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DETERMINANTS OF WOMEN UNEMPLOYMENT: EVIDENCE FROM ETHIOPIA (CASE OF HALABATOWN, SNNPR)

[1*]Gizachew Gobebo, [2]Wondaferahu Mulugeta and [3]Temesgen Yaekob

[1]Lecturer, Department of Statistics, Ambo University, Ambo, Ethiopia
[2]Assistant Professor, Department of Economics, JimmaUniversity, Jimma, Ethiopia
[3]Lecturer, Department of Economics, Wachemo University, Hossana, Ethiopia

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ABSTRACT

Unemployment is a macroeconomic problem that affects people most directly and severely. Women constitute about half of the world's population. Even though women's employment has many social and economic importance, their employment in any sector is much lower than their counter part male. This study was aimed at identifying the major determinants of unemployment of women in Halaba Town. The data was collected by distributing questionnaires to a total of 385 women using stratified random sampling technique. Stratification technique was applied by grouping women by kebeles where they live. Out of the total of 385 women, 37.7% of them were unemployed. Descriptive statistics with the help of pie-charts, tables, and percentages were used in analyzing the collected data. In addition to this logistic regression model was employed to analyze the collected data. The Pearson chi-square test was also applied to see the significant association of dependent variable with independent variables. A total of twelve explanatory variables were included in the logistic regression. The result of binary logistic regression revealed that age, educational level of woman, family size, exposure to mass media, sex of household head, and marital status had significant effect on women unemployment. However, the variables presence of children under five years age, educational level of husband/partner, training, drug addiction, occupation of husband/partner, and freedom of decision making were found to be statistically insignificant. Government should give special attention to youngsters by providing them different job opportunities and the concerned bodies should also provide some sort of job-training for those women who are not or less educated.

Corresponding author

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INTRODUCTION

Unemployment is a macroeconomic problem that affects people most directly and severely. For most people, the loss of a job means a reduced living standard and psychological distress. It is no surprise that unemployment is a frequent topic of political debate and that politicians often claim that their proposed policies would help create jobs (Hall, 1979). Women constitute about half of the world's population. Even though women's employment has many social and economic importance, their employment in any sector is much lower than their counter part male. Moreover, women workers receive much lower earnings than male workers. In many developing countries, women employments are also concentrated in low-skill informal work or in hazardous forms of work that are ill-suited to their age and experience (UNDP, 1995). According to UNECA (1996), African women are responsible for production of 60%-80% food. In most developing countries in general, and in Sub-Sahara Africa in particular, women are more likely to be employed in jobs of low quality, working long hours for low wages, engaged in dangerous work or receive only short term and/or informal employment arrangements.

They dominate the informal sector, concentrated in activities such as unpaid agricultural work, food processing, street selling, insignificant cross-border trading, marketing of processed and semi-processed agricultural products and household domestic duties. Only small but growing percentage of women also work in the formal sector such as in teaching, nursing, manufacturing and lower-level clerical jobs. Women's share in wage employment in the non-agricultural sector varies from 28.2% in Morocco to 43.1 % in South Africa in 2010. The inadequate employment situation of women has a number of socio-economic and political consequences. Unemployment and underemployment reflect the failure to make use of an important factor of production, labor, for fostering economic growth (ILO, 2010). Workers in the informal sector have low incomes, limited protection and frequent spells of unemployment. These factors, coupled with lack of access to institutions that shape policies, prevent the poor from acquiring the capabilities for decent work. Strengthening the link between economic growth, employment and poverty reduction in Africa requires, first, policies to increase the employment intensity of growth, and second, enabling the poor to integrate into the growth process and find decent work (UNECA, 2005). UNECA (1996) also noted that the solution to overcome poverty, hunger and chronic food shortage in Africa policies should focus on economic empowerment of women.

In Ethiopia because of cultural bias, un-participatory policies and lack of awareness, many women continued to be burdened with back-breaking domestic chores and heavy agricultural activities for long periods of time in the past. Women in Ethiopia have not been exposed to the economic opportunities that would enable them participate in alternative income-generating activities. This lack of alternative income sources made women to be very much dependent on their husbands and to have low participation in household decision-making (Haimanot, 2007). The Ethiopian economy has witnessed tremendous improvement in the labor market; however, unemployment remains widespread in urban areas. Policies need to address the poor labor market conditions for women in both the rural and urban areas as well as implement strategies which benefit the rising number of educated youth and women entering the labor market (Broussard and Tekleselassie, 2012).

Currently unemployment is one of the major problems of many developing countries including Ethiopia. It has an impact on family cohesion, level of poverty and results in different social problems like violence, prostitution, breakup of families and alcoholism due to hopelessness. It is accompanied by bad occupational prospects and impending economic deprivation, placing the wellbeing of a future family at risk (Schmitt, 2008). Very few studies have been conducted to investigate unemployment of women in Ethiopia. Eventhe studies that were conducted previously have mainly focused on capital of the country, Addis Ababa. But this study investigates unemployment of women in woreda level, Halaba Town which is administrative center of Halaba special woreda in SNNPR. Moreover, unemployment is more of the problem of women than that of men. In Ethiopia in 2005, the women unemployment rate was 7.8% compared to 2.5% for men. The urban women unemployment rate was 43.7% compared to 29.4% for urban male (Denu*et al*., 2005).

In spite of the fact that women were not equally encouraged to participate in a paid work as much as male were in the past, currently the interest of women to be involved in work place is increasing from time to time because of several reasons like good infrastructure made by conducive policies for work, good social networks. Thus, it is advisable to increase the participation of the women in a work so as to make development to take root in the country and to overcome the problems that are associated with the unemployment such as illegal migration, beggary, commercial sex, gradual drift into all manner of criminal behavior, being exposed to diseases like HIV/AIDS(Adebayo, 1999; Egbuna, 2001). To do so, major factors that determine unemployment of women have to be correctly identified. Therefore, this study tries to identify and describe the demographic and socio-economic factors that determine unemployment of women based on a case study of Halaba Town of the SNNPR.

METHODS AND PERCEDURES

Study Area Description

The study was conducted in Halaba Town, SNNPR, and Ethiopia. Halaba Town is administrative center of Halaba special woreda. The townis 315 km away from capital of Ethiopia, Addis Ababa and 87 away km from capital of the Southern Nations Nationalities and People's Regional State, Hawassa. The town is located about 1820 meters above sea level at latitude of $7^0$17'N and longitude of $38^0$06'E. The town has an area of 10.56 square kilometers. Halaba Town is divided into two town administrations namely, Zala Fire and Zobechame. There are three kebelesunderZalaFire town administration namely, DanabeFama, WanjaBer, and MehalAradaand there are two kebelesunderZobechame town administration namely,LendaBer and MurasaBer(Halaba Town, 2016).

Sample size determination and Sampling technique

Sample size determination.

The total population of the Halaba Town is 40,559 of which 21,041 are males and 19518 are females. There are 10,073 women who are economically active in the town (Halaba Town, 2016). There are several formulas developed for sample size determination that conforms to different research situations. The sample size for this study was determined by using the formula described as follows (Cochran, 1977):

$$n = \frac{N}{1 + N(e^2)}$$

Where;

n = the sample size of the study
N= total number of economically active women in the town
e = margin of error= 5 %= 0.05
1=designates the probability of the event occurring

Using the above formula the sample size for the study is 385. Thus, a sample of 385 economically active women was included in the study.

Finally, the sample size in each stratum (kebele) was determined in proportion to the size of the stratum (the number of economically active women in the kebele). Accordingly, WanjaBer 56, MehalArada 105, DanabeFama 90, LendaBer 61, and MurasaBer 73.

Sampling technique

The sample was selected by using stratified random sampling technique. Then applying simple random sampling technique for each stratum (kebele), a sample of women was selected.

Data collection procedures

The survey instrument was designed on the basis of the research objective. Prior to conducting the survey, training was given to data collectors by the researcher on the ways of obtaining cooperation from the respondents and how to fill the questionnaires. The completed data collection form was examined for completeness and consistency during data management and storage. The collected data were analyzed using softwares SPSS and SAS.

Econometric Methodology

For this study binary logistic regression model was applied to identify the determinants of women unemployment.

Logistic Regression Model

Logistic regression is modeling approach used when the response variable is qualitative in nature or categorical and independent variables may be either continuous or categorical. Logistic regression allows one to predict a discrete outcome, such as group membership, from a set of predictor variables that may be continuous, discrete, dichotomous, or a mix of any of these (Gellman and Hill, 2006). The logistic regression is preferred to multiple regression and discriminate analysis as it is mathematically flexible and easily used distribution and it requires fewer assumptions (Hosmer and Lemeshow, 2000). Unlike discriminant analysis, the logistic regression does not have the requirements of the independent variables to be normally distributed, linearly related, nor equal variance with in each group (Tabachnick and Fidel, 2007).

Binary logistic regression is a form of logistic regression which is used when the dependent variable is dichotomous and the independent variables are of any type (Hosmer and Lemeshow, 2000).

Model Description

In logistic regression, a single outcome variable Y_i (i=1,…,n) follows a Bernoulli probability function that takes the value 1 with probability of success π_i or the value 0 with probability of failure 1-π_i.

The binary logistic regression model is described as follows. Let Y_{nx1} be a dichotomous outcome random vector with categories 1 (if a woman is unemployed) and 0 (if a woman is employed). Let X be an nx (k+1) matrix denote the collection of k-predictor variables of Y, i.e.

$$X = \begin{pmatrix} 1 & x_{11} & \cdots & x_{1k} \\ 1 & x_{21} & \cdots & x_{2k} \\ \vdots & \vdots & \ddots & \vdots \\ 1 & x_{n1} & \cdots & x_{nk} \end{pmatrix} \quad Y = \begin{pmatrix} y_1 \\ y_2 \\ \vdots \\ y_n \end{pmatrix} \beta = \begin{pmatrix} \beta_0 \\ \beta_1 \\ \vdots \\ \beta_k \end{pmatrix} \sim \quad (k+1) \times 1$$

,

Where, X -is the design matrix

β - is the vector of unknown coefficients of the covariates and intercept

Then, the conditional probability that a woman is unemployed given the X_i set of predictor variables is denoted by $P(y_i=1/x_i) = \pi_i$.

And π_i can be expressed as follows:

$$\pi_i = p(y_i = 1/x_i) \tag{3.1}$$

The relationship between the predictor variables and response variable is not a linear function in logistic regression; instead, the logarithmic transformation of equation yields the linear relationship between the predictor and response variables. Hence, an alternative form of the logistic regression equation is the logit transformation of π_i given as follows:

$$\log it(\pi_i) = \log(\frac{\pi_i}{1-\pi_i}) \tag{3.2}$$

The transformed variable $logit(\pi_i)$ is related to the explanatory variables as:

$$\log it(\pi_i) = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + ... + \beta_k x_{ki} = X_i^{'}\beta \tag{3.3}$$

Where,

$\beta = (\beta_0 + \beta_1 + \beta_2 ... + \beta_k)'$ are parameters of the model

$X_i = (1, X_{1i}, X_{2i}, ..., X_{ki})'$, i = 1, 2, 3,..., n

The coefficients can be interpreted as the change in the log-odds associated with a one unit change in the corresponding independent variable keeping the other variables constant or the odd increases multiplicatively by e^{β} for every one unit change increase in X.

The probability of success is expressed as follows:

$$\pi_i = p(Y_i = 1/x_{1i}, x_{2i}, ..., x_{ki}) = \frac{e^{X^{'}{}_i}\beta}{1 + e^{X^{'}{}_i}\beta} \tag{3.4}$$

Then, odds of success is given as follows

$$odds(Y_i = 1) = \frac{\pi_i}{1-\pi_i} = e^{X^{'}{}_i\beta} \tag{3.5}$$

Parameter Estimation

The most commonly used method of estimating logistic regression parameters is method of Maximum Likelihood. The method of maximum likelihood yields values for the unknown parameters which maximize the probability of obtaining the observed set of data. In order to apply this method we first construct a function, called the likelihood function. This function expresses the probability of the observed data as a function of the unknown parameters. The maximum likelihood estimators of these parameters are chosen to be those values that maximize this function. Thus, the resulting estimators are those which agree most closely with the observed data. We describe how to find these values from the logistic regression model. Since each y_i represents a bernoulli count in the i^{th}population, the probability distribution function of Y_i is given by:

$$f(y_i) = \pi^{y_i}(1-\pi)^{1-y_i} \tag{3.6}$$

Where, Y_i = 0 or 1 and i =1, 2, 3, …, n

Then the likelihood function is the joint probability distribution of all *n* observations:

$$l(\beta) = \prod_{i=1}^{n} \pi^{y_i}(1-\pi)^{1-y_i} \tag{3.7}$$

The principle of maximum likelihood states that we use as our estimate of parameter the value which maximizes the expression in equation (3.7). However, it is easier mathematically to work with the log of equation (3.7). This expression, the log likelihood, is defined as:

$$L(\beta) = \ln[l(\beta)] = \sum_{i=1}^{n}\{y_i \ln(\pi) + (1-y_i)\ln(1-\pi)\} \tag{3.8}$$

The maximum likelihood estimates are the values for βthat maximize the likelihood function in equation (3.8). Through maximization of the log-likelihood function we can theoretically estimate the parameter vectorβ. But the equation is nonlinear

inβ, and as a result the estimates do not have a closed form expression. Therefore, β can be obtained by maximizing using iterative algorithm method (Agresti, 1996).

Once the model is fitted, we would be interested to know how effective the model is in describing the outcome variable. This is referred to as goodness-of-fit.

Goodness of fit

Pearson chi-square test

The Pearson χ^2 statistic is based on observed (O) and expected (e) observations.

$$\chi^2 = \sum_{i=1}^{n} \frac{(O-e)^2}{O} = \sum_{i=1}^{n} \frac{(y_i - n_i \hat{p}_i)^2}{n_i \hat{p}_i (1-\hat{p}_i)} \tag{3.9}$$

Where: y_i is the observed value of Y.

$\hat{p}_i$ is the predicted or fitted value of Y for a given of x_i

n_i is the number of observations.

High values of Pearson chi-square for a given independent variables indicates that there is strong association between each of the given independent variables and the dependent variable keeping the effect of the other factors constant. That is, testing the hypothesis:

H_o= There is no association between the variables

H_1= There is association between the dependent and the particular independent variable

Wald Test

A Wald test is used to test the statistical significance of each coefficient (β) in the model. If the Wald test is significant for a particular explanatory variable, then we would conclude that the parameter associated with this variable is not zero so that the variable should be included in the model otherwise it should be omitted from the model (Agresti, 1996).

The hypothesis test:

$$H_0 : \beta_j = 0 \text{ Versus } H_A : B_j \neq 0$$

The Wald test statistic, Z, for this hypothesis is

$$Z^2 = \frac{\hat{\beta}_j^{\,2}}{\text{var}(\hat{\beta}_j)} \sim \chi^2(1) \tag{3.10}$$

Where, $\hat{\beta}_j$ is the estimated regression coefficient and $\text{var}(\hat{\beta}_j)$ is the variance of $\hat{\beta}_j$.

The likelihood ratio test

The likelihood ratio test statistic (G^2) is the test statistic commonly used for assessing the overall fit of the logistic regression model.The likelihood ratio test is computed based on - $2LL$ (-2 times log likelihood). The likelihood ratio statistic is obtained by subtracting the two times log likelihood ($-2LL$) for the full model from the log likelihood for the intercept only model. This log likelihood-ratio test uses the ratio of the maximized value of the likelihood function for the intercept only model L_0 over the maximized value of the likelihood function for the full model L_1.The likelihood test statistic is given by:

$$G^2 = -2\log\left(\frac{L_0}{L_1}\right) = -2\big(\log(L_0) - \log(L_1)\big) = -2(LL_0 - LL_1) \tag{3.11}$$

Where LL_0 the log likelihood value of the model which has the intercept term only and LL_1 is the log likelihood value of the full model. The likelihood ratio statistic has a chi-square distribution and it tests the null hypothesis that all logistic regression coefficients except the constant are zero. The degrees of freedom are obtained by differencing the number of parameters in the both model. It is compared with chi-square value at the difference between degree of freedom of both models. If p-value is less than 5 % level of significance leads the rejection of the null hypothesis that all the predictor effects are zero. When this likelihood test is significant, at least one of the predictors is significantly related to the response variable (Hosmer and Lemeshow, 2000).

Hosmer-Lemeshow Test

The Hosmer-Lemeshow test is used to check the overall model fit. In this approach, data are divided into ten groups. From each group, the observed and expected number of events are computed. Then, the Hosmer-Lemeshow test statistic is given by:

$$\beta_1 + U_{1j} \tag{3.12}$$

Where, $E_j = np_j$

$$V_j = np_j(1-p_j)$$

g is the number of groups

O_j is observed number of events in the j[th]group
$E_j$is expected number of events in the j[th]group and
$V_j$is a variance correction factor for the j[th] group.

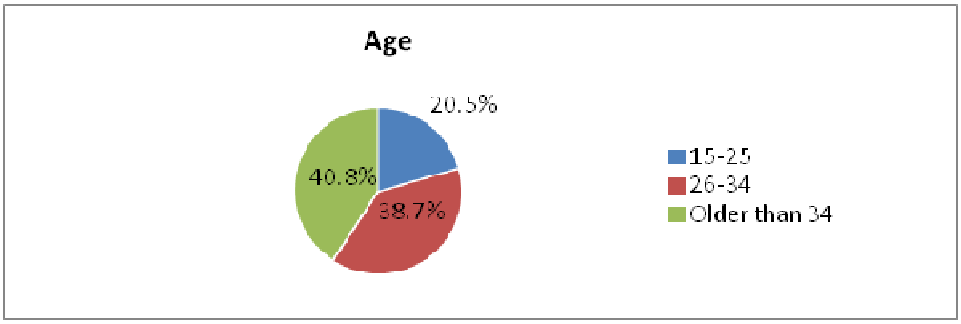
If the observed number of events differs from what is expected by the model, the statistic $\hat{C}$ will be large and there will be evidence against the null hypothesis that the model is adequate to fit the data. This statistic has an approximate chi-square distribution with (g-2) degrees of freedom (Agresti, 1996).

RESULTS AND DISCUSSION

The data were collected by distributing questionnaires to 385 women and analyzed.The Pearson Chi-square statistics was used as a measure of association between dependent variable and independent variables at 95% confidence level. Binary logistic regression model was used to identify the most important determinants of women unemployment.Out of 385 women 145(37.7%) were unemployed while 240(62.3%) were employed.

Descriptive Analysis

Among the total of 385 women, age range from 15-25 constitutes 79(20.5%) respondents, the age range from 26-34 constitutes 149(38.7%) respondents and the remaining 40.8 % of respondents were constituted in age range of older than 34 years.



Source: Survey data (2016)

Fig 1. Age of respondents

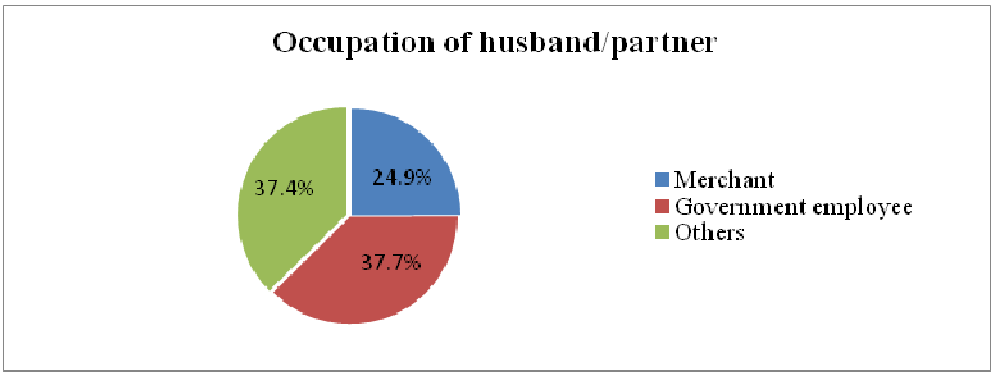
According to result displayed in Table 1 the proportion of the women unemployment was highest for those women whose age range is in 15-25 accounting 43.0% followed by age of older than 34 constituting 37.6% while lowest proportion of unemployment was observed for the age range of 26-34 accounting 34.9%. There was statistically significant association between independent variable age and women unemployment with χ^2 =16.403 and p = 0.007 at 5% level of significance.

Table 1. Unemployment and Age of woman

		Age of women			Total	χ^2 & p-value
		15-25	26-34	more than 34		
Unemployed	No	45(57.0%)	97(65.1%)	98(62.4%)	240(62.3%)	
	Yes	34(43.0%)	52(34.9%)	59(37.6%)	145(37.7%)	χ^2 =16.403
Total		79(100.0%)	149(100.0%)	157(100.0%)	385(100.0%)	P=0.007

Source: SPSS output from survey data (2016)

Regarding occupation of husband/partner 24.9% of women had husband/partners who were merchants while 37.7% of them had husband/partners who were government employees and the remaining 37.4% had husband/partners whose occupation were other than merchants and government employees .



Source: Survey data (2016)

Fig 2. Occupation of husband/partner

Table 2 indicates that unemployment was the least for those women whose husband/partners were government employees (32.4%) followed by those women who had husband/partners whose weremerchants (38.5%). It was highest for those women whose husband/partners occupation was others. There was no statistically significant association between independent variable occupation of husband/partnerand women unemployment with χ^2 =8.472 and p-value = 0.056 at 5% level of significance.

Table 2: Unemployment and Occupation of husband/partner of woman

		Occupation of husband/partner			Total	χ^2 & p-value
		Merchant	government employee	others		
Unemployed	No	59(61.5%)	98(67.6%)	83(57.6%)	240(62.3%)	χ^2 =8.472
	Yes	37(38.5%)	47(32.4%)	61(42.4%)	145(37.7%)	
Total		96(100.0%)	145(100.0%)	144(100.0%)	385(100.0%)	p = 0.056

Source: SPSS output from survey data (2016)

Econometric Model Result

Result of Binary Logistic Regression of the determinants of women unemployment

Table 3 shows the effect of explanatory variables on dependent variable. Before applying final model, bivariate analysis was applied to identify the candidate variables for the final model. Variables with p-value less than 0.05 were taken to the final model to see their independent effect on the dependent variable.The significance of individual parameter estimates was tested using Wald test. As shown in Table 3 Age, Marital Status, Educational level of woman, family size, Sex of household head, and Exposure to mass media were found to be significant variables that determine women unemployment at 5% level of significance. The result shown in Table 3 is interpreted in terms of odds ratio. Odds ratios greater than 1 indicate that the event is more likely to happen in a given category than in the reference category, odds ratios of 1 indicate the event is exactly as likely to happen in the two categories while odds ratios less than 1 indicate that the event is less likely to happen in the given category than in the reference category. Table 3 shows that women whose age was between 26 and 34 years were 0.479 times less likely to be unemployed than those women whose age was between 15 and 25 years. And those women whose age was older than 34 years were 0.216 times less likely to be unemployed than those women whose age was between 15 and 25 years. This implies that Women aged between 15 and 25 years were more likely to be unemployed than older women. Married women were 2.381 times more likely to be unemployed than single women and divorced women were 1.244 times more likely to be unemployed than single women. Widowed women were 1.138 times more likely to be unemployed than single women. This implies that married women were most affected by unemployment. Women whose family size was more than five were 1.095 times more likely to be unemployed than those women whose family size was less than equal to five. This implies that women unemployment is higher for those women with largerfamily size.

Women whose educational level was primary were 0.236 times less likely to be unemployed than those women had no education. Women whose educational level was secondary were0.414 times less likely to be unemployed than those women had no education. Also, women whose educational level was diploma or above were 0.624 times less likely to be unemployed than those women had no education. This implies women who had no education are most affected by unemployment. Women who live in male headed households were 1.576 times more likely to be unemployed than those women who live in female headed households. This implies that women unemployment is higher for those women who live in male headed households. Women who were exposed to mass media sometimes were 0.249 times less likely to be unemployed than those women who were not exposed while women who were exposed to mass media always were 0.167times less likely to be unemployed than those women who were not exposed. This implies that women who were not exposed to mass media are most affected by unemployment.

Table 3. Result of Binary Logistic Regression Model

Parameters	β	S.E.	Wald	Df	Sig.	Exp(β)	95% C.I.for EXP(β)	
							Lower	Upper
Age			6.130	2	0.031*			
15-25(Rf)								
26-34	-0.736	0.342	4.619	1	0.018*	0.479	0.245	0. 728
Older than 34	-1.532	0.771	3.947	1	0.026*	0.216	0.048	0.549
Msts			12.584	3	0.001*			
Single(Rf)								
Married	0.868	0.407	4.552	1	0.015*	2.381	1.073	2.924
Divorced	0.218	0.085	6.554	1	0.001*	1.244	1.053	2.866
Widowed	0.129	0.072	3.199	1	0.022*	1.138	0.288	0.686
Fsz			5.406	1	0.040*			
≤ **5**(Rf)								
> 5	0.091	0.039	5.406	1	0.040*	1.095	1.015	2.758
Edlw			14.325	3	0.000*			
No education(Rf)								
Primary	-1.444	0.718	4.126	1	0.036*	0.236	0.058	0.372
Secondary	-0.882	0.385	5.251	1	0.014*	0.414	0.105	0.215
Diploma or above	-0.443	0.167	7.03	1	0.000*	0.624	0.463	0.891
Shh			7.102	1	0.024*			
Female(Rf)								
Male	0.455	0.171	7.102	1	0.024*	1.576	1.127	2.204
Exmm			9.010	2	0.002*			
Not exposed(Rf)								
Sometimes	-1.390	0.525	7.003	1	0.019*	0.249	0.089	0.493
Always	-1.789	0.714	6.270	1	0.025*	0.167	0.041	0.681
Constant	-1.144	0.765	2.234	1	0.033*	0.318		

Rf=Reference category, β =Regression coefficient, sig. =Significance, Exp(β)=Odd ratio,

***** =Significant at 5% level of significance, S.E. =Standard error

Assessment of goodness of fit Test of significance of relationship between dependent and independent variables
Table 4: Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr>ChiSq
Likelihood Ratio	56.4782	12	<.0001
Score	58.3547	12	<.0001
Wald	51.6925	12	<.0001

Table 4 shows that Likelihood ratio, Score and Wald tests have p-values less than 0.05 and are significant. This indicates that the final model with explanatory variables was more effective than the model without explanatory variables. Therefore, there is a significant relationship between the dependent variable and the set of independent variables.
Likelihood ratio test

Table 5. Model fit of Statistics for Intercept only and full model

Criterion	Intercept Only	Intercept and Covariates
AIC	315.816	279.712
BIC	338.624	296.495
-2 Log L	301.267	244.789

$$G^2 = -2\left(Log(L_0) - Log(L_1)\right)$$

$$G^2 = -2(LL_0 - LL_1) = 301.267 - 244.789 = 56.478.$$

This is compared with Chi-square at difference of full and empty model degrees of freedom(χ^2_{tab} =19.6751 at df=11). $G^2 = 56.478$ is greater than χ^2_{tab} = 19.6751.This implies that there is an evidence against null hypothesis that there is no difference between model without explanatory variables and model with explanatory variables. Hence, the fit is adequate and at least one of the predictors is significantly related to the response variable.
Hosmer-Lemeshow Goodness of Fit Test

Table 6. Hosmer-Lemeshow Test

Chi-square	DF	Pr>Chisq
4.919	8	0.766

The hypothesis test

H_0: The model is a good fit, vs
H_A: The model is not a good fit

The value of the Hosmer-Lemeshow goodness-of-fit statistic is 4.919 with p-value of 0.766 (Table 6). A large p-value (greater than 0.05) suggests that the fitted model is an adequate model. Since the p-value = 0.766 is greater than 0.05, we do not reject the null hypothesis that the model is a good fit. Therefore, binary logistic regression fit the data very well.

Table 7. Contingency Table for Hosmer and Lemeshow Test

Unemployed = No		Unemployed = Yes		Total
Observed	Expected	Observed	Expected	
33	32.139	6	6.861	39
32	29.892	7	9.108	39
24	28.118	15	10.882	39
28	26.648	11	12.352	39
27	25.522	12	13.478	39
21	24.047	18	14.953	39
21	22.356	18	16.644	39
21	20.297	18	18.703	39
20	18.449	19	20.551	39
13	12.532	21	21.468	34

Moreover, according to the result displayed in Table 3 the standard errors of the variables included in the model are lower than two. Therefore, we conclude that the fit of the model is good.

Conclusions and policy Recommendation

Conclusion

The main objective of this study was to identify determinants of women unemployment in Halaba town. The study revealed the effect of demographic and socio-economic determinants on women unemployment. The chi-square test indicated that age, educational level of woman, family size, training, exposure to mass media, sex of household head, presence of children under five years age, and marital status have statistically significant association with the outcome variable women unemploymentat 5% level of significance. The result of binary logistic regression model also revealed that age, educational level of woman, family size, exposure to mass media, sex of household head, and marital status had significant effect on women unemployment at 5% level of significance.

Policy Recommendation

Based on the findings of this study the following recommendations are made:

The age of women significantly determines the women unemployment. The youngsters are more affected by unemployment as compared to elder women. Hence, the government should give special attention to youngsters by providing them different job opportunities. Women with smaller family size are more likely employed than women with larger family size. Minimizing the family size through family planning can decrease burden of women to their family and in turn increases women's labor market participation. Hence, the concerned bodies should provide women family planning program. Married women are more likely unemployed than unmarried women. They are busy in home activities like taking care of their children, preparing food, washing clothes etc. Hence, their husbands should share burden of them and motivate them to participate in labor market and generate income. Since women with higher level of education are more likely employed than women with lower level of education, policies and strategies that promote education and create more job opportunities should be implemented. The concerned bodies should also provide some job-training for those women who are not or less educated.

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