

**Labor Use and Management in Vietnamese Craft Villages:
A Case Study in Tu Son Town, Bac Ninh Province**Nguyen Thi Hai Ninh¹, Philippe Lebailly²¹Lecturer, Faculty of Economics and Rural Development, Vietnam National University of Agriculture²Professor, Department of Economics and Rural Development, University of Liege, BelgiumReceived: 4 May 2017; Revised: 30 May 2017; Accepted: 1 June 2017

Abstract: The findings of the research on 150 laborers in three craft villages show that 41.33 percent of labor are concentrated in the age group of 30-45, of these laborers men is accounted for over 57 percent, and only 26 percent are skilled labor. Most of the laborers are working in noisy and unsafe conditions, and less than 30% of them are equipped with labor protection equipment. Moreover, the prevailing salaries of laborers are from 3 to 5 million VND per month whereas the rate of labor contracted is very low (the highest is about 23% at Da Hoi), that makes labourers are less satisfied with work. In order to determine factors effecting laborer's satisfaction with work, the authors use Exploratory Factor Analysis and the results show that Cronbach Alfa coefficient of each group is more than 0.6. That indicates the use of 30 observation variations belonging to 5 factors in the study is suitable. Additionally, logistic model reports that working conditions, income, welfare policies and gender have a statistically significant effect on job satisfaction of labourers. When the score of the importance of working condition increases 1 point, the probability of workers satisfy with their works increases 1.307 time. When the score of importance of income increases 1 point, the probability of satisfaction increases 1.494 time. When the score of importance of treatment policy increases 1 point, the probability of satisfaction increases 1.329 time. Therefore craft villages need to improve these factors in order to improve the efficiency of labour.

Keywords: Craft villages, Labour Use, Efficiency of Labour, Exploratory Factor Analysis, Management

INTRODUCTION

Beside the development of model industrial zones, there are still 62 craft villages in Bac Ninh province. These villages contribute considerably to economic development and create jobs for about 75,000 permanent workers and 10,000 seasonal ones [1]. Among areas having craft villages, Tu Son is typical for its diversity of crafts such as woodworking, textile, and steel and for its contribution to 79% of total local industrial production value [2].

Even though Tu Son plays an important role in economic growth and job creating, its craft villages are facing the risk of lacking skilled and long-term working employees because most of producers have very small working areas and not enough personnel protection equipment (PPE) provided to workers. Besides, because of the characteristics of handicrafts 70-80% of the production process requires workers to work manually in hard condition but they do not

[DOI:10.24214/ARJBM/4/4/5463](https://doi.org/10.24214/ARJBM/4/4/5463)**Research Article**

receive enough treatments (such as allowances for poisonous condition, for injury) and training to improve skills and to avoid accident [2]. This fact makes workers less satisfied with their works and then working efficiency reduced.

Labor use efficiency, in narrow meaning, is resulted by models and policies of labor administration and using. In wider meaning, labor use efficiency is achieved through the satisfaction of workers to their works by using right person for right job, guarantying their health, safety and their career [3]. Therefore, to efficiently administrate and use labors, operations in craft villages need to increase the satisfaction of workers in order to promote their abilities and keep them working for long-term.

This article is to analyze actual situation of labor use and management and factors impacting on satisfaction of workers with their works in craft villages in Tu Son town, and then to propose some solutions to improve labor use efficiency for stable development of craft villages in the studied area.

RESEARCH METHODOLOGY

Selection of studied area

According to 2016 statistical data, in Tu Son town there are 22 craft villages producing in 3 main fields: steel, wood carving and textile [2]. Thus, the authors selected 3 villages typical for 3 above main fields to study: Da Hoi (steel production village), Huong Mac (wood carving village) and Hoi Quan (textile village).

Data collection

Primary data were gathered from 3 villages by interviewing operation owners and workers with the questionnaires edited for each particular object. Information of labor use situation was collected through 150 people working in the operations (60 people in Huong Mac, 60 people in Da Hoi and 30 people in Hoi Quan).

The questionnaire for labourers was designed with both open and close questions. The close questions use 5-level likert scale to collect the workers' evaluations about the importance of factors affecting to their satisfaction with their works: (1) absolutely not important; (2) unimportant; (3) normal; (4) important; (5) very important [4].

Data analysis

Besides using economic statistical methods such as description statistics and comparative statistics to present general situation of labor use and management, to analyze the data the authors applied 2 quantitative methods including EFA analysis and logistic regression.

EFA analysis: is the common name of a group of procedures to reduce and recapitulate data. In researches, large amount of variations can be collected and normally they have relationship to each other. So that, variation quantity need be reduced to a number that researchers can use [5]. This study used 30 observation variations and 5 independent variations including working condition, income, treatment policy, relationship with operation owner and opportunity of

DOI:10.24214/ARJBM/4/4/5463

Research Article

long-term working to analyze the impact of these 5 variations to satisfaction level of workers with their works. Thus, EFA analysis assists the authors to obtain suitable data by grouping variations having relationship among 30 observation ones and eliminating variations having no or less relationship.

Logistic regression model: is used for quantifying influence level of working condition, income, treatment policy, relationship with operation owner and opportunity of long-term working on probability of satisfaction or dissatisfaction of workers with their works. The model includes 8 variations: $\text{Log} [P/(1-P)] = \beta_0 + \beta_1X_1 + \beta_2X_2 + \dots + \beta_8X_8$

Where: dependent variation is 1 if a worker satisfies with his work and if 0 if he dissatisfies and wants to move to another job. The $\text{Log} P/(1-P)$ describes the ratio of probabilities of a worker either satisfies or dissatisfies with his work. The independent variations X_1 to X_5 represent 5 above-mentioned factors. The variations X_6 , X_7 , X_8 represent personal characteristics of workers such as gender, age and skill level.

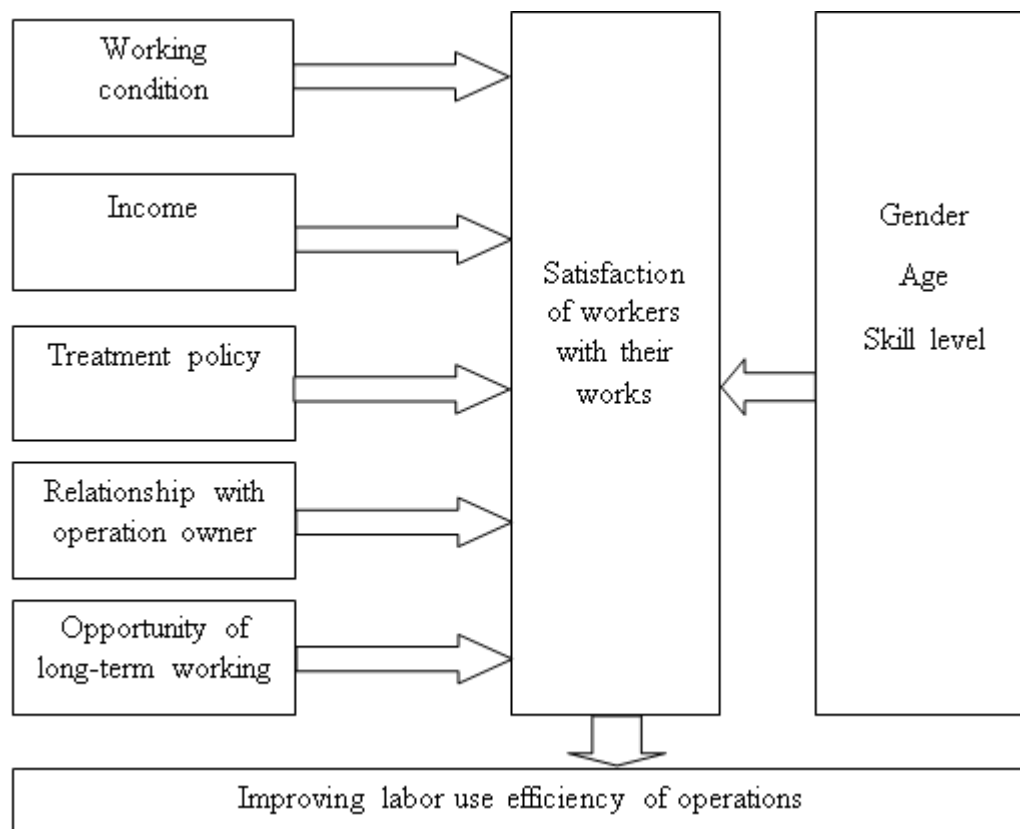


Fig. 1: Analysis frame of the study

RESULTS AND DISCUSSION

Profile of workers in craft villages

Table 1: General information of workers in the operations (in persons and percentages)

Information	Huong Mac (n=60)	Da Hoi (n=60)	Hoi Quan (n=30)	Percentage (%)
1. Age				
- Under 30	18	15	9	28.00
- 30 to 45	25	26	11	41.33
- Over 45	17	19	10	30.67
2. Gender				
- Male	36	42	8	57.33
- Female	24	18	22	42.67
3. Skill level				
- Entry level	4	6	3	8.67
- Medium	36	42	19	64.67
- Good	20	12	8	26.66

Table 1 describes characteristics of workers in the craft villages. Similar to many craft villages in the whole country, a typical characteristic of the craft villages in Tu Son town is using large number of workers. So that, when recruiting workers, operation owners concern the ages, gender and especially skill levels of the candidates. Generally, the common age of workers in the studied villages is in the range of 30 to 45 (over 41%). The workers in this age are preferable for operation owners. They are mature in terms of working skill as well as other behavior skills in working environment and therefore, they are easily assigned works and administrated. For gender, the ratio of male workers in the village occupying over 57% is more than the ratio of female workers. Particularly in Hoi Quan village, because the fabric weaving specifically requires skillful worker hands, the ratio of the female workers is major.

In traditional craft villages, skill level of workers occupies important role because many handicraft products are mainly based on creativeness and skillfulness of the workers. The collected results of the authors showed that Huong Mac village owns the highest ratio of well skilled workers (over 33%). This ratio is higher than the ones of Da Hoi (steel) and Hoi Quan (textile) because the typical characteristic of fine woodworking that requires skillfulness.

Working condition in the craft villages

Table 2: Condition of labor safety and hygiene in craft villages (in percentages)

Content	Huong Mac (n=60)	Da Hoi (n=60)	Hoi Quan (n=30)
1. Working time per day			
- 8 hour	51.70	43.30	56.70
- 8 to 10 hours	41.70	53.30	36.70
- Over 10 hours	6.60	3.40	6.60

2. Working condition			
- Suitable light, temperature, noise	40.00	25.00	43.33
- Good hygiene	41.67	33.33	46.67
- Safe	68.33	48.33	70.00
- Provided PPE	16.67	30.00	26.67

Working time, conditions of temperature, noise level, safety, hygiene and PPE, which are needed factors for workers, are mandatory provisions in the Vietnamese Labor Law 2012. However, it is difficult to determine working time for handicraft works. According to statistical data in the surveyed villages, there are two third of the workers working 8-10 hours per day; most of them are people come from other areas and receive piece-wage (table 2); therefore they want to extend working time. With long working time in noisy and tight working areas, the ratio of workers' satisfaction with working condition is not high. In Da Hoi, only 25% of workers propose that the noise level in their working places is suitable for them. While in Hoi Quan village, this ratio is highest (43.33%). It can be said that the ratio of the workers being provided PPE is insignificant. Maximum ratio of 30% is in Da Hoi. Thus, making working condition suitable for workers has not yet been paid attention in the 3 surveyed villages.

Income and treatment policies

Table 3: Salary of workers in craft villages (in percentages)

Content	Huong Mac (n=60)	Da Hoi (n=60)	Hoi Quan (n=30)
1. Salary payment			
- Permanent	11.67	13.33	50.00
- Piece-wage	56.67	61.67	26.67
- Daily	31.66	25.00	23.33
2. Salary level			
- Under 3 millions VND (less than 150 US dollars)	31.70	21.70	30.00
- 3 to 5 millions VND (150-320 USD)	46.70	38.30	53.30
- Over 5 millions VND (over 320 UDS)	21.60	40.00	16.70

In the craft villages, piece-wage is the most common salary payment method. Besides, some seasonal workers are normally paid daily salary. In Huong Mac the woodworking village, average salary is 5 to 6 millions VND per month for the key workers (46.7% of total workers) and 2.5 to 3.5 millions VND per month for the helpers (31.7%). In Hoi Quan, the statistical data in table 3 shows that the salary distribution is similar. However, with hard and contaminated working condition of steel production, the ratio of the workers having salary over 5 millions VND per month is higher (40%).

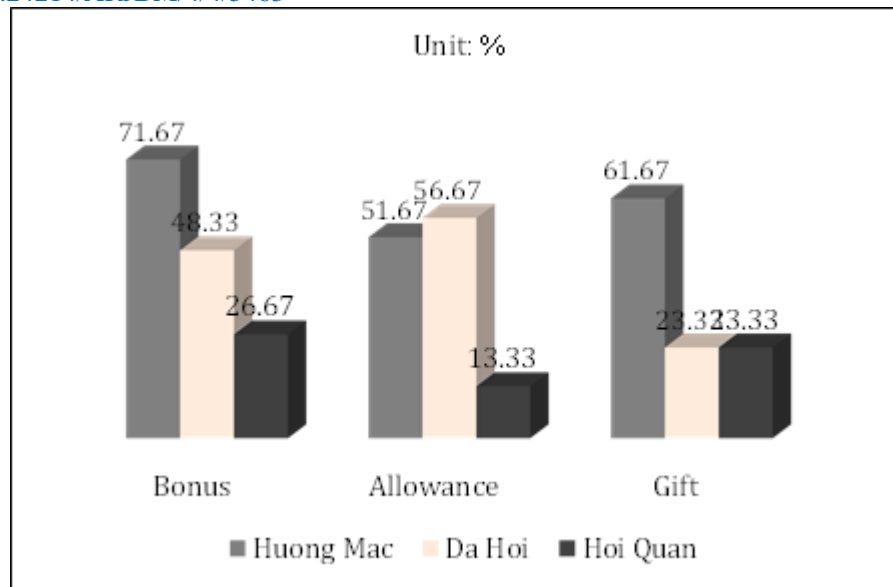


Fig. 2: Some treatment policies

Even though the salary in Huong Mac, Da Hoi and Hoi Quan is higher than the common level in other craft villages in the area, most of the workers do not satisfy with the salary they are paid. Thus, to keep the workers the operation owners have added some treatment policies such as bonus for fulfillment beyond production norm, holiday bonus, allowance for harmful working condition, overtime allowance, compliment when the workers get married or sick, annual travelling. Statistical data in figure 2 show that welfare policies are applied in Huong Mac and Da Hoi better than in Hoi Quan. Treatment policies are not enough but still show the owners' efforts to attract and maintain stable labor.

Relationship to operation owners and opportunity for long-term working

Table 4: Labor contract administration in craft villages (in percentages)

Content	Huong Mac (n=60)	Da Hoi (n=60)	Hoi Quan (n=30)
1. Workers under signed contracts			
- Key worker	13.33	11.67	13.33
- Helper	1.67	11.67	10.00
2. Workers without contracts			
- Key worker	36.67	38.33	40.00
- Helper	48.33	50.00	46.67

In this research, the relationship between employer and employee was analyzed based on contractual binds with an assumption that signing labor contract expresses a tight relationship between the workers and the operation owners and makes the workers more satisfied and responsible to works. However, differently from enterprises, operations make contract with only key workers and verbally deal for works, timing and salary with helpers who are mainly seasonal workers. In all the 3 villages, the number of contracted workers is small (maximum ratio of over 23% in Da Hoi) and mostly concentrates in big operations (table 4).

DOI:10.24214/ARJBM/4/4/5463

Research Article

For worker side, there are over 63% of surveyed people in the 3 villages Huong Mac, Da Hoi and Hoi Quan having time with the operations less than 1 year, and only few percentages having more than 7 years (5% in Huong Mac and 3% in Da Hoi). They want to sign contracts to have opportunity for stable and long-term working. However, normally loose labor contracts with unclear provisions make the workers feeling unassured to sign on. So that, the operation owners should pay more attention to this matter to encourage the workers to bind more to the operations.

Evaluation of workers about satisfaction level with works

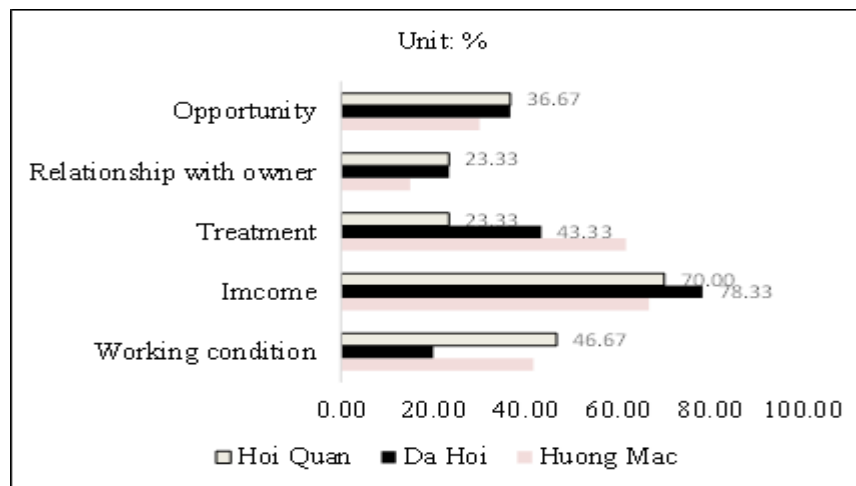


Fig. 3: Level of satisfaction of workers with their works

Analysis of factors affecting level of satisfaction of workers

Exploratory factor analysis

In order to analyze EFA, Cronbach Alfa statistical test for close relationship between query items in the measure scale is required. Many researchers propose that Cronbach Alfa coefficient from 0.6 and over can be used in case the measured terms are new for surveyed person in the study setting [6] (Nguyen Dinh Tho, 2009). The results of the confidence control of measure scale in table 5 show that Cronbach Alfa coefficient of each group is more than 0.6. That indicates the use of 30 observation variations belonging to 5 factors in the study is suitable. In other words, the observation variations describing the workers' satisfaction correlate to each other.

Table 5: Cronbach Alfa coefficient of each factor group

Factor group	Cronbach Alfa coefficient
- Working condition	0.81
- Income	0.75
- Welfare policy	0.77

- Relationship to owners	0.72
- Opportunity for long-term working	0.70

In order to apply EFA, the necessary condition which is that the variations must correlate to each other is solved by Cronbach Alfa test. The sufficient condition is that the Kaiser-Meyer-Olkin value (KMO) must be large (between 0.5 and 1) [5](Hoang Trong và Chu Nguyen Mong Ngoc, 2008). Therefore, Bartlett test was used in this study to consider an assumption that the variations do not have correlation in general.

Table 6: Results of KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.801
Bartlett's Test of Sphericity	Approx. Chi-Square	632.486
	Sig	0.000

The results in table 6 show that KMO is within permitted limit and Barlett test has statistical meaning. In other words, the test reject the assumption that the variations have no correlation. Thus, the data satisfy both necessary and sufficient conditions and are suitable for EFA analysis.

With Principal Components and Varimax, only Factor Loading greater than 0.5 is kept. The results of Varimax show that all Factor Loadings are over 0.5 indicating that not any variation among the 30 variations is rejected. Therefore, there are 5 factor groups affecting workers' satisfaction with their works in the craft villages including: Working condition (X_1); Income (X_2); Treatment policy (X_3); Relationship to operation owner (X_4); Opportunity for long-term working (X_5).

Logistic regression results

With the suitable data from EFA analysis, the authors used logistic regression model to quantify the impact of the 5 above factors on the satisfaction level of the workers in the 3 villages with their works.

Table 7: Results of Logistic regression model

Variation	β coefficient	Significant	EXP(β)
Working condition (X_1)	0,268*	0,084	1,307
Income (X_2)	0,402**	0,012	1,494
Welfare policy (X_3)	0,285***	0,005	1,329
Relationship with owner (X_4)	0,396	0,139	1,485
Opportunity for long-term working	0,623	0,285	1,864

(X ₅)			
Gender (X ₆)	0,169**	0,016	1,184
Age (X ₇)	0,056	0,868	1,057
Skill level (X ₈)	0,626	0,199	1,870
Constant	0,494	0,329	1,638
Omnibus tests of Model Coefficients	Chi - Square 25,386	Sig 0,025	Nagelkerke R Square 0,780

Results of the logistic regression model show that there are 4 factors impacting on the satisfaction of the workers in the villages with their works: working condition, income, treatment policy and worker's gender. For working condition, regression coefficient explains that when the score of the importance of working condition increases 1 point, the probability of workers satisfy with their works increases 1.307 time. When the score of importance of income increases 1 point, the probability of satisfaction increases 1.494 time. When the score of importance of welfare policy increases 1 point, the probability of satisfaction increases 1.329 time. Probability of female workers satisfying with their works is 1.184 time higher than the one of male workers.

CONCLUSION

The study of labor administration and use in the craft villages Huong Mac, Da Hoi and Hoi Quan and of the factors affecting satisfaction of the workers in these villages with their works indicates that:

First: majority of the workers in the villages is in the age of 30-45 (41.33%) with ratio of male of over 57%. Besides, the ratio of workers having good skill is rather low with over 26%.

Second: 2/3 of the workers have to work 8 to 10 hours/day in bad working condition of noise, safety and hygiene and rarely with PPE provided, the maximum ratio of of workers having PPE is 30% in Da Hoi. With the major payment method of piece-wage, the common average salary of the workers in the villages is from 3 to 5 millions VND per month. Particularly, with characteristics of hard working in Da Hoi there are 40% of the workers having salary over 5 million VND per month. Beside salary, the operation owners have some treatment policies such as bonus, allowance, gifts for their workers. Huong Mac is the village who applies such policies the best with over 71% of the workers getting bonuses. Even though treatment policies are quite good, the low ratio of contracted workers in the villages (maximum is 23% in Da Hoi) do not encourage workers to bind with the operations for long time.

Third: EFA analysis confirms that the data with 30 observation variances belonging to 5 groups of independent variations are suitable for the study. The results of logistic regression

[DOI:10.24214/ARJBM/4/4/5463](https://doi.org/10.24214/ARJBM/4/4/5463)**Research Article**

model show that working condition, income, treatment policy and worker's gender affect statistically on the satisfaction with works of the workers. Therefore, some solutions to improve labor use efficiency in craft villages are proposed: enhancing working condition, increasing income, enhancing treatment policies to encourage workers to develop their creativity and to bind with operations for long time.

REFERENCES

1. L. X. Tam and N. T. Thang, *Journal of Science and Development*, 2013, **11(8)**, 1215.
2. Statistic Department of Tu Son town, Statistical report of production and business activities in craft villages in Tu Son town, 2016.
3. N. H. Than, Personnel administration, Ho Chi Minh city, Labor & Social Publisher, 2004, 24-27.
4. T. K. Du, Factors affecting on satisfaction of lecturers in non-public colleges and universities in Ho Chi Minh City, Ho Chi Minh city, Publisher of Open University of Ho Chi Minh City, 2010, 68-75.
5. H. Trong and C. N. Mong Ngoc, Applying statistics in economics-society, Ho Chi Minh city, Statistic Publisher, 2008, 34-46.
6. N. D. Tho, Nguyen Thi Mai Trang Science research in business administration, Ho Chi Minh city, Statistic Publisher, 2009, 56-63.

**Corresponding Author: Nguyen Thi Hai Ninh;
Lecturer, Faculty of Economics and Rural Development, Vietnam National
University of Agriculture**