30 trillion and an increase of IDR 198.02 in 2022. This figure is an increase of 4.9 percent compared to 2021, IDR 188.81 trillion(CNBC, 2022).

Based on the production method, cigarette production in Indonesia is divided into 2: machine-rolled kretek cigarettes (SKM) and hand-rolled kretek cigarettes (SKT). In this case, SKM production has the largest market share, namely 74.79 percent, SKT has 20.23 percent, and Machined White Cigarettes (SPM) only account for 4.90 percent. (Center for Indonesian Policy Studies, 2020). This concentration of production dominated by machines has negative implications for regions that depend on the tobacco sector as the main source of employment.

In Indonesia, cigarette factories are concentrated in certain areas such as Central Java (48.50%), East Java (27.8%), and West Nusa Tenggara (18.37%), and the rest are spread across Java, Sumatra and Sulawesi. (World Bank Group, 2017). There are 4 areas on the north coast of Central Java where most of the population works as rolling cigarette workers, namely Kudus, Pati, Jepara, and Demak. The Kudus Regency Industrial Cooperative and Small and Medium Enterprises Labor Service estimates the number of cigarette workers in Kudus to be 98 thousand, with 89 registered companies(Murianews, 2023). Meanwhile, the Pati District Manpower Office (Disnaker) records that there are 4,500 cigarette workers in Pati District, the majority of whom are women (Kusuma, 2022.).Meanwhile, in Jepara, there were 1,270 kretek cigarette workers in 2017(BPS Central Java Province, 2023). Meanwhile, in Demak Regency, the number of workers reached 77,135. Most workers in these four districts work in the hand-rolled cigarette (SKT) sector, with the majority being dominated by female workers who work as rolling workers.

Despite the large cigarette industry in Indonesia, tobacco production produces little profit for farmers, and most farmers live in poverty. Additionally, due to changes in demand and new technologies, employment in the tobacco manufacturing and cultivation sectors has declined over time(Greenhalgh et al., 2020). This decrease in the number of hand-rolled cigarette workers certainly causes problems because SKT absorbs more labor than SKM. They are coupled with the shift in the production process from hand (SKT) to machine (SKM), where the number of SKT

cigarette workers has decreased from 195,432 workers in 2010 to 140,996 workers in 2019(Eri Sutrisno et al., 2021). The decline in the number of workers in the tobacco sector is linked to several issues, including labor welfare, child labor and the lack of social security for tobacco workers (Ahsan et al., 2022).

The study of "Indonesian Tobacco Facts" shows several interesting facts about the welfare of cigarette workers. The average wages of workers under supervisors in the tobacco (cigarette) processing industry sector in 2008-2014 were lower than those in other food and beverage sectors. (IAKMI, 2020). Around 65% of kretek workers work without a written contract and have non-wage benefits, such as paid sick leave, paid holidays, and paid maternity leave (World Bank Group, 2017). The results of studies in several countries show that small-scale tobacco farming is generally not a profitable business; tobacco farmers have significant losses on household income (Sahadewo et al., 2021). One study in Malawi also found that tobacco workers face poor working conditions and have low socio-economic status, which negatively impacts their well-being (Thiruvasagam et al., 2019).

In terms of regulations and social protection, in 2021, when the Covid-19 pandemic took place, the government amended the Tobacco Product Excise Profit Sharing Fund (DBHCHT) regulations through Ministry of Finance Regulation (PMK) Number 7/PMK.07/2020. The DBHCHT program is a social assistance program allocated by the Central Government to farmers and tobacco industry workers in tobacco-producing areas. The DBH CHT allocation priority is 25% in the health sector, 50% in economic recovery and welfare and 25% in optimizing tobacco excise law enforcement. The regulations explain that DBHCHT is given to regional governments with production areas and sales of tobacco products subject to excise.

One of the Tobacco Excise Profit Sharing Funds (DBHCHT) allocations is used to provide Direct Cash Assistance (BLT). The provision of Unconditional Cash Transfers (UCT) through BLT Tobacco Excise Profit Sharing Funds (DBHCHT) can be analyzed mathematically and theoretically in an economic context focusing on utility and consumption changes. Utility is a measure of satisfaction or benefit from consuming goods or services. Positive impact on workers' well-being by meeting basic needs, increasing access to health and education services, and improving quality of life. However, these impacts may vary depending on aid size, beneficiaries' characteristics, and overall economic conditions. More effective and consistent use of DBHCHT can provide greater benefits for farmers and workers, increase their income, and, in turn, improve the welfare of tobacco sector players(Ahsan & Hadi Wiyono, 2022).

Apart from the profit-sharing program, the Indonesian government has also issued regulations to protect the welfare, safety and health of workers in the cigarette industry. Some of these regulations include Law No. 13 of 2003 concerning Employment, Law No. 40 of 2004 concerning the National Social Security System, and Law No. 24 of 2011, which includes provisions for the Social Security Administering Body. All these regulations have undergone revision with

the issuance of Law No. 11 of 2022 concerning Job Creation, an important legal basis for efforts to protect workers in the cigarette industry.

The health, work accident and pension insurance program through BPJS Employment is important for workers, including cigarette workers, because it protects against health risks and work accidents and provides certainty in retirement. However, implementing pension benefits in Indonesia has not been optimal, including different treatment between contract and permanent employees(Farza et al., 2019). Not all workers can pay BPJS Employment contributions, and not all companies facilitate this. This condition becomes a challenge for workers in obtaining full social security protection.

Apart from BLT DBHCHT and BPJS Employment, employee status as permanent rather than contract workers is important in providing job security and better worker rights. With permanent worker status, workers will feel more secure and stable. Workers don't have to worry about the future of their jobs every time a contract ends. Permanent employees also have better access to various social facilities and security, such as health insurance, pension security and employment protection.

The role of government and non-government organizations is important to improve the welfare of workers, including hand-rolled cigarette workers. Therefore, this research aims to see the correlation between the provision of BLT DBHCHT, ownership of BPJS Employment, and employment status on the welfare of hand-rolled cigarette workers in Pati, Demak, Kudus and Jepara Regencies. In this case, there has been no specific research in Indonesia that discusses the impact of BPJS employment and employment status on the welfare of cigarette workers. Measuring the welfare index is also new because several previous studies focused on worker income or productivity. It is hoped that the results of this research can significantly contribute to understanding the welfare of cigarette rolling workers in Indonesia and provide valuable input for improving regulations and worker protection in this industry.

2. Research Methods

2.1. Data Source

This research uses primary data from a survey conducted by a research team at Dian Nuswantoro University Semarang and the University of Indonesia from 2020 to 2021. The survey was conducted by conducting structured interviews with 451 hand-rolled cigarette workers in four districts, namely Pati, Kudus, Demak and Jepara, with a sample size of as many as 451 respondents. The survey location was chosen because it includes the area with the largest cigarette industries in Indonesia.

2.2. Variable Operationalization

The dependent variable used is the welfare index of hand-rolled cigarette workers, measured through 2 main indicators: the income of hand-rolled cigarette workers and asset ownership. This is a modification of the study in Bangladesh, which included indicators of income and asset ownership as components of a multidimensional welfare index(Alkire & Santos, 2013). The index calculation in this research is calculated with equal weighting, namely 50% for individual income (y) and 50% for ownership (a) with y and an on a scale of 0-1. The income index calculation is mathematically formulated through equation 1.

$$Income\ Index_{\mathrm{n}} = \frac{y_i}{Y_{max(i)}} (1)$$

y_i is the individual's income level; is the highest income level in the survey sample$Y_{max(i)}$

Regarding asset ownership indicators, this research calculates an asset ownership index on a scale of 0 to 1 based on the sum of house, gold, motorbike and car ownership components with a weight of 0.25 each. Using equal weights, the asset ownership index can provide a relative picture of the level of asset ownership among respondents in this study. Although it does not capture each component's ownership value, this index still provides relevant information for analyzing and understanding asset ownership patterns in the population studied.

Mathematically, the calculation of the welfare index in this research is formulated in equation 2.

$$Welfare\ Index_{\mathrm{n}} = 50\%\ (y) + 50\%\ (a)\ (2)$$

After obtaining the welfare index figures, the analysis in this study formed levels in the welfare index of cigarette workers, which were divided into 5 based on quintiles (5) of the welfare index: not prosperous (quintile below 20%); less prosperous (Quintile 20%—40 %); moderately prosperous (Quintile 40%—60%); prosperous (Quintile 60%—80%); and very prosperous (Quintile above 80%).

The main independent variables in this study are grouped into regulatory and work protection characteristics, which include employment status, BLT DBHCHT allocation, and ownership of BPJS Employment. This research also uses control variables, which are grouped into three categories: individual characteristics (age, gender, education level), regional characteristics (district of work), and labor market characteristics (working hours and length of work). The grouping of these variables results from the author's modifications, while the constituent variables are adopted from several previous studies and relevant theories.

2.3. Analysis Method

The order logit regression model uses a maximum likelihood estimation approach to estimate the regression coefficient that best fits the data. By using ordered logit regression, we

can understand how independent variables influence the level of welfare in an ordered or tiered manner. The influence of regulations and labor protection on the welfare index of hand-rolled cigarette workers is estimated using an econometric model with logit regression in equation 3, which is presented as follows:

$$ln\,(P(Y \leq j \mid X)) = a_j + \beta_1 employee\ status + \beta_2 bpjs\_employee + \beta_3 blt\_dbhcht + \beta_4 age + \beta_5 sex + \beta_6\, education + \beta_7 marriage\_status + \beta_7\, region + \beta_7\, duration\_work + \beta_7\, working\_hours \quad (3)$$

The econometric model in equation 3 has a dependent variable, the ln of the Welfare Index. Then, independent variables consist of employment status categorized as "permanent" and "contract," BPJS Employment ownership categorized as "yes" and "no," and receipt of BLT DBHCHT categorized as "yes" and "no." Control variables include age and gender, represented as a dummy variable, level of education, marital status, work location, length of employment, and working hours.

3. Results and Discussion

This chapter includes the results of descriptive and inferential data analysis. Descriptive analysis is presented as tabulations and graphs to provide a general overview of the observed independent and dependent variables. Meanwhile, inferential analysis is presented to determine how the independent variable correlates with the dependent variable.

3.1. Descriptive Analysis

A statistical summary of the research variables is presented in Table 1, which describes the proportions and percentages of each variable classification. Based on Table 1, it can be seen that the welfare index for hand-rolled cigarette workers is divided into 5 levels, with the lowest welfare index value being categorized as number 1 and the highest as number 5. Of the 451 respondents, the majority were in the lowest welfare index category or 1, with 121 workers or 26.83 % of data. For the highest category, namely category 5, which represents the highest 20% percentage, only 83 workers own it, or around 18.40% of all respondents. The result indicates that the majority of hand-rolled cigarette workers still do not have good welfare in terms of income or non-income.

Table 1. Distribution of Respondents According to Labor Regulation and Protection Characteristics, Individuals, Regions, and Labor Markets

Variable Classification	Amount	N(%)
Dependent Variable		
Cigarette Workers' Welfare Index		
1 (Not prosperous)	121	26.83
2 (Less prosperous)	68	15.08
3 (Quite prosperous)	85	18.85
4 (Prosperous)	94	20.84
5 (Very prosperous)	83	18.40
Independent Variable		

Variable Classification	Amount	N(%)
Characteristics of Labor Regulation and Protection		
DBHCHT Direct Cash Assistance		
Yes	361	80.04
No	90	19.96
BPJS Employment		
Yes	82	18.22
No	368	81.78
Employee Status		
Permanent employee	401	88.91
Contract employees	50	11.09
Individual Characteristics		
Gender		
Man	4	0.89
Woman	447	99.11
Education		
Didn't go to school/didn't finish elementary school	24	5.32
elementary school	201	44.57
Junior High School	141	31.26
Senior High School	84	18.63
D3	1	0.22
Marital status		
Not married yet	37	8.2
Married	389	86.25
Widow/widower	25	5.54
Age		
18-25	47	10.42
26-35	59	13.08
36-45	213	47.23
46-55	117	25.94
>55	15	3.33
Regional Characteristics		
Location		
Kudus	150	33.26
Pati	99	21.95
Jepara	101	22.39
Demak	101	22.39
Labor Market Characteristics		
Working hours		
< 7 hours	21	4.66
7-8 hours	153	33.92
> 8 hours	277	61.42
Length of work		
< 6 years	115	25.50
6-10 years	17	3.77
> 10 years	319	70.73
Total	451	100.00

Source: processed data

Furthermore, the independent variables in this study are divided into 4 characteristics; the first is regulation and labor protection. Regulatory factors in this research were observed by allocating DBHCHT funds as BLT. About 80% of workers have

received BLT funds from excise taxes. In other words, the BLT allocation could be more optimal because 20% of workers still need to receive BLT from excise funds.

This research also investigates the extent to which hand-rolling workers understand excise duty on tobacco through Table 2. Workers' knowledge of excise duty and DBHCHT is quite good, including 94.9% of workers know that each cigarette is subject to excise duty; 84.7% of workers know that DBHCHT is used for community welfare; 87.6% of workers already know that most the DBHCHT is used for the welfare of hand-rolled workers; and 86.5% of workers are aware that they have the right to receive BLT. However, data shows that more than 10% of hand-rolling workers have no or minimal knowledge about Direct Cash Assistance (BLT) from tobacco excise. In addition, knowledge about the various uses of DBHCHT still needs to be improved. For example, only 30.6% of workers know that excise funds are used to construct public facilities. Knowledge about the rights of cigarette factory workers to obtain business capital from DBHCHT is also only owned by around 37.5% of workers. Another less common knowledge is that DBHCHT can be used for training activities, which is only known by around 26.6% of workers. This is important because training can help them improve their skills and welfare and does not only depend on one sector, namely hand-rolling work.

Table 2. Knowledge about Excise

Knowledge of Excise	Yes		No	
	f	%	f	%
Each cigarette is subject to excise duty	428	94.9	23	5.1
Part of DBHCHT is used for community welfare	382	84.7	69	15.3
Funds from cigarette excise are used for public health development	138	30.6	313	69.4
Most of the DBHCHT is used for the welfare of cigarette industry workers	395	87.6	56	12.4
Workers are entitled to receive BLT from the DBHCHT	390	86.5	61	13.5
DBHCHT for training activities for cigarette workers	120	26.6	331	73.4
Cigarette factory workers are entitled to business capital assistance from DBHCHT	169	37.5	282	62.5

Source: processed data

Regarding social protection, this research highlights cigarette workers' employment status and BPJS Employment ownership. Employee status is categorized as a contract and remains important in measuring the income and rights that workers will have. Data in Table 1 shows that 89% of workers have been categorized as permanent employees. Then, if you look at the data in the graph in Figure 1, permanent workers have a higher welfare index than contract workers. 35.78% of contract workers are in the lowest welfare index category or 1, while only 23.98% of permanent workers are. This data confirms that permanent workers are likely to obtain a higher welfare level than contract workers. Apart from that, there is a linear line with a positive slope that increases with the increase in the welfare index, meaning a positive relationship exists between permanent employee status and a person's level of welfare.

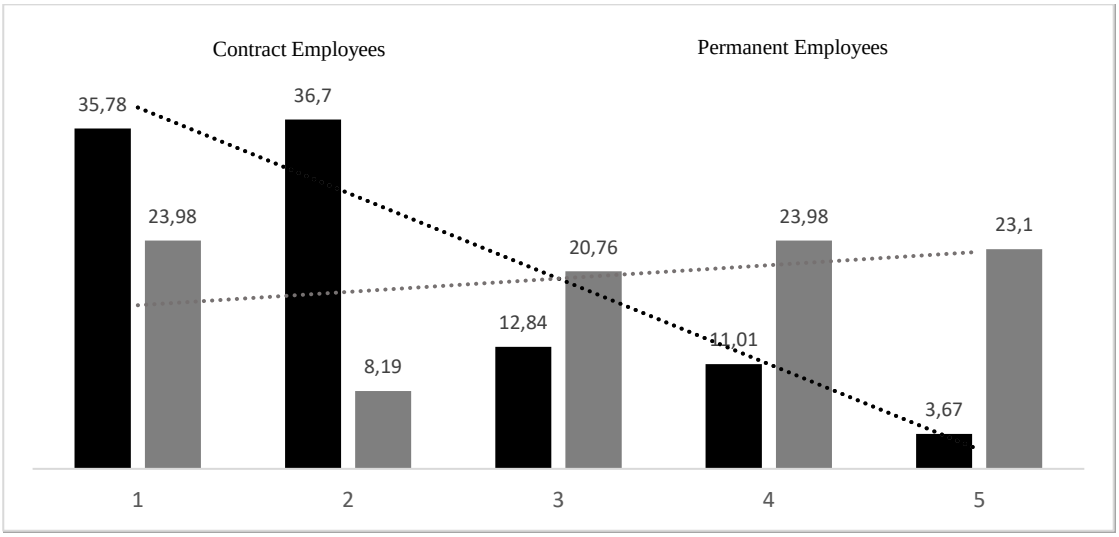

Figure 1. Percentage of Cigarette Workers' Welfare Index Based on Employee Status
Source: processed data

This research also highlights the ownership of BPJS Employment by cigarette workers. Table 1 shows that around 81.78% of hand-rolled workers do not have BPJS Employment as a form of social protection at work. This reflects the low reach of social protection for cigarette workers. On the other hand, Graph on Figure 2 shows that workers with BPJS Employment have a higher welfare index than employees without BPJS Employment. This can be seen in the percentage of employees with BPJS Employment, which have the lowest index of 1 and the highest index of 5. The percentage of workers with BPJS Employment with the lowest welfare index is only 26.63%, while workers without BPJS Employment are higher, namely 28.05%. Then, the percentage of workers with BPJS Employment with the highest welfare index, or 5, is also greater than that of non-BPJS Employment, namely 20.11% compared to 10.98%. Apart from that, the linear line in grey also shows an increasing direction along with the increase in the employee welfare index, meaning that there is a positive relationship between the status of permanent employees and the level of welfare.

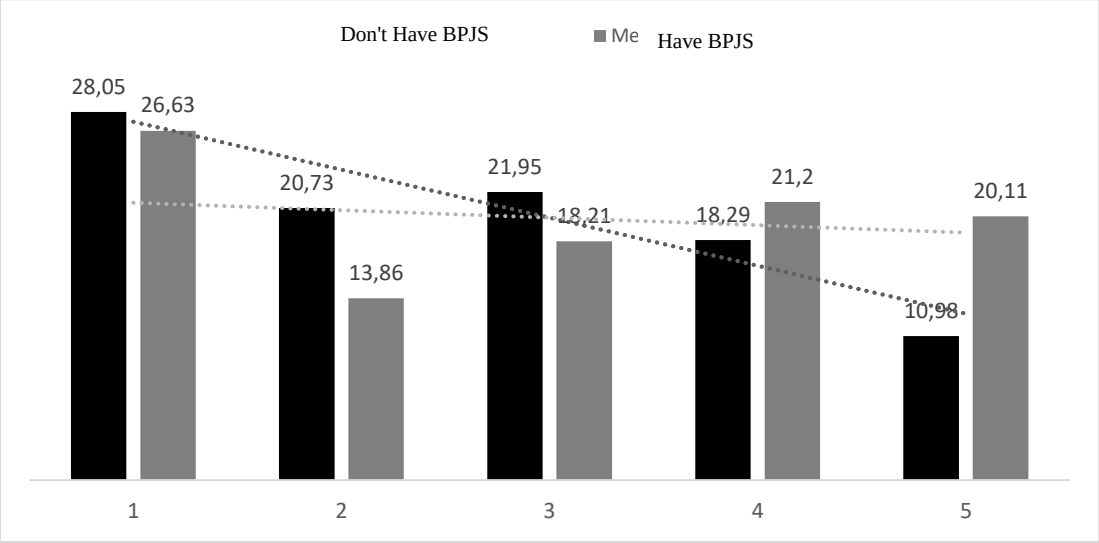

Figure 2. Percentage of Cigarette Workers' Welfare Index Based on BPJS Employment Ownership
Source: processed data

Second, the distribution of respondents based on individual characteristics is dominated by women, with a ratio of 99.11% being women. This indicates that hand-rolling workers in the cigarette sector absorb the workforce, the majority of whom are women. Meanwhile, at the education level, the highest percentage of respondents were elementary school (SD) graduates, with a figure of 44%, followed by junior high school graduates, with 31%, and high school graduates, with 18%. Workers in this labor-intensive sector need higher education because they require special skills and expertise. Regarding marital status, it is dominated by married respondents, with a percentage of 86.25%. Workers in the hand-rolling sector, which female workers dominate, have a dual role: working in the domestic sector as housekeepers and in the public sector as workers to help support the family economy. In terms of age, respondents in this study ranged in age from 18-70 years, which have been categorized into 4 groups to make it easier to analyze descriptively. In this case, most cigarette workers are adults, namely 36 to 45 years old. Meanwhile, for the elderly group over 55 years, it will decrease further because work in this sector requires high productivity.

Furthermore, regarding regional characteristics, Table 1 shows that the respondents in this study came from four districts: Kudus, Pati, Demak, and Jepara. The largest number of respondents in each district came from Kudus, namely 150 workers. This is because Kudus is one of the centres of the cigarette industry in Indonesia, so more samples were taken. Several leading cigarette factories, such as PT. Djarum, PT. Gudang Garam, and PT. Sampoerna, based in Kudus.

Lastly, Labor Market characteristics are based on the variables of how long they have worked and working hours. The data is categorized into 3 categories for working hours of less than 7 hours, meaning "below normal", 7-8 hours in the "normal" category, and more than 8 hours

"above normal". Based on the data presented in Table 1, it is known that 61.42% of workers have working hours above normal hours. This means that many workers still do not receive their rights even though this is regulated by law. Meanwhile, for work experience, more than 70% of them have worked in the sector for more than 10 years.

3.2. Inferential Analysis

After descriptive analysis, this section describes the regression analysis results, which are presented in Table 3.

Table 3. Order Logit Regression Results

Independent Variable	Odds Ratio	St. Err.
Characteristics of Labor Regulation and Protection		
blt_dbhcht		
1: Yes	8,838***	2,962
BPJS of Employment		
1: Yes	2,158***	0.589
employee_status		
1: Permanent	1,799*	0.435
Individual Characteristics		
age	0.964**	0.015
gender		
1: Female	0.058**	0.072
education		
1: Elementary	1,384	0.591
2:Junior High School	1,166	0.525
3: Senior High school	2,421*	1,296
4: D3	1,500	0.001
marriage_status		
1: Get married	2,358**	1,009
2: Widow/Widower	2,620	1,548
Regional Characteristics		
regions		
2: Demak	1,058	0.341
3: Pati	0.618	0.213
4: Kudus	2,977***	0.972
Labor Market Characteristics		
working_hours		
2: 7-8 years	0.984	0.508
3 : >8 years	2,380***	0.73

duration_work		
2: 6-10 years	0.926	0.364
3 : >10 years	6,639***	4,793
Constant cut1 (not prosperous)	0.101	1,677
Constant cut2 (less prosperous)	0.232	1,676
Constant cut3 (quite prosperous)	0.645	1,676
Constant cut4 (prosperous)	2.6221	1,676

****p<.01, **p<.05, *p<.1*

Source: Data processed

Based on the coefficient estimation results in Table 3, it can be seen that almost all independent variables significantly influence the welfare of hand-rolled cigarette workers with alpha levels of p<.01, p<.05, and p<.1. In this case, the alpha level with p<.01 is still used. It is still widely accepted in scientific research as a reliable standard for statistical confidence. Using alpha 0.1 in statistical analysis gives researchers greater freedom in interpreting the significance of the independent variable on the dependent variable, even with a 10% risk of making a type I error.

Providing direct cash assistance (BLT) from the Tobacco Production Profit Sharing Fund (DBHCHT) positively correlates with the welfare index at a significance level of 99%. This can be seen from the findings in Table 3, where workers who receive BLT from DBHCHT tend to have a "very prosperous" welfare index (than the category below) to be 8.838 times greater than workers who do not receive BLT from DBHCHT. The welfare index of workers who received BLT was 0.09922, greater than that of workers who did not receive BLT. Providing BLT is beneficial for the survival of people experiencing poverty, especially in meeting daily needs, which can ultimately improve welfare(Selviana, 2016). However, giving BLT can also cause people to become dependent on the government(Selviana, 2016). Apart from that, some research shows that the implementation of BLT experiences many obstacles, such as inaccurate recipient data, lack of transparency of information related to BLT, and the absence of clear monitoring mechanisms.(Selviana, 2016; Yunita & Agustang, 2022).

In the BPJS Employment variable, BPJS Employment ownership is positively correlated with the welfare index at a significance level of 99%. This means that workers with BPJS Employment tend to have a "very prosperous" welfare index (than the categories below) 2.158 times greater than workers who do not have BPJS Employment. In this case, the Employment Law has mandated that workers have social security protection, including BPJS Employment insurance. Apart from that, Law Number 24 of 2011 concerning the Social Security Administering Body (BPJS) also confirms that every employer must register its workers as BPJS participants, both BPJS Employment and BPJS Health. However, in implementing this program, there are still obstacles, which include a need for more cooperation between the Employment Social Security Administration (BPJS) and informal sector workers, a lack of socialization, and difficulty tracing the existence of independent workers.(Adillah & Anik, 2015). Besides that, The BPJS law also

needs to provide clear provisions regarding who is responsible for providing administrative sanctions to employers who do not register their workers, thereby causing legal uncertainty and reducing the effectiveness of BPJS employment.(Yuliastuti & Syarif, 2022).From the workforce side, problems often encountered are the payment of contributions and the amount of compensation payments that do not correspond to the level of work accidents(Adillah & Anik, 2015).

The BPJS Law states that every employer must register its workers as BPJS participants, both BPJS Employment and BPJS Health. According to the BPJS Law, if an employer does not register its workers as BPJS participants, they will be given administrative sanctions for not providing certain public services. Even though the BPJS Law has determined sanctions for employers who do not register their workers as BPJS participants, the BPJS Law does not regulate who must provide sanctions and what the procedures for administering these sanctions are. Because administrative sanctions in the form of not providing certain public services can only be given by the government that provides those public services, this sanction should be given by the Regional Government for public services provided by the Regional Government by regulating it in a PERDA. If these sanctions are not regulated, there will be no legal certainty.

Regarding worker protection, countries such as Belgium, Finland and France have implemented social protection schemes through tax credits for low-income workers. (OECD, 2005). Although the benefits are relatively small, the scheme effectively encourages worker independence. This shows that social protection is also implemented in other countries to protect workers, although through different mechanisms such as tax credits. In other words, the findings in this research highlight the importance of social protection in improving workers' welfare, both through BPJS Employment in Indonesia and similar schemes in other countries.

Then, the employment status variable is positively correlated with the welfare index at a significance level of 90%. This means that workers with "permanent employee" status tend to have a welfare index of "very prosperous" (than the lower categories) 1.799 times greater than workers with contract status. This is similar to studies at PT. Tirtamas Lestari Temanggung found that the contract work system would reduce worker welfare(Sari, 2014). The contract work system reduces the level of worker welfare through several things, including a) there is no long-term job certainty, especially when the contract period expires; b) inadequate work protection; c) no compensation if laid off; as well as limitations in the benefits received(Sari, 2014). Precarious workers also tend to have lower income levels and a higher probability of unemployment (Comi et al., 2009). In order to overcome the problems above, the government is trying to provide certainty to workers through the Job Creation Law, which requires employers to provide compensation money to workers whose work relationships are based on PKWT or outsourcing end(Nasution et al., 2022).

Regarding individual and household characteristics, it can be seen from Table 2 that the variables of age, gender, educational background, and marital status of workers are significantly

correlated with the welfare of hand-rolled cigarette workers. Based on the odds ratio coefficient in Table 3, it can be seen that the age of hand-rolled cigarette workers is negatively correlated with the welfare index of cigarette workers. This means older workers tend to have a "very prosperous" welfare index (than the categories below) 0.036 times smaller than younger workers. In other words, the older the worker, the lower the level of welfare. The higher the age, the lower the level of productivity of cigarette workers (Prayudo et al., 2020). Then, a decrease in productivity levels will lead to a decrease in income levels so that their welfare decreases(Prayudo et al., 2020). However, the correlation between age and welfare of hand-rolled cigarette workers in this study was not statistically significant.

Based on gender, most cigarette workers in this study were women. However, the regression estimation results show that the female gender negatively correlates with worker welfare at the 95% significance level. This means that female workers tend to have a "very prosperous" welfare index (compared to the categories below) that is 0.942 times smaller than male workers. This is similar to empirical studies in China, which found that women's welfare levels in China are relatively lower because men's hourly income levels are higher than women's in both formal and informal jobs. (Gifu et al., 2009). Besides that, Sohn (2015)states that women earn wages around 30% lower than men, so their level of welfare also tends to be lower(Sohn, 2015).

Regarding education, hand-rolling cigarette workers with a high school/equivalent education is positively correlated with the welfare index at a significance level of 90%. This means that workers with a high school/equivalent educational background tend to have a "very prosperous" welfare index (than the lower category), 2.421 times greater than workers with a lower educational background.

Based on marital status, hand-rolled cigarette workers who are married have a positive correlation with the welfare index at a significance level of 95%. In other words, workers with a married status tend to have a "very prosperous" welfare index (than the lower category) 2.358 times greater than workers who are not married. Married workers tend to have more social resources, including support from partners, family and the wider social environment. This social support can provide emotional stability and practical assistance in overcoming daily life challenges and improving well-being. On the other hand, the findings in this research are in contrast to a study in DKI Jakarta, where married workers tend to have a greater expenditure burden, which can lead to a decrease in their level of welfare. (Beti et al., 2017).

Based on regional characteristics, workers in the Jepara area have a lower welfare level than workers in the Kudus area at a significance level of 99%. In this case, workers who live in the Kudus area tend to have a "very prosperous" welfare index (compared to the categories below) of 2.977 times greater than those in the Jepara area. This shows that factors influence the level of welfare in the Kudus area, but they cannot be identified in this analysis. Factors that influence the level of prosperity between these regions include differences in economic structure, access to employment opportunities, wage levels, quality of infrastructure, social and cultural values, social

support, and different public policies in each region. Therefore, it is important to conduct further research to understand the factors contributing to differences in welfare levels between these regions.

The length of work variable is positively correlated with worker welfare. In this case, workers who have worked for more than 10 years tend to have a "very prosperous" welfare index (than the categories below) of 6.639 times greater than workers who have worked for less time. This is similar to the findings in Bondowoso, where work experience has a positive and significant effect on the income of female cigarette industry workers(Noviyanto, A., 2020). Finally, working hours positively correlate with the welfare of hand-rolled cigarette industry workers. This means that workers who work more than 8 hours tend to have a "very prosperous" welfare index (than the category below) of 2.38 times greater than workers who allocate less time to work. This finding is similar to research in Kediri, which found that working hours have a positive and significant effect on the level of welfare of workers in the roof tile industry(Widiana & Wenagama, 2019). Working hours affect workers' welfare by increasing workers' income(Widiana & Wenagama, 2019).

4. Conclusion and Recommendations

The research results found that regulatory and work protection factors represented through receipt of BLT from DBHCHT, ownership of BPJS Employment, and employee status as permanent workers in Pati, Kudus, Demak and Jepara Regencies were positively related to the tendency to have a higher welfare index. Then other factors such as high school education level, marital status, working location in Kudus, working hours, and length of work are also positively related to the level of welfare of hand-rolled cigarette workers. On the other hand, the factors of age and female gender are negatively correlated with the welfare of hand-rolled cigarette workers. Policy and regulatory recommendations can be implemented, namely optimizing the allocation of Tobacco Excise Revenue Sharing Funds (DBHCHT) for the Direct Cash Assistance (BLT) program, ensuring adequate social protection through access to BPJS Health and BPJS Employment, special programs for female workers, and providing status employment as a permanent employee. Implementation of this policy needs to involve governments, companies, trade unions, and health experts to ensure its effectiveness and ongoing monitoring.

On the other hand, this research has several limitations, namely, focusing on measuring welfare only on income and asset ownership, not including intermediary variables, and using cross-section data without paying attention to changes over time. Future research can expand variables, use complex analytical models, and conduct more detailed inferential analyses for deeper understanding.

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