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## **Quality of Working Life of Palm Tappers in Eastern Indonesia**

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### **Abstract**

Palm tappers are workers who spend a lot of time with their work. The conditions of work and the working environment greatly affect their working life. So far attention and assessment of the quality of work life palm tappers still very limited. This study to determine the palm tappers's QWL in eastern Indonesia. 15 palm tappers selected as the subject of the study by proportional stratified random sampling technique. The main research instrument was a questionnaire of QWL has tested its validity. Analysis of the data quality of working life is a descriptive. The results of study showed (1) the QWL questionnaire was valid and reliable to measure the QWL of palm tappers; (2) quality of work life of palm tappers are at medium levels. The study recommended that ergonomic intervention is necessary to improve the QWL of palm tappers in eastern Indonesia.

**Keywords:** quality of working life; palm tappers; eastern Indonesia.

### **1. Introduction**

Palm tappers role in Rotenese society in eastern Indonesia has been well-known for a long time.

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They were massive workers collect the sap from hard to reach places become available that can be utilized to meet their needs as a source of income, food and social and cultural fulfillment. It has been known that palm tappers are tenacious worker, dare to risk, never give up, have a spirit of sacrifice and great affection in their family [1]. These values are inherent in their behaviour that influenced the existence and quality of their daily working lives.

Nowadays, the biggest challenge in maintaining the existence and role as palm tapper mainly Rotenese palm tappers who live in Kupang City East Nusa Tenggara Province, eastern Indonesia is facing the impact of globalization which has brought rapid changes in people's daily lives. People are increasingly pragmatic in looking at tapping activity only from the economic aspect, so that this activity loss of the meaning of social and cultural values. The focus of approaching to improve the welfare palm tapper was more oriented towards palm commodities [2-4] rather than human aspect as commodity producers [5].

On the other hand, the public is increasingly easy to gain access to employment, so that the younger generation in particular tend to choose jobs easier, with a low physical workload, and not at risk, rather than choosing to continue the legacy of their parents work as palm tappers. If this condition is not anticipated today which can change the perception of both all older and younger tappers to their main job and work environment. Changing in their perceptions can affect their quality of work life [6, 7] as one important dimension of quality of life [8]. It is well known that quality of work life (QWL) was an important approach to save human and environmental values which have been ignored due to technological advancement of the economic growth and productivity [9]. So far the research on the QWL of palm tappers very limited so there is only a few scientific information available on it. Similarly, instruments for measuring the QWL life palm tappers who have the characteristics and demands of specific job is not yet available. This study aimed to get a scientific information on palm tappers's QWL. It can be used as initial information for the design of improvements in working conditions of palm tapper ergonomically because the most important outcome of total ergonomics approach is QWL [10, 11]

## **2. Materials and Method**

This research was conducted in Kupang City, East Nusa Tenggara Province, eastern Indonesia. The population of the study is the palm tappers from Rote ethnic, who live in Kupang City, East Nusa Tenggara Province, eastern Indonesia. Fifteen palm tappers as participants were selected using proportional stratified random sampling technique. The research consists of two phases, i.e. phase of design and validation questionnaire QWL and phase of primary data collection in the field. Validation of a questionnaire carried out systematically consisted of (1) design of the dimensions, indicators and the item in questions, was developed by some previous literatures, (2) review the content of question nearby qualified persons, (3) the instrument was pretested in the field using small group of different palm tappers. This pretesting was done to ensure the individuals could follow the instructions associated with the format and to identify items that were poorly written or ambiguous. (4) the items that were selected, then were tested statistically to determine validity and reliability of the instrument [12, 13] using SPSS version 22 for Windows. Respondents were asked to indicate their agreement or disagreement about each item with anchors ranging from strongly disagree (1) to strongly agree (10). The use of the scale meant more choice to get a more precise answer reflects the levels of perceived suitability or unsuitability of the

subject as well as the reverse to avoid central tendency effects. The second phase was collected data i.e. the subject characteristics and their QWL. Normal percentage and score analysis were used in data analysis.

### 3. Results

#### 3.1 The validity and reliability of the QWL questionnaire

Quality of working life questionnaire was firstly used to measure the QWL in the palm tappers. This questionnaire was developed by some previous workers [8, 14-20]. These workers were not focus on the WQL of palms tappers and thus it was designed on QWL' palm tappers with mainly consider their job characteristics and work organizations. The results of the statistical analysis showed that 21 out of 35 items were valid and the rest were not valid. Validity and reliability QWL questionnaire are presented in Tables 1 and 2.

**Table 1:** The validity test of QWL questionnaire

item	r	p	item	r	p
item 1	0.781	0.008*	item 19	-0.316	0.373
item 2	0.399	0.253	item 20	0.141	0.697
item 3	0.892	0.001*	item 21	0.672	0.033*
item 4	0.345	0.329	item 22	0.902	0.000*
item 5	0.707	0.022*	item 23	0.805	0.005*
item 6	-0.154	0.672	item 24	0.197	0.585
item 7	0.864	0.001*	item 25	0.925	0.000*
item 8	0.055	0.880	item 26	0.808	0.005*
item 9	0.917	0.000*	item 27	0.907	0.000*
item 10	0.744	0.014*	item 28	0.779	0.008*
item 11	0.808	0.005*	item 29	-0.118	0.745
item 12	-0.284	0.427	item 30	0.709	0.022*
item 13	-0.157	0.665	item 31	0.730	0.016*
item 14	0.692	0.027*	item 32	0.544	0.104
item 15	0.709	0.022*	item 33	-0.081	0.824
item 16	0.163	0.652	item 34	0.711	0.021*
item 17	0.895	0.000*	item 35	-0.042	0.908
item 18	0.892	0.001*			

Note: \* Indicates statistically valid.

#### 3.2 Characteristic of Subjects

Fifteen healthy palm tappers participated in the study (male; average age:  $43.06 \pm 8.24$  years; average weight:  $50.18 \pm 4.57$  kg; average height:  $159.4 \pm 5.2$  cm). All participants signed informed consent before joining this study. The physical examination showed that they were not any physical disturbance/injury so they can be used

as research subject. The subjects have experiences as palm tappers  $21.18 \pm 8.44$  years. A total of 66.67% of them learned to tap firstly from their parents, and the rest taught by them selves. They were at the primary education level.

**Table 2:** The Reliability test of QWL questionnaire

Reliability Statistics	
Cronbach's Alpha	N of Items
.976	21

### 3.3 Quality of work life of palm tappers

Score QWL of palm tappers are presented in Table 3. The results of this study found that the QWL palm tappers' score reached 53.46 % of the standard score with indicated at medium level.

**Table 3:** Quality of working life of palm tapper.

variable	level	Standard score	% score
QWL	112.27	210	53.46

Scores achievement the QWL is influenced by the score of the indicator constituent achievement.

The distribution of achievement score indicators constituent are presented in Table 4 .

**Table 4:** Indicators score of quality of working life

Indicators	Score	Standard score	% score
Comfort and safety of tool and work station	42.47	70	60.67
income	8.80	20	44.00
Participation	5.93	20	29.65
Work load	17.20	30	57.33
Working condition	30.40	50	60.80
Working time	7.47	20	37.35

Data on Table 4 indicated that the working condition indicator provide the highest contributed to the achievement QWL score (60.80%) while the participation indicator over lowest contributed (29.65%).

#### 4. Discussion

The QWL is measured as the subjective perception of the work and the working environment in total [21, 22]. As a person's perception of the work can affect quality of life in working organization [20]. If the perception of palm tappers in their work is positive so the QWL is better. In contrast, their perception is negative when the QWL is poorer [8, 23,24].

The analysis showed that the totalscore of QWLof palm tappers achieved 112.27 or 53.46% from standard score of 210. It means that 53.46% of animportant need in the work reached the expectations of the palm tappers and the remaining 46.54% was not yet achieved. In the other hand, the score of quality of working life is still in the medium level. If the total score is averaged then, its value is in the range of 5-6 scale. Verbally, the range of values gives meaning that palm tappers perception of their work is positive. This study is in accordance with[18]; [25] who suggested that the QWLrelated with regard to how the working environment and the job to be able fulfill the important needs of the person's life expectancy. The more important needs is achieved means that the QWL is higher, however the results of this study showed the score of QWL is medium level (112.27). The previous studies have showed that The achievement of the QWL will influence at performance improvement[7, 26] and life statisfication[27-29].

The total score of palm tappers'QWL is affected by the achievement scores of each indicators constituent as is shown in Table 4. The results showed that the indicator of comfort and safety equipment and work stations has reached 61.17% from the standard score (70%). This score indicated that the need for comfort and safety equipment used primarily belt which serves to carry the load, "haik" (as container made by palm leaves made to collect the sap) and the footing dimension of ladder(range, deep and wide rungs) has just reached 61.17% of the palm tappers expectations. They still feel the belt used to carry the burden of giving excessive load on the lower back muscles, causing excessive pain during and after work. Footing of the ladder have not yet ergonomically designedso it produce rising compressive force on leg and knee of palm tappers when they were climbed palm trees.The consequently they were suffered musculoskeletal disorders than any other type of injury or illness[30]. The condition footing surface (i.e width and depth)at ladder is not appropriate with foot dimension and consequently they usually easily slip when the surface conditions was wet. This condition affected their perception as reported by[31] and [24].[16] also explained that health and safety poor associated with low quality of working life.Therefore, the aspects of comfort and safety equipment and work stations still need to be improved.

Indicator of income reached 45.91% of the standard score (Table 4). This score indicated that the perception of the income derived commensurate with the energy released and can meet the needs of a new life at 45.91% of the expectations of palm tappers, while the remaining 54.09% has not met their expectations. Economicly, income is one of the important indicator that affected the QWL of employees [14, 17, 18, 23, 32]. This results recommended the necessary efforts to increase productivity and incomes of palm tappers.

The results also showed that indicator of participation in problem solving for 29.65% of the standard score. This meant that the participation of the palm tappers to be involved in solving problems related to the continuity of

their working life has reached 30.45% of their expectations. However, remaining 70.35% do not meet their expectations. This is consistent with findings in the field that the palm tappers rarely actively involved in improving their working condition as suggested by [33], who stated that employee participation is one of strategies to improve QWL. It has been also reported that employee participation is very important to solve problem in work organisation so the interventions of problem-solving can soundly be humane and sustainable [10, 33].

In this study also found that workload indicator reached 17.20 or 57.33% of the standard score (30). This means that palm tappers perception on the workload is an excessive workload (42.67%). In general, workload of employees are not in accordance with the working capacity caused fatigue, musculoskeletal disorders, injuries and decreased work productivity [34, 35]. Therefore, decreasing of excessive workload through ergonomic interventions need to be done immediately so that the negative perception of palm tappers is diminished.

Moreover, indicator of working condition reached 30.40 or 60.80% of the standard score (50). This means the need for a work atmosphere of palm tappers with supports their activities such as doing work well in meaning of being happy, motivation, excitement and passion of work and unsaturation reached 60.80% of their expectations. It has been reported pleasant working atmosphere indicated that workers interested and happy in the job and this can affect the improvement of the quality of working life significantly [6, 11]. However, the remaining 39.20% working atmosphere that has not met their desire outcome. [36] reported that not pleasant working atmosphere can cause behavioral changes such as day dreaming, looking limp and lackluster called as boredom and loss of morale. These conditions prove as a symptom of the declining QWL. The results of this study indicated that the necessary constructive efforts to improve the working atmosphere is closer to desire outcome of palm tappers.

The results also showed that the working time indicator reached 7.47 or 37.35% of the standard score (Table. 4). This score indicated that the hope of palm tappers to spend time in completing their work more quickly reached 37.35%. Meanwhile, the rest has not met their expectations. Our observation showed that the palm tappers spent working hours around 14-16 hours every day to tap and process the sap, while the remaining time is used to perform other activities that are still associated with the main activity and resting time. Therefore, palm tappers rarely follow other activities such as social, family and religious activities. [6] reported that the involvement of workers in activities outside work activities are very important in the local community. They also said that give life to others may provide meaning in the form of joy/pleasure in their life and this will improve the quality of life. Adverse effects of long hours get increasing effects on their stress levels; more likely to impact negatively on a worker's health and well-being, and affecting interaction with friends and family [16, 37, 38]. Therefore, it is necessary to redesign the organization of work so that eaves droppers can have enough spare time to participate in other activities that could give more meaning to themselves and others.

## **5. Conclusions**

- a. The questionnaire of QWL are valid and reliable as instruments to measure the QWL palm tappers.
- b. Quality of work life palm tappers are in the medium level (53.46%). The achievement of the QWL is

determined by performance indicators, comfort and safety tools and work stations, income, participation in solving problems, workload, working conditions and working hours.

## **6. Recommendation**

It is necessary to improve working conditions of palm tappers of Rotenese palm tappers who live in Kupang City East Nusa Tenggara Province, eastern Indonesia in order to improve the QWL through ergonomics intervention by taking into account related to their local wisdom as well as socio-cultural aspects.

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