Identifying Factors Affecting Non-Disclosure of Salary of Female Workers in Construction Sector in Sri Lanka

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ABSTRACT

This study leads to determine the factors affecting Non-Disclosure of salaries of female employees in construction sector for a given questionnaire in Annual Survey of Construction Industries. This survey was conducted by Industries, Trade, Construction and Services Division in the Department of Census and Statistics (DCS). Main objective of this study was to identify the real reasons for non-disclosure of female employees' salaries question for a given questionnaire and to get the most effective solution to minimize non-disclosure for a given questionnaire. This research was done with the survey data of the Annual Surveys of Construction Industries (ASCI) under Economic survey 2013/14 conducted by DCS. Correlation test was carried out to identify the relationship between dependent variable and independent variables separately and Binary logistic regression analysis was used to identify the factors associated with non-disclosure of female employees' salary question for a given questionnaire. The dependent variable of this study was whether a company responds to the female employees' salary or not and four independent variables are Sector, Type of construction industries, Location and Number of female employees. Finally, Sector, Location and Number of female employees were identified as the factors affecting non-disclosure of salary of female employees.

KEYWORDS: Binary logistic, Factors, Non-Disclosure, Sector, Survey

1 INTRODUCTION

Annual survey of construction industries is done by the annual survey design with a view of providing basic information on construction industries. Questionnaires are mailed to the relevant construction firms and data are collected. But it has been a major issue that some of the construction establishments do not respond to some questions in the questionnaire.

According to the survey data of the ASCI under Economic survey 2013/14 conducted by DCS, one of the most non-responded question in the questionnaire, was about female employees' salaries of construction sector. This was selected to identify the factors affecting non-disclosure. In this study, information related to the following types of the construction industries was collected. They were Building Construction, Highway Construction, Bridge Construction, Water Supply & Drainage, Irrigation & Land Drainage, Dredging & Reclamation and Other Construction.

Main purpose of this study was to identify factors affecting non-disclosure of female employees' salaries in construction sector for a given questionnaire in Annual Survey of Construction Industries.

2 LITERATURE REVIEW

Phipps & Jones identified the factors affecting response to the occupational employment statistics survey (2007). For the analysis, they used the Occupational Employment Statistics (OES) survey, and logistic regression models to predict the likelihood of survey response. They tested the effect of a number of conceptual factors on response to the OES survey, including establishment characteristics, such as establishment age, multi-establishment firm status, industry, size, location; and survey design and administration factors, including survey form type, nonresponse follow up

strategies, State staff composition, experience, and turnover, and selection into other Bureau of Labor Statistics (BLS) surveys. A small percentage of OES survey data are collected centrally by the BLS national and regional offices. The full model, reduces the effect of size somewhat, and with all variables from the other models included explains about 12 percent of the variance, a substantial increase over the models focusing on only one conceptual areas of survey participation. While they have much more to explore in model testing and alternative variable construction, it appears that each conceptual area, the establishment, survey administration and external environment are important in explaining participation in the OES survey.

3 RESEARCH OBJECTIVE

The main objective of this study is to identify the factors affecting Non-Disclosure to female employee salaries question for a given questionnaire in the Annual Survey of Construction Industries.

4 METHODOLOGY

The Annual Survey of Construction Industries is a postal survey. This survey is conducted by Industries, Trade, Construction and Services Division in the Department of Census and Statistics and questionnaires are mailed to the relevant construction firms to collect the data. Descriptive analysis was used to identify the data patterns. The Binary Logistic method was used to identify the factors affecting the Non-Disclosure to female employees' salaries question in a given questionnaire.

5 RESULTS AND DISCUSSION

Results of preliminary analysis are shown in following figures.

Figure 1 shows that out of 122 construction establishments 79% have not responded to the salary of female workers question in a given questionnaire whilst only 21% have responded.
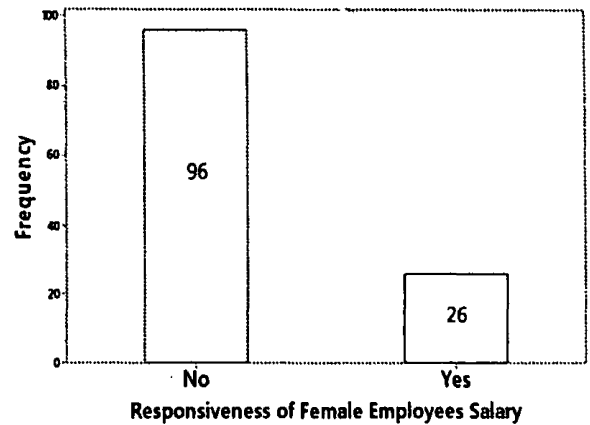

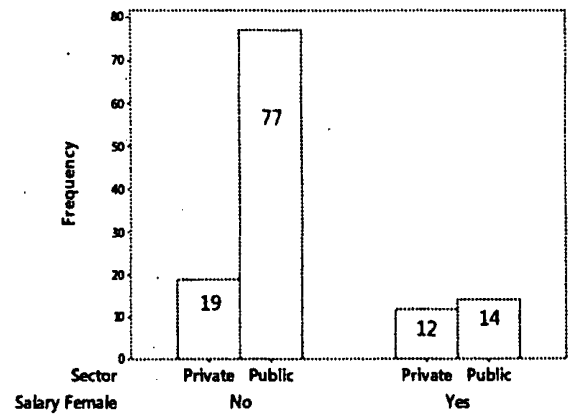Figure 1: Responsiveness of Female Employees Salary Question for the Given Questionnaire

Figure 2: Responsiveness of Female Employees' Salary Question wise Sector

Above figure shows that 80% represent public sector out of those who have not responded to the female employees' salary question in a given questionnaire.

The binary logistic regression method was used to identify the factors affecting Non-disclosure to female salaries in a given questionnaire.

Correlation Test was carried out to identify the relationship between dependent variable and independent variables separately.

H_0: There is no relationship between dependent variable and independent variables.

H_1: There is a relationship between dependent variable and independent variables.

Table 1: Correlation Results

Relationship between	P value	Significant value	Result
Female Salary and Location	0.000	<0.05	Reject H_0
Female Salary and Construction Type	0.008	<0.05	Reject H_0
Female Salary and Number of Female employees	0.021	<0.05	Reject H_0
Female Salary and Sector	0.011	<0.05	Reject H_0

Since all the p-values are less than 5% significant level, there is enough evidence to reject H0. Therefore it can be concluded that there is a relationship between dependent variable and independent variables.

The binary logistic regression analysis was used to identify the factors affecting non-disclosure to female employees' salaries in a given questionnaire.

Table 2: Model summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	630.266[a]	.058	.090
2	520.936[b]	.205	.317
3	494.377[b]	.237	.467
4	466.408[b]	.269	.517

The least value of -2log likelihood gives the best model for the data. According to the -2 log likelihood column in the table, the least value is at the step 4. Therefore the step 4 gives the best model.

According to the above table, Cox & Snell R^2 value of the best model is 0.269 <1.

The Nagelkerke method gives R^2 value of 0.517 which is between 0 and 1. Based on

the above analysis it can be confirmed that the fitted model is the best fit.

When Hosmer and Lemeshow test is used to check the adequacy of the fitted model,

H0: The model adequately fits the data

H1: The model does not adequately fit the data

Table 3: Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	178.928	2	.000
2	44.479	8	.017
3	40.555	7	.020
4	61.495	8	**.058**

Since the significance value is 0.058 > 0.05, H0 is not rejected at 5% level of significance. Therefore it can be concluded that the model adequately fits the data.

6 CONCLUSION

The Fitted model is,

Logit (P_{ijk}) = $(dist)_i$ + $(Sector)_j$ + $(Number of Female Employees)_k$

Where, Pijk is the probability of not responding to female salary in i^{th} Location, j^{th} Sector, k^{th} Number of Female Employees'.

According to the results of the Binary Logistic Regression analysis, it can be concluded that, there are three main factors affecting to non-disclosure to female employees' salary in a given questionnaire of the survey of construction industries.

Those factors are,

- Sector (Public/Private)
- Location (Colombo/ Gampaha/ Kalutara)
- Number of Female employees

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