Youth Underemployment in Sulawesi
Setengah Penganggur Usia Muda di Sulawesi

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Abstrak

Setengah penganggur memberikan gambaran ketidaksempurnaan pasar tenaga kerja yang menyebabkan kapasitas tenaga kerja tidak dapat dimanfaatkan secara optimal. Banyak penelitian menyebutkan bahwa pekerja usia muda sangat rentan menjadi setengah penganggur. Pemuda adalah penggerak pembangunan perekonomian suatu negara, maka permasalahan ketenagakerjaan yang melekat pada pemuda harus dapat diatasi dengan baik. Penelitian ini bertujuan untuk menganalisis faktor-faktor yang mempengaruhi setengah penganggur usia muda di Pulau Sulawesi. Data yang digunakan dalam penelitian ini adalah data SAKERNAS Agustus 2019. Metode analisis yang digunakan adalah analisis regresi logistic multinomial, dimana variabel bebas dari penelitian ini adalah variabel yang terkait dengan karakteristik individu dan pekerjaan dari penduduk usia muda. Penelitian ini menunjukkan bahwa terdapat perbedaan faktor yang mempengaruhi setengah penganggur laki-laki dan perempuan usia muda terutama pada pendidikan dan lapangan usaha. Kelemahan dari penelitian ini adalah belum tersedianya data mikro yang dapat menggambarkan kondisi pasar tenaga kerja.

Kata kunci: setengah penganggur usia muda; regresi logistik multinomial; bekerja penuh waktu

Abstract

Underemployment provides a picture of the imperfection of the labor market which causes the capacity of the workforce to be unable to be optimally utilized. Many studies state that young workers are very vulnerable to being underemployed. Youth is the driving force of a country's economic development, so the labor problems inherent in youth must be resolved properly. This study aims to analyze the factors affecting underemployment among young people in Sulawesi Island. The data used in this research is SAKERNAS August 2019 data. The method of analysis used is multinomial logistic regression analysis, where the independent variables of this study are variables related to the individual and occupational characteristics of the young population. This research shows that there are differences in the factors that affect underemployment of young men and women, especially in education and business. The weakness of this research is the unavailability of micro data that can describe labor market conditions.

Keywords : youth underemployment; multinomial logistic regression; fulltime worker

1. INTRODUCTION

The Open Unemployment Rate (TPT) can describe the extent to which human capital resources are used in the labor market. However, TPT alone is not sufficient to provide information in understanding the imbalance between the demand and supply of labor. An indicator that can reflect this imbalance is underemployment, because it can show inefficiencies in the labor market (Bell and Blanchflower, 2013). According to Kupets (2015) The low productivity of underemployment causes the production level is not able to attain maximum point which can lead to a low level of Gross Domestic Product (GDP). In the end it will have a bad impact on the economy as a whole. In addition, being underemployed has a negative impact on the welfare level of workers (Heyes and Tomlinson, 2020). Another important aspect of studying underemployment is to enrich understanding of the ability of the labor market to provide adequate employment opportunities (ILO, 2014). Underemployment has been widely associated with lower life satisfaction and triggering depression (Allan et al., 2020). Research conclusion from Beukes et al. (2017) indicates that although underemployed people receive income, they have the same social and economic conditions as unemployment.

The labor market balance is achieved when the unemployment rate decreases as a result of maximum employment, that is, they have worked properly and full time. The current problem is that the declining unemployment rate is not matched by a significant increase in public welfare. This is the impact of the still high underemployment rate. Based on BPS data, the underemployment rate in Indonesia was recorded at 6.43 percent in 2019, higher than the unemployment rate of 5.28 percent. Underemployment in Sulawesi Island alone for 14.7 percent of the total underemployment in Indonesia and 38.3 percent of them are youth workers. This shows that the balance of the labor market has not been achieved on the island of Sulawesi.

From an economic approach, workers are considered underemployed if their work does not maximize the person's abilities. This means that they fall below certain standards on various labor issues, such as working hours and the suitability of their types of work to their education (Heyes and Tomlinson, 2020). The two main theories explaining underemployment. First, Human Capital Theory Becker (1962) specifying the characteristics of human capital, namely education and skills, can explain certain labor market outcomes. This theory does not directly explain skills-related underemployment but explains the contribution of skills-related underemployment to market failure as it stands in stark contrast to ideal labor market outcomes (Beukes et al., 2017). Second, job search theory (Blau, 1992), argues that the number of hours worked per week determines a person's job search due to the maximum return on human capital investment already made when a worker is already employed full-time, assuming decent work. In particular, the likelihood of job search increases when a person works part-time, works irregular and less than normal working hours, or is engaged in non-contract work.

Many previous studies have shown that young workers are most vulnerable to being underemployed (Hernández, 2018; Kamerāde & Richardson, 2018; Slack et al., 2019). They are less experienced in job search, less strong in wage negotiations, less financially secure and more susceptible to psychological stress (Reynolds, 2012). Therefore, youth workers are more likely to accept low paying jobs that are not suitable for their skills which leads to low job satisfaction. Factors beyond the

inexperience of young workers in the labor market that can exacerbate underemployment are demographic and occupational characteristics.

Demographic characteristics that determine workers to be underemployed include gender, marital status, education, age and place of residence. Young women may be more vulnerable to being underemployed (Acosta-Ballesteros et al., 2017; Petreski et al., 2020), due to their increased inactivity in the labor market, driven by factors such as child and elderly care, domestic work, conservative cultural beliefs and so on (Mojsoska-blazevski, 2017). The marital status of young workers gives different results for men and women, Taşçi (2005) research found that married workers appear to reduce the likelihood of being underemployed for women, but not for men. Furthermore, underemployment is more likely among those with low levels of education (Hernández, 2018; Slack et al., 2019; Stéphane, 2019). However, research conculusion from Petreski et al. (2020) shows that young workers with low and secondary education are less likely to be underemployed than youth with higher education. The school participation of a worker does not have a significant effect on the underemployment but significantly reduces the chances of being employed (Acosta-Ballesteros et al., 2017). The area of residence also affects underemployment, workers who live in rural areas have a greater chance of being underemployed (Slack et al., 2019; Stéphane, 2019). A different result is shown by Kler et al., (2017) where workers who live in the area have a smaller chance of being underemployed.

Based on the characteristics of the job, half of the unemployed happened to those whose work was related to the service (Acosta-Ballesteros et al., 2017; Petreski et al., 2019; Valletta et al., 2018). However, research conclusion from Salin and Nätti (2019) indicates a different result where workers in the service business sector are less likely to be underemployed. Informal workers have a greater chance of being underemployed (Kamerāde and Richardson, 2018). Workers with longer experience reduce their chances of being underemployed (Beukes et al., 2017; Kanwal et al., 2020). Workers with one year or less of work in their current job are more likely to be underemployed (Acosta-Ballesteros et al., 2017).

The youth underemployment issue is an important phenomenon from a policy perspective around the world. One of the main targets of the SDGs employment policy and sustainable development goals, namelysupport productive activities, creation of decent work and equal pay for work of equal value for youth. The role of youth as agents of change can be optimized as a development subject in the implementation of the 2030 agenda. However, the youth employment issue is a challenge for policy makers, planners and labor economists. The current youth employment condition has a number of socio-economic, political and moral consequences. High unemployment and youth unemployment reflect the loss of the nation's most productive assets, with serious implications for the formation of human capital and ultimately the country's economic growth potential.

The study purpose is to analyze the factors affecting young underemployment in Sulawesi Island. This study provides a novelty in the literature on underemployment, as it addresses the problem of underemployment at a young age by examining the relative contribution of each of the determinants to the underemployment gap between male and female workers. The econometric methodology used in this study is a multinomial logistic model. This allowed us to take into account how the demographics and occupation of young workers could influence their

chances of becoming underemployed. We use The National Labour Force Survey data for August 2019. Furthermore, this article is organized into 4 parts, the first part contains an introduction, the second part contains an explanation of the research method used, the third section contains the results and discussion and closes with a conclusion in the fourth section.

2. RESEARCH METHODOLOGY

The data used in this study is The National Labour Force Survey in August 2019 data. The purpose of this survey is to collect employment data information regarding the individual characteristics of each household member aged 5 years and over. However, the publications presented are limited to information on residents aged 15 years and over. The purpose of utilizing The National Labour Force Survey in August 2019 data in this study is to analyze the factors that affect the young underemployed people of the workforce. In accordance with Act No. 40/2009 which states that youth are those aged 16-30 years. So the observation unit is the working population aged 16-30 years in Sulawesi island.

In total, the August 2019 Sakernas sample consisted of 30,000 Census Blocks and was carried out in all provinces in Indonesia. Samples were randomly selected using the Two stage-One Phase Stratified Sampling (Household Rotation Panel) sampling method. This survey succeeded in recording 115,552 working residents aged 16-30 years. The observations in this study are focused in Sulawesi island. Of the total sample, there are 15,835 observations in Sulawesi island.

The criteria for underemployment in this study were obtained from data on working residents who have working hours less than 35 hours per week and meet the following criteria: (1) looking for or preparing a business; or (2) is not looking for or preparing a business for one reason that work has been accepted but has not started or already has a business but has not started or is discouraged; or (3) willing to accept when there is a job offer (BPS, 2019).

The econometric model for this study is multinomial logistic regression. This model is considered suitable for research because the dependent variable has three response categories, namely: underemployed, part-time and full-time workers. The approach to multinomial data is to reference one response category and then compute log-odds for all other categories relative to the reference. In line with this and also for the reason that the majority of the workforce wants to be adequately employed, the full-time worker response category was chosen as a reference. The log-odds are then made into a linear function of the independent variable in the form $f(k,i)$ to predict the probability that observation i has k outcome, which is generally expressed as:

$$f(k,i) = \beta_{0,k} + \beta_{1,k}x_{1,1} + \beta_{2,k}x_{2,1} + \cdots + \beta_{M,k}x_{M,i} \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots(1)$$

Where: $\beta_{M,k}$ is the regression coefficient associated with the *M*-th independent variable and the *k*-th result. Regression coefficients and independent variables are usually grouped into vectors of size *M + 1*, so that the function can be simplified:

$$f(k,i) = \beta_k . x_i \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(2)$$

Where β_k is the set of regression coefficients associated with the result k, and x_i (row vector) is the set of independent variables associated with

observation *i*. This study considers the following independent variables: gender, school participation, education, marital status, area of residence, business field, type of work, sector of work and work experience. Relative risk ratios (RRRs) were then determined for all independent variables for each category of independent variables. RRR, the exponential beta coefficient, represents the change in the chance of being in the dependent variable category versus the comparison category associated with a one-unit change in the independent variable. Mathematically, the RRR is represented as:

$$Pr(y_i = j) = \frac{\exp(x_i\beta_j)}{1+\sum_{j=1}^{j} \exp(x_i\beta_j)}$$ ....(3)

where for individual *i*, y_i is the observed result and x_i is the vector of the independent variable. The standard interpretation of the RRR is that for a unit change in the independent variable, the resulting RRR relative to the reference group is expected to change by the respective parameter estimation factors, provided the variables in the model are held constant. For the category of 'full-time employment' as a reference, interpretation is carried out to determine the factors that influence the condition of young workers.

3. RESULTS AND DISCUSSION

Youth undremployment in Sulawesi are dominated by men. Figure 1 shows that the highest percentage of unemployed men is in West Sulawesi Province, while the highest percentage of unemployed women is in Southeast Sulawesi Province. North Sulawesi Province is able to absorb young workers to become full-time workers, the highest among other provinces in Sulawesi Island. This indicates that the labor market conditions in North Sulawesi Province are more efficient than other provinces.
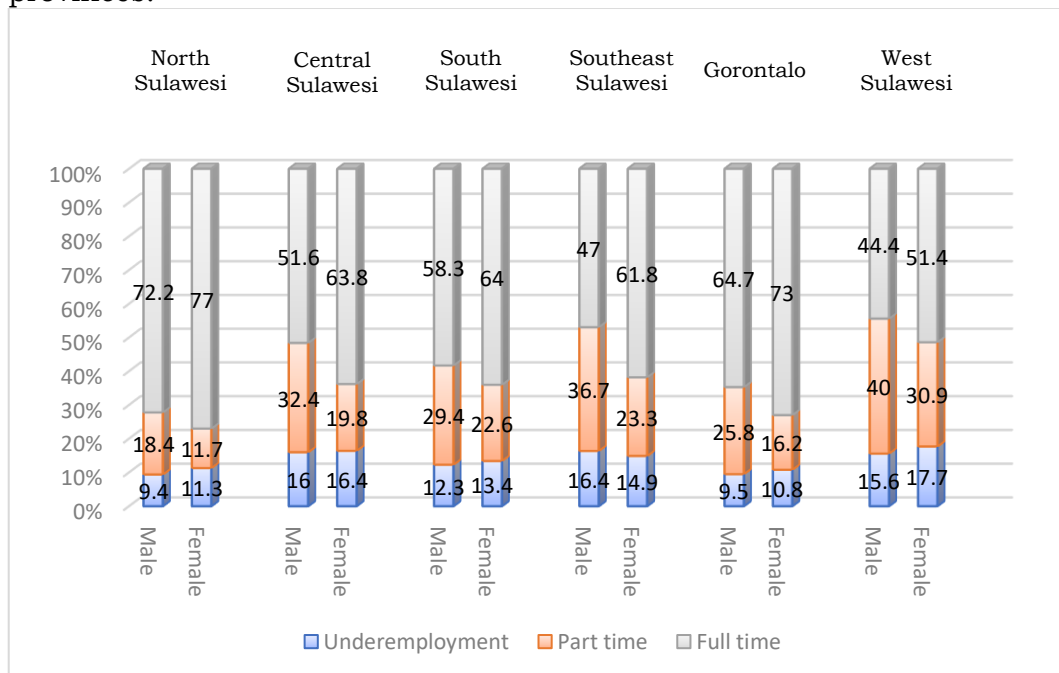

Figure 1. Underemployment, Part Time and Full Time Youth in Sulawesi Island

Table 1 shows the percentage of underemployment of all youth workers on the Sulawesi island. When viewed from gender, the percentage of

underemployment males and females at a young age shows an insignificant difference, where half the unemployed males have a higher percentage. Based on their marital status, the percentage of young unemployed people who are not married or divorced is greater than those who are currently married. Meanwhile, for those who work part time there is almost no significant difference between the two statuses.

Table 1. Youth Underemployment by Demographic and Occupational Characteristics

Characteristics	Under-employment	Part Time	Full Time
Gender			
Male	1,424 (14.0%)	2,109 (20.7%)	6,643 (65.3%)
Female	756 (13.4%)	1,726 (30.5%)	3,177 (56.1%)
School Status			
Student	120 (8.9%)	888 (65.9%)	340 (25.2%)
Not Student	2,060 (14.2%)	2,947 (20.3%)	9,480 (65.4%)
Education Level			
Basic	888 (13.4%)	1,998 (30.1%)	3,750 (56.5%)
Middle	982 (15.3%)	1,318 (20.5%)	4,114 (64.1%)
Diploma I/II/III	53 (8.8%)	101 (16.7%)	451 (74.5%)
University	257 (11.8%)	418 (19.2%)	1,505 (69.0%)
Marital Status			
Single	1,475 (15.9%)	2,288 (24.6%)	5,520 (59.5%)
Married	705 (10.8%)	1,547 (23.6%)	4,300 (65.6%)
Residence			
Rural	1,753 (16.2%)	2,997 (27.7%)	6,064 (56.1%)
Urban	427 (8.5%)	838 (16.7%)	3,756 (74.8%)
Jobs			
Agriculture	1,113 (21.9%)	1,706 (33.6%)	2,267 (44.6%)
Manufacture	50 (8.0%)	90 (14.5%)	482 (77.5%)
Construction	99 (8.5%)	118 (10.1%)	954 (81.5%)
Trade	254 (9.1%)	610 (21.8%)	1,933 (69.1%)
Transportation	85 (11.3%)	108 (14.3%)	560 (74.4%)
Akomodation	48 (7.4%)	133 (20.6%)	465 (72.0%)
Information and comunication	3 (2.4%)	19 (15.4%)	101 (82.1%)
Finance and real estate	114 (7.0%)	258 (15.9%)	1,246 (77.0%)
Goverment Administration	148 (16.5%)	316 (35.3%)	431 (48.2%)
Education and Health	110 (11.1%)	207 (21.0%)	670 (67.9%)
Type of work			
Manager dan professional	225 (10.9%)	494 (23.9%)	1,347 (65.2%)
Adminitrative staff	78 (6.2%)	195 (15.4%)	993 (78.4%)
Service and trade worker	295 (8.9%)	739 (22.4%)	2,263 (68.6%)
Agricultural worer			
Production worker and	875 (22.7%)	1,376 (35.6%)	1,612 (41.7%)
operators	707 (13.2%)	1,031 (19.3%)	3,605 (67.5%)
Job Status			
Informal	1,636 (19.8%)	2,717 (33.0%)	3,892 (47.2%)
Formal	544 (7.2%)	1,118 (14.7%)	5,928 (78.1%)
Experience			
0-12 months	691 (15.8%)	804 (18.4%)	2,877 (65.8%)
More than a year	1,489 (13.0%)	3,031 (26.4%)	6,943 (60.6%)

Source: BPS 2019, processed

There are 65.9 percent of young workers who are still attending school as part-time workers. Meanwhile, the majority of young workers who are no longer in school have worked full time, but there are still 14.2 percent of young workers who are underemployed. Most of the half of unemployed

youth in Sulawesi have secondary education, while the majority of part-time workers are young workers who have a basic education certificate. It is interesting that workers who have a diploma are much less likely to be underemployed compared to those with a degree.

Half of the unemployed youth are mostly in rural areas, it can be seen that the percentage is almost double that of those living in urban areas. Likewise, part-time workers in rural areas are higher than in urban areas. The agricultural business sector absorbs the largest number of young workers in Sulawesi, 21.9 percent of whom are underemployed. The second largest percentage of underemployed people is in the government administration business sector (16.5 percent). Meanwhile, the business sector with the lowest percentage of unemployed people is information and communication (2.4 percent).

As many as 52 percent of young workers on the island of Sulawesi work in the informal sector. Research Kamerāde and Richardson (2018) shows that underemployment in the informal sector is higher than in the formal sector. The same thing is found here, there are 19.8 percent or nearly a fifth of young workers in the informal sector are underemployed. In contrast, only 7 percent of formal workers are underemployed. The majority of youth workers in Sulawesi have more than 1 year of work experience. Among them, there are still 13 percent of workers who are partially unemployed. However, the percentage of underemployment is higher among those who work for less than 1 year.

Inference analysis conclusion in this study can be seen in table 2. The RRR value shows that school participation can only show a significant effect on young men only. Young men who attend school have a higher chance of being underemployed than those who do not go to school (RRR = 1.29). A boy with school status also has a higher chance of becoming a part-time worker than a woman (RRR = 8.95).

Subsequent findings indicate that a person's education level shows quite varied results. In the male underemployed group, the level of education has not been able to illustrate that higher education will be able to reduce a person's chances of being partially unemployed. This is different from research Petreski et al. (2020) which shows that the higher a person's education, the less likely he is to be underemployed. Meanwhile, in the underemployed women group, the chances of someone with a secondary education have the highest chance of being underemployed. In contrast to a person's chances of becoming a part-time worker, male part-time workers are not influenced by their level of education, while women who have basic education have the highest chance of becoming part-time workers (RRR = 1.90). One of the problems that often arise is that some jobs require certain skills or skills. So it is important to reconsider adding to the curriculum regarding skills related to work at the secondary school level. In addition, counseling conducted in schools also needs to add counseling sessions about careers. As well as the need for more investment in the formal sector so that it can absorb more workers so as to reduce the level of underemployment on the island of Sulawesi.

A person's marital status greatly affects his chances of being underemployed and part-time worker. The clear differences that appear in the group of female part-time workers, those who are not married and divorced actually reduce their chances of becoming part-time workers. This indicates that a woman who is married and works less than normal working hours is more voluntary, because of the responsibility of taking care of her household.

The area of residence also shows the influence on a person's chances of being underemployed and part-time worker. In all groups, those who live in rural areas are more likely to be underemployed and part-time workers. This indicates that the labor market imbalance in rural areas is greater than in urban areas. This also clarifies the fact that employment opportunities in urban areas are greater than in rural areas.

Table 2. Relative Risk Ratio (RRR) of Multinomial Logistic Regression for Underemployment, Part Time and Full Time (reference)

Independent Variables	Underemployment		Part Time	
	Male	Female	Male	Female
School Status				
Student	1.29*	0.99	8.95***	5.72***
Not Student (reference)				
Education Level				
Basic	0.60***	1.11	1.21	1.90***
Middle	0.87	1.63***	0.99	1.52***
Diploma I/II/III	0.76	0.91	0.69	1.00
University (reference)				
Marital Status				
Single	2.09***	1.84***	1.56***	0.79***
Married (reference)				
Residence				
Rural	1.60***	1.68***	1.82***	1.52***
Urban (reference)				
Jobs				
Agriculture	0.49***	0.99	0.39***	0.76
Manufacture	0.38***	0.71	0.35***	0.71
Construction	0.24***	0.73	0.22***	0.35*
Trade	0.42***	0.28***	0.42***	0.39***
Transportation	0.34***	0.38	0.34***	0.32**
Akomodation	0.36***	0.28***	0.30***	0.46***
Information and comunication	0.09**	0.13***	0.43**	0.42*
Finance and real estate	0.72	0.88	0.59***	1.24
Goverment Administration	1.48	3.64***	1.59**	3.42***
Education and Health (reference)				
Type of work				
Manager dan professional	0.54***	0.96	0.99	1.20
Adminitrative staff	0.47***	0.61*	0.89	0.72
Service and trade worker	0.63***	0.78	1.04	0.71*
Agricultural worer	1.25	1.08	1.46***	1.46**
Production worker and operators (reference)				
Job Status				
Informal	4.45***	7.61***	2.79***	5.62***
Formal (reference)				
Experience				
0-12 months	1.20***	1.24**	0.69***	0.81***
More than a year (reference)				
N	10,176	5,659	10,176	5,659
Log likelihood	-7667.57	1797.37	-7667.57	1797.37
Pseudo-R2	0.14	0.17	0.14	0.17

Note: ***p<0.01, **p<0.05, *p<0.10
Source: BPS 2019, processed

This study uses the education and health business fields as reference categories, as an illustration of jobs that require special specialization. Based on research (Acosta-Ballesteros et al., 2017) those who work in jobs

that require special specialization have a greater chance of being underemployed. Similar results can be seen in the male underemployed group, the chances of a man being underemployment are smaller in business fields other than education and health. Meanwhile, in other groups, those who work in the government administration sector are more likely to be underemployed and part-time workers. The type of work a person does also affects their chances of being underemployed. According to research (Cam, 2012), someone who works as a production force and operator is more likely to be underemployed. The same thing can be seen with the male underemployed group. On the other hand, for half the unemployed women, the type of work has not been able to show this relationship. Meanwhile, in the group of part-time workers, it appears that those who work as service and trade workers, the decision to work under normal working hours is more voluntary.

Not only the field of business and the type of work, a person's job status (formal and informal sectors) also affects their chances of being underemployed. It appears that they work in the informal sector with a high chance of working less than normal working hours, either part time or underemployed. Someone's experience at work is often used as a prerequisite for labor recruitment in a company. Workers with less than 1 year of work experience are likely to be underemployed, both men and women. In fact, less than 1 year of experience actually lowers one's chances of becoming part-time.

4. CLOSING

Demographic characteristics that affect the chances of a man on the island of Sulawesi becoming underemployed are school participation, marital status and area of residence. A young man who is still in school, status is not married or not married, and lives in rural areas has a greater chance of being partially unemployed. Those who work in the informal sector and work as production workers and operators also have a high chance of being underemployed. Not only that, the lack of experience also increases a man's chances of becoming underemployed. Meanwhile, for women, the chances of women becoming underemployed are very much influenced by their marital status, where those who are not married or widowed have a high chance of being partially unemployed. This means that women who are married prefer to spend their time taking care of the household rather than working (Mojsoska-blazevski, 2017). The results of our study have not been able to see the effect of women's type of work on their chances of being underemployed, but we find that women who work in the informal sector and have less than 1 year of work experience have a high chance of being underemployed.

This research conclusion will be better if the analysis was carried out by taking into account labor market conditions. This research is limited due to the unavailability of micro data that can describe labor market conditions such as the individual hourly wage rate and the size of the company where they work. In addition, the use of better analytical methods in future studies is also expected to get better results.

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