Received: 08 April 2021 | Accepted: 07 May 2021
DOI: 10.52898/ijif.2021.3

ORIGINAL ARTICLE

Effects of Education Related Demographic Characteristics on Job Finding in Insurance Companies

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Abstract
In this study, the effects of demographic factors related to insurance education and other education fields, which are considered to be effective in the recruitment of insurance companies in different branches were examined. In the study, it was also investigated whether the education provided in universities is effective in employment.

Along with the demographic factors related to education, gender, company employee and direct sales personnel variables were also selected categorically. Working status in insurance companies operating in different branches is a dependent variable and is coded categorically. Employment data on insurance companies between 2014-2020 were used in the study. As a solution method, the multinomial logistic regression method was used.

According to the results obtained in the study, it was seen that those who graduated from the insurance and actuarial departments of the universities were employed in non-life insurance companies. However, the majority of those employed in insurance companies are direct sales personnel and they are women. In addition, it was determined that the education provided in the relevant field was not sufficient for finding a job in the insurance sector.

Keywords
Insurance Companies, Human Resources, Employment, Multivariate Statistics.

JEL Classification
G22, O15, E24, C46

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1. INTRODUCTION

The increasing complexity and rapid pace of the global economy has led to increased competition between businesses in today's economy. In this case, the human resource parameter has become the key to creating a very tight competitive advantage. Managers usually try to find and implement mechanisms that will ensure high performance of their employees in most of the time. Examining employee motivation has always been a central element to manage, especially when managers are faced with further environmental changes, work pressure and staff complaints (Chen, 2016, s. 740).

The insurance industry has become very competitive today and continues to mature rapidly. The general structure of the sector and its private resources are linked to performance differences between companies. The global economic crisis that occurred in 2008 was seen to seriously affect the profitability of insurance companies and increased the underwriting risk (Felício, Rodrigues, 2015, s. 1622).

Acquisition and retention of human resources for a firm are the two most critical factors for the sustainability of the firm. For every company operating in many fields, for example, in profit-making and service-based businesses, human resources are an important factor as they are in direct contact with customers. In addition, it can reduce the ability of companies to enter the market and increase customer dissatisfaction in cases such as the absence and retention of human resources. This negative situation can increase current employee dissatisfaction and decrease a firm's overall performance (Moses, Sharma, 2020, p. 76).

Insurance companies also must create effective human resources in terms of continuing their activities for competing in the market and ensuring customer satisfaction. Since they are in direct contact with customers due to their activities, they must improve their existing human resources and make it sustainable. Insurance companies whose main activity is policy sales and premium collection should have well-functioning human resources processes in developing and protecting human resources.

Considering the employees of insurance companies in the insurance sector in Turkey for the last three years, the average increase rate is between 1% and 3%. There are some reasons why the rate of increase has been so slow in recent years. One of the reasons is that the undergraduate, graduate and postgraduate education given in this field is insufficient and therefore, the qualified personnel needed by insurance companies cannot be trained.

Technological developments in the infrastructure in the insurance sector and the reduction in the need for employees due to the fact that a large part of the business volume is solved by technology due to these developments also causes a slowdown in employment. Although the majority of the market in the sector is controlled by the non-life insurance sector, it causes a slowdown in employment in other branches, as this will only cause the need for personnel in this branch.

In this study, demographic factors related to education, which are effective in recruitment and employment in insurance companies, are examined. Factors affecting the employment of employees are analyzed by the multinomial logistic regression method and it has been investigated in which insurance branch they affect the employment of employees. The findings obtained were interpreted in the conclusion part and policy recommendations that could be implemented were made.

2. LITERATURE REVIEW

Studies on recruitment and employment in the insurance sector are limited and no studies have been found or reached. No study has been found in the literature in which educational status and other demographic characteristics are clearly studied. The majority of the work is on the intellectual capital components in insurance companies, the employee and the working environment, the employees and their loyalty to the company, and the motivation of the employees.

Tomic et al. (2018) examined the relationships between employee engagement, service quality, cost reduction and company performance in order to investigate the effect of employee loyalty on company performance. The research model was developed and experimentally tested on a sample of 100 service companies with 317 surveys conducted in the Republic of Serbia and Bosnia Herzegovina. They used different statistical analyzes and concluded that employee engagement is significantly correlated and has a positive impact on company performance.

According to Grabow (2005) facing increasing spending by public health insurance companies due to their activities, increasing statutory premiums for health insurance and consistently high unemployment, the German government decided to create a public health insurance scheme that came into effect in January 2004. In the first part of the study, the reasons for reform are discussed and basic issues are presented. According

to the reform, the potential of the reform to increase employment was discussed in order to contribute to the increase of legal employment by reducing the legal contributions to the public health program. Finally, the study illustrates alternative healthcare reform models and compares their potential for job growth. Although the government planned health care reform took into account the need to both reduce legal contributions to public health insurance and ease the income tax to compensate for higher individual payments for medical treatment. It limited employment growth potential as it lacked the support of the health bureaucracy and the pharmaceutical industry. It has been stated that such reforms resemble a struggle with a Goliath with strong interest, formations, a slow-moving bureaucracy, and uncertain socio-economic consequences.

Brunt and Bowblis (2017) investigated the different effects of the concentration in the health insurance market on the net remuneration of employees of different company sizes. Consistent with the existing literature assessing insurer market concentration and the compensatory differential theory, they found evidence of higher premiums and reduced net compensation for those working in markets with denser insurers. Moreover, they found evidence that the magnitude of these effects was significantly smaller for large employers. It was noted that mergers of large health insurance companies could have a significant impact on small businesses, but mean the impact was mitigated for larger employers.

Qi and Ming-Xia (2014) investigated the link between ethical leadership and employee vocal behavior by focusing on the mediating role of organizational identification and the moderating role of organizational trust. Results of different data obtained from a pair of followers of 293 supervisors working in an insurance group in China found that ethical leadership was positively associated with the employee's vocal behavior. They also found that organizational identity and ethical leadership fully mediated the positive impact of employees on voice behavior. On the other hand, they found that organizational trust regulates the relationship between organizational identity and employee voice. Another finding is that the mediation effect between ethical leadership and the voice of the employee is governed by moderated mediation.

Rahman, Akhter, Khan (2017), using Herzberg's two-factor motivation theory, tried to investigate the factors affecting the job satisfaction of sales representatives from Islamic (Takāful) and Pakistan's traditional insurance business. They received a total of 318 usable answers using the questionnaire method and the multi-stage stratified random sampling method. Multiple regression and hierarchical regression solution methods, including 11 hygiene-motivation factors were used to observe job satisfaction in the presence of moderator factor and Shariah perception. According to Herzberg's two factor theory, the solution results between these two direct selling groups were completely different with the presence of a moderately variable Sharia perception. Without alleviating the impact of the perception of Sharia, Takāful family and traditional life insurance full-time direct sales agents have shown that hygiene factors and motivation factors are more effective indicators of job satisfaction for Pakistan. While controlling the moderating effect in the presence of moderately variable Shariah perception, the Takāful family salespeople are satisfied with the hygiene factors that the motivators are not significantly affected by the perception of Sharia. On the other hand, it was emphasized that traditional life insurance sales agents do not have any connection with the perception of Sharia.

Kuokkanen, Varje, Väänänen, (2020) examined the emergence and development of the discourse on mental health issues as an occupational health risk in professional discussions among Finnish insurance workers from a historical perspective. According to the findings obtained at the end of the study, it was seen that mental health discourse was affected by organizational, cultural, and political changes. In addition, it was stated that the role and power relations of employees in the insurance sector affect the way mental health problems are expressed in professional discussions. Due to the democratization movement in the workplace and the increasing power of the unions in the 1970s, there were positive developments in terms of mental health of employees, and at the same time, the increase in mental health problems legitimized the activity of the union. However, the trend of individualization, which began in the 1990s and 2000s, led to the view that employees were responsible for maintaining and regulating their mental health and competitiveness, once again limiting the opportunities to express their grievances in the workplace and seeming to undermine solidarity among employees.

Hung, Wu (2016) investigated the effects of the job position and survey duration on the employee's corporate loyalty to the insurance company after the merger. According to the results, it was seen that both the job position and the duration of the survey are important determinants for the organizational commitment of the employee. Besides, according to the results, it was observed that there was no interaction effect between the duration of the survey and the job position. It was stated that the survey duration for each year, the organizational commitment average of the represented employees was significantly higher than the staff employees. It was observed that the average organizational commitment difference between representatives and employees decreased from year to year during the survey period.

Oosthuizen, Visser, Mudzimu (2014) tried to determine the relationship between job stress, work-home

intervention and organizational culture perceptions of insurance workers in Zimbabwe. The data used in the study were obtained from the data set consisting of 190 employees who completed the Occupational Stress Inventory-Revised (OSI-R), Work-Home Intervention Questionnaire (SWING) and the Organizational Culture Index (OCI). They used correlation and standard multiple regression analysis methods in data analysis. According to the results obtained in the study, the OSI-R's Role Overloading, Role Inadequacy, Role Uncertainty, Role Limit, Responsibilities, Physical Environment sub-dimensions, Positive Work-Home Initiative and Negative Work-Home SWING and OCI's Bureaucratic, Innovative and A significant positive correlation was found between Supportive Culture subscales. According to the findings, it was seen that insurance employees, who are under constant pressure of the sector, contributed to new information in the context of the job stress experienced. It is also stated that it can be used to improve the work-life balance of the insured and the impact of the organizational culture perceived by the insured and to gain insight.

Herselman (2006) examined the qualifications and behaviors of a group of black financial advisors in terms of empowerment concept in a study based on research conducted in a life insurance company. According to the author, it tries to show this empowerment in terms of creating conditions in which people can achieve their goals. This discussion demonstrated that there is an ongoing process that is defined and placed in the context of South African society and the aspects of the company concerned, consisting mainly of dimensions based on empowering agency institutions and practices.

Yeganeh et al. (2014) examined the intellectual capital situation and its components (human capital, customer capital and structural capital) in public and private insurance companies. The effect of ownership type of insurance companies on the degree of importance of intellectual capital and components has been examined. In this study, a descriptive questionnaire method was used in terms of data collection. According to the findings obtained at the end of the study, it is seen that the ownership type of insurance companies has a significant effect only on the human capital variable. However, it has been observed that it does not have a significant effect on customer capital and structural capital variables. In addition, it was stated that the ownership type of insurance companies has a significant effect on the intellectual capital variable, and the situation of intellectual capital in private insurance companies is better than that of public insurance companies.

Kalkavan, Katrinli, Çetin, (2015) examined the effects of the Leadership Development Model, which was developed in parallel with the restructuring of the human resources department of an insurance company operating in the Turkish Insurance Sector Elemental Branch, on the institution and its employees as part of the change management process. In the study, it was aimed to reveal the contribution of the said development model to the relevant institutions and employees and to give an idea about the possible model methods in different institutions and organizations.

Lee et al. (2014) proposed an integrative transfer of the education model in their study and examined the effect of pre-training performance on the relationship between work environment variables and transfer-related variables. The structural equation modeling used in the study was performed using data collected from 365 Korean employees of a large general insurance company. All of the employees participating in the sample participated in a leadership development program. According to the results obtained from the multi-group analysis, it was observed that the effect of work environment variables on the variables related to transfer was managed by the pre-training performance of the employees. According to the findings obtained as a result of the study, it was understood that a more detailed education transfer model is required that sees performance not only as an outcome variable but also as a precursor variable. However, it has been suggested to implement different strategies to encourage training transfer according to the pre-training performance level of the employees.

3. INFORMATION ABOUT INSURANCE SECTOR EMPLOYMENT NUMBERS

The concept of employment is an essential concept for any entity that carries out commercial and service activities, whether for profit or not. One of the elements necessary for the delivery of the produced services and activities to people and their services is human. The concept of employment gains more importance in the insurance industry. For these market players who are in direct contact with the customer, the concept of people has been always at the forefront. Human beings are at the top of the list of factors that enable the activities to be carried out effectively and efficiently. In short, human resources in the insurance industry are one of the first in the planning. Table 1 shows the number of employments in the Turkish Insurance Sector by years. When analyzed by years, the number of employments of those graduating from high schools and equivalent schools decreases. We can say the same thing for secondary schools and their equivalent schools in years 2015, 2016 and 2018. Employment numbers of primary school graduate decreased in 2016 and 2017. Employment numbers for 2-year vocational school graduates decreased in 2018.

Table 1. Empoyment Numbers of Year in the Turkish Insurance Sector

	Primary school	Secondary School and Equivalent	High School and Equivalent	2-year Vocational School	University	Postgraduate
2014	119	99	1.660	1.604	7.726	1.357
Change %	0	0	0	0	0	0
2015	129	96	1.531	1.643	8.214	1.449
Change %	0,08	-0,03	-0,08	0,02	0,06	0,07
2016	102	82	1.495	1.682	8.635	1.559
Change %	-0,21	-0,15	-0,02	0,02	0,05	0,08
2017	93	94	1.366	1.696	9.182	1.643
Change %	-0,09	0,15	-0,09	0,01	0,06	0,05
2018	114	72	1.323	1.600	9.189	1.772
Change %	0,23	-0,23	-0,03	-0,06	0,00	0,08
2019	123	73	1.243	1.606	9.360	1.823
Change %	0,08	0,01	-0,06	0,00	0,02	0,03
2020	107	75	1.191	1.631	9.685	1.934
Change %	-0,13	0,03	-0,04	0,02	0,03	0,06

4. METHODOLOGY AND DATA

4.1. Variables

Categorical and numerical data were used in the study. The data used in this study was taken from Turkey Insurance Association website. Only the demographic data in the table could be obtained from the website of the Turkish Insurance Association. Data between the years 2016-2020 were used in the study . Two types of data were used. The categorical data used in the study were determined as company type, employment status and gender. Employment status, which is a categorical variable coded in two groups as company employee and direct sales personnel. The dependent variable as company type is divided into non-life, life, life&pension categories. The gender variable is divided into groups as men and women. Other numerical variables are divided into groups as basic education, vocational degree education, university and postgraduate.

Table 2. Variables and Encodings

Categorical Variables			
Employment	**Encodings**	**University Graduate**	**Encodings**
Company Employee:	Company Employee	Economics	UNVEKO
Direct Sales Personnel:	DSPS	Business Administration	UNVISL
Gender		İnsurance or Actuarial	UNVSI.AK
Man:	Man	Engineering	UNVMUH
Woman:	Woman	Other	UNVDIG
Company Type		**Postgraduate**	
Non-Life	HD	Economics	LUEKO
Life	H	Business Administration	LUISL
Life and Pension	E	İnsurance	LUSIG
Basic Education Variables		Engineering	LUMUH
High School	LISE	Other	LUDIG
	Vocational School Degree Education		
Vocational School Insurance Department	YSIG	Vocational School Other Departments	YDIG

The variables and their abbreviations coded in SPSS used in the study are given in Table 2.

4.2. Multinomial Logistic Regression

Logistic regression analysis (LRA) is a statistical solution method that models the probability of the dependent variable called binary. LRA assumes a linear relationship between the log probabilities of the dependent variable and the independent variables in the equation. LRA method is the solution method that is used frequently in many scientific fields. There are also different types of logistic regression method. One of them is the multinomial logistic regression (MLR) method. MLR method is applied as a different generalization of logistic regression to problems involving more than two groupings (Moon, Kim, 2020, p. 1).

Multinomial logistic regression analysis is a type of logistic regression analysis and is conceptually consistent with logistic regression analysis (Aldrich & Nelson, 1984; Hosmer & Lemeshow, 2000). The logistic regression method was first proposed by Berkson (1944). According to the number of categories of the dependent variable in the model, it can be expressed as logistic regression, binary logistic regression or multinomial logistic regression. Multinomial logistic regression analysis is basically based on the assumption that the categories of the dependent variable are completely separate. Considering the dependent variable, a category should serve as a basic category and accordingly, the regression coefficient of the basic category in the model can be calculated (Long, 1997). A multinomial logistic regression model can be thought of as K-1 logistic models for K dependent variables. For such reasons, the multinomial logistic model theory is similar to the logistic model theory. It also uses binary data to analyze the non-fulfillment rate in the formation of a logistics model. When working with a multinomial logistic model, a dependent variable is matched with the base category to calculate the probability ratio of the determined underlying category (Chan, Chang, Chen, Lee, 2019, p. 423):

When the definition of the dependent variable representing the investigated case is qualitative and offers more than two possible outcome categories, a multinomial logistic regression analysis is used to estimate the probability of occurrence for each alternative. To start the analysis, firstly the reference category is defined. Consider, for example, a model in which a dependent variable is presented qualitatively with three possible

response categories. Let the selected reference category be 0 and there will be two other event possibilities that will be represented by categories 1 and 2 related to that category.

To explain this situation, if two explanatory variable vectors are defined with the corresponding predictive parameters (Fávero, Belfiore, 2019, p.563).

$$Z_{i1} = a_1 + B_{11} * X_{1i} + B_{21} * X_{2i} + \cdots + B_{k1} * X_{ki} \quad (1)$$

$$Z_{i2} = a_2 + B_{12} * X_{1i} + B_{22} * X_{2i} + \cdots + B_{k2} * X_{ki} \quad (2)$$

where the logit number, each parameter to be estimated is displayed in the lower symbol. Then, if the dependent variable representing the item under study generally presents M response categories, the estimated logit number will be (M - 1). Therefore, it will be easy to predict the probability of occurrence for each of the categories. The general expression of logit Zim (m =0, 1,…, M-1) for a model in which a dependent variable assumes M response categories is:

$$Z_{im} = a_m + B_{1m} * X_{1i} + B_{2m} * X_{2i} + \cdots + B_{km} * X_{ki} \quad (3)$$

where $Z_{i_0} = 0$ and $e^{Z_{i_0}} = 1$.

In this case, the probability of an event not occurring and an event occurring are calculated using the following equations, respectively:

Probability of occurrence of the non-event:

$$1 - p_i = \frac{1}{1+e^{Z_i}} \quad (4)$$

Probability of occurrence of the event:

$$p_i = \frac{e^{Z_i}}{1+e^{Z_i}} \quad (5)$$

Probability of occurrence for category 0 (reference):

$$p_{i_0} = \frac{1}{1+e^{Z_{i_1}}+e^{Z_{i_2}}} \quad (6)$$

Probability of occurrence for category 1:

$$p_{i_1} = \frac{e^{Z_{i_1}}}{1+e^{Z_{i_1}}+e^{Z_{i_2}}} \quad (7)$$

Probability of occurrence for category 2:

$$p_{i_2} = \frac{e^{Z_{i_2}}}{1+e^{Z_{i_1}}+e^{Z_{i_2}}} \quad (8)$$

At the same time, the total probability of occurrence of events represented by different categories is equal to 1. For M answer categories:

$$p_{i_m} = \frac{e^{Z_{i_m}}}{\sum_{m=0}^{M-1} e^{Z_{i_m}}} \quad (9)$$

4.3. Estimation of the Multinomial Logistic Regression Model

In this study, the dependent variable is divided into three categories: those employed in non-life insurance companies (HD), those employed in life insurance companies (H), and those employed in life and pension insurance companies (E). In addition, the interaction effects of independent variables such as employment type, gender, and university graduation were also examined. In this case, the MLR equation to be estimated according to the categorical dependent variable is as follows for M = 3 (reference category "0"):

$$Z_{i1} = a_1 + \beta_{11} * EMPLOYMENT + \beta_{21} * GENDER + \beta_{31} * UNVEKO + \beta_{41} * UNVISL + \beta_{51} * UNVHUK + \beta_{61} * UNVSI.AK + \beta_{71} * UNVMUH + \beta_{81} * UNVDIG + \beta_{91} * (EMPLOYMENT * GENDER * UNVEKO) + \beta_{10.1} * (EMPLOYMENT * GENDER * UNVISL) + \beta_{11.1} * (EMPLOYMENT * GENDER * UNVHUK) + \beta_{12.1} * (EMPLOYMENT * GENDER * UNVSI.AK) + \beta_{13.1} * (EMPLOYMENT * GENDER * UNVMUH) + \beta_{14.1} * (EMPLOYMENT * GENDER * UNVDIG) \quad (10)$$

$$Z_{i2} = a_1 + \beta_{12} * EMPLOYMENT + \beta_{22} * GENDER + \beta_{32} * UNVEKO + \beta_{42} * UNVISL + \beta_{52} * UNVHUK + \beta_{62} * UNVSI.AK + \beta_{72} * UNVMUH + \beta_{82} * UNVDIG + \beta_{92} * (EMPLOYMENT * GENDER * UNVEKO) + \beta_{10.2} * (EMPLOYMENT * GENDER * UNVISL) + \beta_{11.2} * (EMPLOYMENT * GENDER * HUK) + \beta_{12.2} * (EMPLOYMENT * GENDER * UNVSI.AK) + \beta_{13.2} * (EMPLOYMENT * GENDER * UNVMUH) + \beta_{14.2} * (EMPLOYMENT * GENDER * UNVDIG) \quad (11)$$

The MLR equation estimated for postgraduate education is as follows:

$$Z^*_{i1} = a_1 + \beta_{11} * EMPLOYMENT + \beta_{21} * LUEKO + \beta_{31} * LUISL + \beta_{41} * LUHUK + \beta_{51} * LUSIG + \beta_{61} * LUMUH + \beta_{71} * LUDIG + \beta_{81} * (EMPLOYMENT * LUEKO) + \beta_{91} * (EMPLOYMENT * LUISL) + \beta_{10.1} * (EMPLOYMENT * LUHUK) + \beta_{11.1} * (EMPLOYMENT * LUSIG) + \beta_{12.1} * (EMPLOYMENT * LUMUH) + \beta_{13.1} * (EMPLOYMENT * LUDIG) \quad (12)$$

$$Z^*_{i2} = a_1 + \beta_{12} * EMPLOYMENT + \beta_{22} * LUEKO + \beta_{32} * LUISL + \beta_{42} * LUHUK + \beta_{52} * LUSIG + \beta_{62} * LUMUH + \beta_{72} * LUDIG + \beta_{82} * (EMPLOYMENT * LUEKO) + \beta_{92} * (EMPLOYMENT * LUISL) + \beta_{10.2} * (EMPLOYMENT * LUHUK) + \beta_{11.2} * (EMPLOYMENT * LUSIG) + \beta_{12.2} * (EMPLOYMENT * LUMUH) + \beta_{13.2} * (EMPLOYMENT * LUDIG) \quad (13)$$

5. ANALYSIS RESULTS AND FINDINGS

In the analysis results section of the study, the results obtained by the multinomial logistic regression method are included. The analysis part of the study was applied in the following order and the results obtained were given under different headings. The dependent variable in the study was coded as HD, H and E.

Group 1) It was analyzed according to categorical variables, basic education and vocational high school graduation status.

Group 2) It was analyzed according to categorical variables, university graduation status.

Group 3) It was analyzed according to categorical variables, postgraduate degree.

The results obtained in the study are given in summary tables.

5.1. Analysis Results According to Categorical Variables and University Graduation Status

Analysis results according to categorical variables, basic education and vocational high school graduation status variables, there are no significant statistical variables or model could be obtained with the multinomial logistic regression analysis.

In the tables where the results obtained as a result of multinomial logistic regression are summarized, variables with significant probability values are included.

Table 3 shows the steps taken while creating the MLR model. In the first model created with the independent variables used in the model (Model 0), the probability value is not significant. Probability values are also observed by adding the variables in which the effects of the interaction of independent variables with each other are given to the model. With the entry of the EMPLOYMENT * GENDER * UNVDIG interactive variable into the model no. 1, the probability value is found to be meaningful. The last interactive variable EMPLOYMENT * GENDER * UNVEKO was included in the model with the ongoing additions and finally the model number 4 was obtained since the probability value is p <0,05.

Table 4 contains information about the model created. When all variables entered the model, the -2Log-

Table 3. Model Step Summary

		Model Fitting Criteria			Effect Selection Tests		
Model	Effect(s)	AIC	BIC	-2 Log Likelihood	Chi-Square[a]	df	Sig.
0	Intercept, EMPLOYMENT, GENDER, UNVEKO, UNVISL, UNVHUK, UNVSI.AK, UNVMUH, UNVDIG	1234,811	1326,522	1198,811			
1	EMPLOYMENT * GENDER * UNVDIG	1196,505	1318,786	1148,505	50,306	6	,000
2	EMPLOYMENT * GENDER * UNVMUH	1183,179	1336,031	1123,179	25,326	6	,000
3	EMPLOYMENT * GENDER * UNVISL	1180,937	1364,360	1108,937	14,242	6	,027
4	EMPLOYMENT * GENDER * UNVEKO	1176,616	1390,609	1092,616	16,321	6	,012

Stepwise Method: Forward Entry

a. The chi-square for entry is based on the likelihood ratio test.

Likelihood value was calculated as 1092,616 in the last model created. This means that since the probability value p <0.005 is small, the final model formed is significant. When the goodness of fit test was examined, Pearson and Deviance values were found to be statistically significant. In other words, the probability value for Pearson must be less than P <0.005, and the Deviance probability value must be greater than P> 0.005. Table 4 provides these conditions. Also, Cox and Snell, Nagelkerke and McFadden R2 values were found to be significant.

The results in Table 5 are obtained when the life and pension insurance company variable is taken as the

Table 4. Model Fitting

	Model Fitting Criteria			Likelihood Ratio Tests		
Model	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	1629,813	1640,003	1625,813			
Final	1176,616	1390,609	1092,616	533,196	40	,000

Goodness-of-Fit				Pseudo R-Square	
	Chi-Square	df	Sig.	Cox and Snell	,357
Pearson	1997,349	1674	,000	Nagelkerke	,440
Deviance	1053,827	1674	1,000	McFadden	,264

reference category. When Table 5 is analyzed, the following can be said for non-life insurance companies, according to variables whose probability values are significant.

Employment in non-life insurance companies focuses on direct sales personnel. In other words, most of the employees are employed as direct sales personnel.

Graduates of law and insurance / actuarial departments of universities are employed in non-life insurance companies. However, graduates of other departments of universities are not employed in non-life insurance companies.

Women graduating from the business department of universities and men graduating from engineering departments of universities are employed as direct sales personnel in non-life insurance companies. However, women who have graduated from business administration departments of universities are not employed as company personnel in non-life insurance companies. Again, women who have graduated from economics, engineering and other departments of universities are not employed as direct sales personnel in non-

life insurance companies.

For life insurance companies, women graduating from other departments of universities are employed as company employees. However, women who have graduated from engineering departments of universities are not employed as company employees in life insurance companies.

Table 5. Parameter Estimates for Non-Life and Life Insurance Companies

Parameter Estimates									
								95% Confidence Interval for Exp(B)	
COMPNY TYPE[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	Lower Bound	Upper Bound
HD	Intercept	,343	,177	3,758	1	,053			
	[EMPLOYMENT=0]	1,088	,202	28,867	1	,000	2,967	1,996	4,413
	UNVHUK	1,124	,170	43,706	1	,000	3,078	2,206	4,296
	UNV SI.AK	,327	,048	46,875	1	,000	1,386	1,263	1,522
	UNVDIG	-,063	,018	11,906	1	,001	,939	,906	,973
	[EMPLOYMENT=0] * [CINS=0] * UNVEKO	-,158	,058	7,522	1	,006	,854	,762	,956
	[EMPLOYMENT=0] * [CINS=0] * UNVISL	,116	,046	6,460	1	,011	1,123	1,027	1,227
	[EMPLOYMENT=1] * [CINS=0] * UNVISL	-,077	,034	5,254	1	,022	,926	,867	,989
	[EMPLOYMENT=0] * [CINS=0] * UNVMUH	-,429	,196	4,796	1	,029	,651	,443	,956
	[EMPLOYMENT=0] * [CINS=1] * UNVMUH	,315	,151	4,360	1	,037	1,370	1,019	1,840
	[EMPLOYMENT=0] * [CINS=0] * UNVDIG	-,067	,032	4,471	1	,034	,935	,879	,995
H	Intercept	-,267	,319	,704	1	,402			
	[EMPLOYMENT=1] * [CINS=0] * UNVMUH	-,757	,285	7,044	1	,008	,469	,268	,820
	[EMPLOYMENT=1] * [CINS=0] * UNVDIG	,181	,057	9,998	1	,002	1,199	1,071	1,342

a. The reference category is: E.

b. This parameter is set to zero because it is redundant.

When we take life insurance companies as a reference category, we get the results in Table 6. Again, according to Table 6, employment in non-life insurance companies concentrates on direct sales personnel. In addition, those who have graduated from law departments of universities are employed. Women graduating from engineering departments of universities are employed as company employees in non-life insurance companies. However, women who have graduated from other departments of universities are not employed as company employees. In life and pension insurance companies, women who graduated from engineering departments of universities are employed as company employees, while women who graduate from other departments are not employed as company employees.

Table 6. Parameter Estimates for Non-Life and Life&Pension Insurance Companies

Parameter Estimates									
								95% Confidence Interval for Exp(B)	
	COMPNY TYPE[a]	B	Std. Error	Wald	df	Sig.	Exp(B)	Lower Bound	Upper Bound
HD	Intercept	,611	,306	3,979	1	,046			
	[EMPLOYMENT=0]	1,211	,327	13,716	1	,000	3,355	1,768	6,367
	UNV HUK	1,450	,396	13,438	1	,000	4,262	1,963	9,254
	[EMPLOYMENT=1] * [CINS=0] * UNV MUH	,706	,284	6,170	1	,013	2,027	1,161	3,538
	[EMPLOYMENT=1] * [CINS=0] * UNV DIG	-,182	,058	9,979	1	,002	,833	,744	,933
E	Intercept	,267	,319	,704	1	,402			
	[EMPLOYMENT=1] * [CINS=0] * UNV MUH	,757	,285	7,044	1	,008	2,131	1,219	3,727
	[EMPLOYMENT=1] * [CINS=0] * UNV DIG	-,181	,057	9,998	1	,002	,834	,745	,933

a. The reference category is: H.

b. This parameter is set to zero because it is redundant.

When we take non-life insurance companies as a reference category, we obtain the results in Table 7. We can say the following for life insurance companies. Employment in life insurance companies does not focus on direct sales personnel. Those who have completed the law department of universities are not employed in life insurance companies. In addition, women who have graduated from the engineering departments of universities are not employed as company employees. Women who have graduated from other departments of universities are employed as company employees.

We can say the following for life and pension insurance companies. Employment in life and pension insurance companies does not concentrate on direct sales personnel. Graduates of law and insurance / actuarial departments of universities are not employed. In addition, women who have graduated from business administration departments of universities and men who have graduated from engineering departments of universities cannot be employed as direct sales personnel in life and pension insurance companies.

Graduates from other departments of universities are employed in life and pension insurance companies. Women graduating from economics, engineering and other departments of universities are employed as direct sales personnel in life and pension insurance companies. In addition, women who have completed the business division of universities are employed in life and pension insurance companies as company employees.

Table 7. Parameter Estimates for Life and Life&Pension Insurance Companies

	Parameter Estimates							
							95% Confidence Interval for Exp(B)	
COMPNY TYPE[a]	B	Std. Error	Wald	df	Sig.	Exp(B)	Lower Bound	Upper Bound
H Intercept	-,611	,306	3,979	1	,046			
[EMPLOYMENT=0]	-1,211	,327	13,716	1	,000	,298	,157	,566
UNV HUK	-1,450	,396	13,438	1	,000	,235	,108	,509
[EMPLOYMENT=1] * [CINS=0] * UNV MUH	-,706	,284	6,170	1	,013	,493	,283	,862
[EMPLOYMENT=1] * [CINS=0] * UNV DIG	,182	,058	9,979	1	,002	1,200	1,072	1,343
E Intercept	-,343	,177	3,758	1	,053			
[EMPLOYMENT=0]	-1,088	,202	28,867	1	,000	,337	,227	,501
UNV HUK	-1,124	,170	43,706	1	,000	,325	,233	,453
UNV SI/AK	-,327	,048	46,875	1	,000	,721	,657	,792
UNV DIG	,063	,018	11,906	1	,001	1,065	1,028	1,104
[EMPLOYMENT=0] * [CINS=0] * UNV EKO	,158	,058	7,522	1	,006	1,172	1,046	1,312
[EMPLOYMENT=0] * [CINS=0] * UNV ISL	-,116	,046	6,460	1	,011	,891	,815	,974
[EMPLOYMENT=1] * [CINS=0] * UNV ISL	,077	,034	5,254	1	,022	1,080	1,011	1,154
[EMPLOYMENT=0] * [CINS=0] * UNV MUH	,429	,196	4,796	1	,029	1,536	1,046	2,256
[EMPLOYMENT=0] * [CINS=1] * UNV MUH	-,315	,151	4,360	1	,037	,730	,543	,981
[EMPLOYMENT=0] * [CINS=0] * UNV DIG	,067	,032	4,471	1	,034	1,069	1,005	1,138

a. The reference category is: HD.

b. This parameter is set to zero because it is redundant.

5.2. Analysis Results According to Categorical Variables and Postgraduate Degree Status

When Table 8 is examined, it is seen that 2 models have been created. It has been observed that a significant difference will occur in the model with the introduction of EMPLOYMENT * LUEKO interactive variables into the model. As a result of the entry of these variables into the model, the probability value p <0.005 became significant.

Table 8. Model Step Summary

			Model Fitting Criteria			Effect Selection Tests		
Model	Action	Effect(s)	AIC	BIC	-2 Log Likelihood	Chi-Square[a]	df	Sig.
0	Entered	Intercept, EMPLOYMENT, LU EKO, LU ISL, LU SIG, LU MUH, LU DIG	996,731	1068,085	968,731	.		
1	Entered	EMPLOYMENT * LU EKO	994,594	1076,142	962,594	6,136	2	,047

Table 9 contains information about the model created. When all variables entered the model, the -2Log-Likelihood value was calculated as 962,594 in the last model created. This means that since the probability value p <0.005 is small, the final model formed is significant. When the goodness of fit test was examined, Pearson and Deviance values were found to be statistically significant. In other words, the probability value for Pearson must be less than P <0.005, and the Deviance probability value must be greater than P> 0.005. Table 7 provides these conditions. Also, Cox and Snell, Nagelkerke and McFadden R2 values were found to be significant.

Table 9. Model Fitting Information

	Model Fitting Criteria			Likelihood Ratio Tests		
Model	**AIC**	**BIC**	**-2 Log Likelihood**	**Chi-Square**	**df**	**Sig.**
Intercept Only	1109,142	1119,335	1105,142			
Final	994,594	1076,142	962,594	142,547	14	,000

	Goodness-of-Fit			Pseudo R-Square	
	Chi-Square	**df**	**Sig.**	**Cox and Snell**	,111
Pearson	1031,845	936	,015	**Nagelkerke**	,137
Deviance	835,295	936	,992	**McFadden**	,071

When Life&Pension (E) insurance companies selected as the reference category, the results obtained for Non-Life insurance companies are examined in Table 10, the following can be said;

* LUISL, LUSIG and LUDIG variables are seen to be significant. The probability values of these variables are less than p <0.05.
* Those who have post graduated from business and insurance departments work or are employed in non-life insurance companies.
* Those who have completed other postgraduate programs do not work or are not employed in non-life insurance companies.
* Direct sales personnel do not work or are not employed in life insurance companies.
* Those who graduate from the engineering departments of universities do not work or are not employed in life insurance companies.

Table 10. Parameter Estimates for Non-Life and Life Insurance Companies with Postgraduate Degree

							95% Confidence Interval for Exp(B)	
COMPNY TYPE[a]		**B**	**Std. Error**	**Wald**	**df**	**Sig.**	**Exp(B)**	**Lower Bound**	**Upper Bound**
HD	**Intercept**	,816	,133	37,484	1	,000			
	LUISL	,118	,033	12,481	1	,000	1,125	1,054	1,201
	LUSIG	,389	,080	23,790	1	,000	1,475	1,262	1,724
	LUDIG	-,154	,022	49,899	1	,000	,857	,821	,895
H	**Intercept**	-,260	,240	1,180	1	,277			
	[EMPLOYMENT=0]	-,931	,284	10,769	1	,001	,394	,226	,687
	LU MUH	-,734	,305	5,786	1	,016	,480	,264	,873

a. The reference category is: E.

b. This parameter is set to zero because it is redundant.

When the life insurance company is selected as the reference category, the results in Table 11 are obtained. According to Table 11, employment in non-life insurance companies concentrates on direct sales personnel. Postgraduates of business, insurance and engineering departments are employed in non-life insurance companies, while those who graduate from other postgraduate departments are not employed. And, those who graduate from the graduate department of economics are employed as direct sales personnel.

Employment in life and pension insurance companies focuses on direct sales personnel. In addition, postgraduate of engineering is employed in life and pension insurance companies.

Table 11. Parameter Estimates for Non-Life and Life&Pension Insurance Companies with Postgraduate Degree

Parameter Estimates									
								95% Confidence Interval for Exp(B)	
COMPNY TYPE[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	Lower Bound	Upper Bound
HD	Intercept	1,076	,226	22,671	1	,000			
	[EMPLOYMENT=0]	1,019	,267	14,588	1	,000	2,771	1,643	4,676
	LUISL	,317	,102	9,700	1	,002	1,373	1,125	1,676
	LUSIG	,390	,192	4,114	1	,043	1,478	1,013	2,155
	LUMUH	,805	,304	7,019	1	,008	2,238	1,233	4,061
	LUDIG	-,149	,049	9,223	1	,002	,862	,783	,949
	[EMPLOYMENT=0] * LUEKO	16,871	,320	2777,568	1	,000	21221856,859	11332007,795	39742931,413
E	Intercept	,260	,240	1,180	1	,277			
	[EMPLOYMENT=0]	,931	,284	10,769	1	,001	2,537	1,455	4,424
	LUMUH	,734	,305	5,786	1	,016	2,083	1,146	3,786

a. The reference category is: H.

b. This parameter is set to zero because it is redundant.

The results in Table 12 are obtained when non-life insurance companies are taken as the reference category. According to Table 12, there is a negative trend in direct sales personnel employment in life insurance companies. Those who have completed the business, insurance and engineering departments of postgraduate programs are not employed in life insurance companies. However, those who have completed other postgraduate programs are employed. Those who have completed other graduate programs are employed for life and pension insurance companies.

Table 12. Parameter Estimates for Life and Life&Pension Insurance Companies with Postgraduate Degree

Parameter Estimates									
								95% Confidence Interval for Exp(B)	
COMPNY TYPE[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	Lower Bound	Upper Bound
H	Intercept	-1,076	,226	22,671	1	,000			
	[EMPLOYMENT=0]	-1,019	,267	14,588	1	,000	,361	,214	,609
	LUISL	-,317	,102	9,700	1	,002	,728	,597	,889
	LUSIG	-,390	,192	4,114	1	,043	,677	,464	,987
	LUMUH	-,805	,304	7,019	1	,008	,447	,246	,811
	LUDIG	,149	,049	9,223	1	,002	1,160	1,054	1,277
E	Intercept	-,816	,133	37,484	1	,000			
	LUISL	-,118	,033	12,481	1	,000	,889	,833	,949
	LUSIG	-,389	,080	23,790	1	,000	,678	,580	,793
	LUDIG	,154	,022	49,899	1	,000	1,167	1,118	1,218

a. The reference category is: HD.

b. This parameter is set to zero because it is redundant.

6. RESULTS

According to the findings obtained as a result of the study, some important points stand out in terms of employment in insurance companies after university graduation. The first of these is that the probability value of the gender variable alone is found to be insignificant in the obtained models. In other words, it has been observed that gender is not important in recruitment by insurance companies. However, another point related to employment is that there is a concentration in the employment of university graduate women in insurance companies. At the same time, most of the women were employed as direct sales personnel. Another important point is that those who graduated from the insurance & actuarial and law departments of universities are only employed in non-life insurance companies. The probability and coefficient of being employed in non-life insurance companies for graduates of the law department is higher than those who graduated from the insurance & actuarial department.

After postgraduate education, employment in insurance companies also focuses on direct sales personnel. Again, those who have completed the business, engineering and insurance departments of postgraduate education programs are employed in non-life insurance companies. Those who graduate from other postgraduate and engineering programs are employed by life insurance companies, and those who graduated from other graduate programs are employed by life insurance companies.

When the results are reviewed, the fact that only those who graduated from the insurance & actuarial department are employed in non-life insurance companies and that they are not employed in other insurance fields is an indication of the inadequacy of the education provided by the insurance department of universities. This also shows that the insurance education provided at universities does not coincide with the practice in the field. Another important issue may be that insurance companies employ a small number of graduates from this department. For example, the maximum number of actuary who can work in an insurance company is two or three people. On the other hand, some of the certificates and exams required to work in insurance companies are not passed by most employee candidates.

The reflection of this situation on the economy will be in the form of unavailable idle human resources. In other words, it means that human capital, which plays an important role in the development of the country in terms of internal growth, cannot be used. This is one of the major obstacles to economic growth.

The policy recommendation that can be implemented according to the author's best knowledge is that universities that provide education in the field of insurance employ experienced people in this field as teachers and give more importance to practice in constant communication with insurance companies. Another suggestion might be to reduce the existing quotas, in departments providing education in the field of insurance in order to prevent post-graduation backlog. At the same time, all kinds of technological support required for training in this field must be provided. In other words, online trainings and seminars can be organized for updated topics about insurance.

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How to cite this article: Akgül, Y. (2021). Effects of Education Related Demographic Characteristics on Job Finding in Insurance Companies. International Journal of Insurance and Finance, 1(1), 17-32. https://doi.org/10.52898/ijif.2021.3