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Determination of Factors Affecting "Level of Dependency on Social Aid" of Household Living in Rural Area: Iğdır Province Rural Area Example, Türkiye

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ABSTRACT

Fighting against poverty has become an increasing topic both at international and national levels. In this context, social policy programmes and particularly the implementation and delivery of social aid programs are one of key policy tools widely used in many countries to alleviate poverty and reduce hunger. Assessing the Aid Dependency Rate (ADR) of the beneficiaries is of great importance to achieve the goal of designed and delivered social assistance programs. Therefore, this study determines beneficiaries' level of dependency on social aid and the underlying factors. Primary data were collected through face-to-face survey from 210 households actively beneficiaries of public social aid selected by use of snowball sampling. Additionally, ordinal logistic regression analysis was conducted to determine the factors affecting the level of need of households for public social aid. The findings showed that 46.7% of households were in low level dependency on social aid, 28.6% in intermediate level, and 24.8% in high level. Besides, the results of the ordinary logistic regression analysis revealed that the marital status, employment status of the household and the group of delivered social aid were significant factors affecting level of need for social aid ($P<0.05$). Also, it shows that the odd ratio of household of being in high level increases 264.25 times if there is not any working individual compared to households with two or more working individuals ($P<0.01$) whereas this ratio decreases to 3.71 ($P<0.05$) in households by only one individual working. The study concludes that the presence of even one working individual is of great importance in order to prevent the household's dependence on social aid in high level. Consequently, designing social aid programs that consider the mentioned factors would help to fight against poverty.

Keywords: Social aid, Aid dependency rate, Ordinal logistic regression, Iğdır, Türkiye

1. Introduction

Poverty has become a serious worldwide problem that poses a huge social challenge for policymakers and international institutions. This is due that fighting against poverty is one of sustainable development goal (SGD1) of the United Nations. Determination of the causes of poverty plays an important role in assessing and fighting against poverty. Increasing poverty over the globe is correlated to unfair distribution of income between and inter the countries. Ravallion (2004) notes that income inequality hampers the efforts of poverty reduction. Furthermore, other reasons of poverty include low-income level, marital status, the size of family, low education level, rapid population growth, migration and the difference of development among regions and countries (Ajakaiye & Adeyeye 2001; Dewilde 2004; Kim et al. 2010; Nándori 2011).

On the other hand, many approaches are used to assess poverty and apprehend the dimensional aspects of poverty. While some scholars employ household income as proxy in evaluating the poverty status others use non income proxy such as consumption expenditure, and often human welfare as proxies to estimate individuals' poverty status and well-being (Sen 2000; Wagle 2002; Lister 2004; Jansen et al. 2015). Further, Hoddinott & Quisumbing (2003) highlight that the term vulnerability is often interchangeably used as poverty in economics literature and vulnerability, utility and exposure are three econometric measures used to refer to expected poverty, expected utility and risk measures in economic models.

Measuring poverty at the local level is straightforward; at the national level it is hard but manageable; and at the level of the world as a whole it is extremely difficult, so much so that some people argue that it is not worth the effort. Because there is no world political authority that can set a poverty line use it in antipoverty policies (Deaton 2006). In fact, each country designs its own social policies according to the importance of poverty alleviation in the country policy. Tabor (2002) mentions that social assistance is mostly delivered in cash or in-kind assistance whereas Haushofer & Fehr (2014) stress that the primary goal of social policy is alleviating poverty. Moreover, Midgley & Tang (2010) and Dama (2016) indicate that social assistance benefits

are either delivered by the public authorities, private companies or non-government organizations (NGOs) according to the political system, economic development and social structures of the countries.

In Türkiye, the General Directorate of Family and Social Services (2010) mentions that many small municipalities lack of well-defined method in determining adequate level of need of the households for social assistance. Commonly, the Turkish Statistical Institute (2021) defines a poor as any individual whose income is below a certain threshold and Ministry of Family and Social Services (2021) uses absolute poverty as main criteria and other criterion based on the types of social assistance programs. The neediness threshold for social assistance in Türkiye was considered as a monthly income per capita smaller than one-third (1/3) of the national minimum wage. For this reason, many studies were conducted in Türkiye to examine both the social policy and programmes in different regions as well as the determinants of the success of social assistance in combating poverty. Arı (2003) stated that self-targeting approach of the poor does not reflect the poverty status of about 70% of the applicants. Furthermore, Çetinkaya (2012) indicated that the determination of neediness is still not clear. Daşlı (2016) underscores that identifying the neediness level in implementing social assistance is challenging in Turkey because a lack of appropriate scientific methods. In this context, Taşcı (2019) indicates that the level of need for social assistance is one of widely used tool used in providing social assistance to the poor and vulnerable groups. Abdoul-Azize & Sayın (2022) added that the determination of key factors affecting the level of need of households for public social assistance contributes in designing and delivering effective social assistance benefits that would reduce their risk of being dependent (less needy, needy, very needy) to social assistance.

From the above-mentioned literature, scholars have given a particular attention to designing appropriate criteria to deliver sufficient social protection benefits to the targeting recipients as the use of income level of the beneficiaries is not consistent to apprehend the poverty status of the households. In this view, the classification of the level of dependency on social aid and the determination of factors affecting this level might be of great importance. Accordingly, this study investigates the socioeconomic characteristics and the dependency level of household beneficiaries for social aid and the factors affecting the level of dependency on social aid.

2. Material and Methods

2.1. Study area

This study was carried out in the province of Iğdır and it focused on the households who are beneficiaries of public social aid. The province of Iğdır consists of four regions namely; Iğdır Center, Tuzluca district, Karakoyunlu district and Aralık district. The population of the province of Iğdır is estimated at 199,442 inhabitants of which 56% resides in the city and district centers and 44% others reside in towns and villages.

2.2. Sampling method and data collection

A snowball sampling technique was used to select the households actively beneficiaries of public social aid. The choice of snowball sampling is due to its advantage to gather rich information that reflect a variety of situation on the research topic (Morgan & Morgan 2008; Vogt et al. 2012). Also, such sampling technique is commonly used when the access to the units of the study is difficult and the information on the population is not clear (Patton 2005). Creswell (2013) emphasizes that this technique focuses on people from whom rich data can be obtained while the population of study is reached by following the individuals of the population. Kerlinger & Lee (1999) added the data collection phase of the research is completed that when data saturation is reached.

The study data consisted of primary data collected through face-to-face survey from 210 households actively beneficiaries of public social aid. Since the population of Iğdır center accounts for approximately 70% of the total population, and the characteristics of the districts are similar, 120 households were surveyed from the city center and 30 households from each county as shown in Table 1.

Table 1- Distribution of the number of surveys by region

Region	***Number of Survey***	***Rate (%)***
Iğdır center	120	57.1
Tuzluca district	30	14.3
Aralık district	30	14.3
Karakoyunlu district	30	14.3
Total	210	100.0

2.3. Determination of household's assistance income ratio

Assistance Income Ratio (AIR) is an index indicating the level of need of households below the poverty line for social assistance. This index was developed in the doctoral thesis of Abdoul-Azize (2020) under the supervision of Prof. Dr. Cengiz Sayın. The determination of the value of the AIR index includes all monetary value of both in-kind and cash assistances received for the beneficiary households by converting all in-kind assistance benefits into current values at the market in national currency. Additionally, the monthly amount of social assistance of a given household includes all the monetary values of social assistance delivered the individuals residing in the same household and the household monthly income represents the total of income earned per month by all individuals residing in the same household. According to Abdoul-Azize (2020) the value of AIR of the household is determined by dividing the household monthly amount of social assistance by its monthly income. In this study, because this index shows how dependent the household is on social aid for its livelihood, it was interpreted as the Aid Dependency Rate depicted in Equation 1:

$$\text{ADR} = \frac{\text{Total social assistance for household}}{\text{Total income for household}} \quad (1)$$

2.4. Determination of households' level for dependency on social aid

The ADR is not only an index developed to determine the level of need of households for social aid but also to classify the households below the poverty line and recipients of social aid. Although ADR index in not an eligibility criterion for social aid, its expresses the dependency of households on social aid. Accordingly, the households were ranged into 3 different categories based on their ADR index, which are less level for dependency on social aid, intermediate level for dependency on social aid and high level for dependency on social aid (Table 2).

Table 2- Household's levels on social aid dependency by ADR

Level	***ADR***	***Description***
Low level for dependency on social aid	$0 < \text{ADR} < 1$	These values of ADR index indicates that the share of monthly amount of social aid received by the households are less than the household monthly income. Household's survival depends largely on household income.
Intermediate level for dependency on social aid	$1 \leq \text{ADR} < 2$	These values of ADR indicate that the share of the monthly amount of social aid received by the household equals at least its monthly income or more. Household's survival is largely dependent on social aid.
High level for dependency on social aid	$2 \leq \text{ADR}$	These values of ADR index indicates that the share of monthly amount of social aid of the household is at less two times the monthly income of the recipient household. Therefore, household's survival is highly dependent on social aid.

Graphically the level of need of recipient household for public social aid is presented in Figure 1. The x axis represents the monthly income and the y axis the total monthly amount of aid received by the household recipient of social aid. The level of need of the household is separated by y=x and y= 2x lines whereas the line y=x is the points where the monthly amount of aid (y) of the household equals its monthly income (x). The y=2x line represents the points where the monthly amount of social aid (y) equals two times the monthly income of the household(x). Points on the +y axis represent the households that have no income and are fully dependent on aid. Since this methods is applied to needy household that receive social aid, there is no point located on the +x.

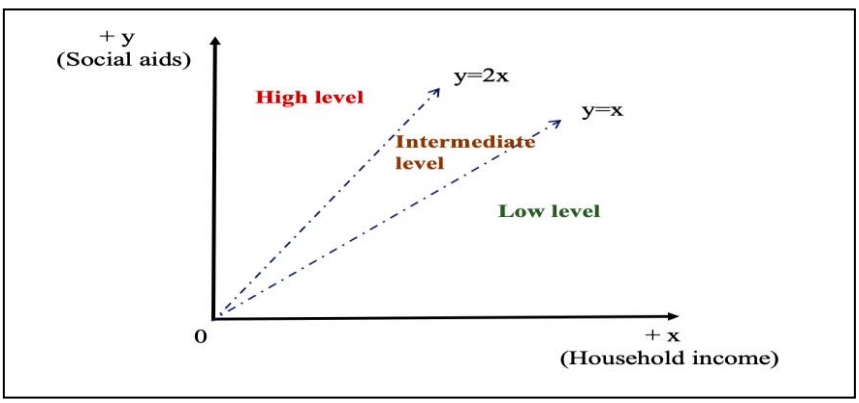

Figure 1- Household's level for dependency on social aid

2.5. Ordinal logistic regression analysis

This study uses ordinal logistic regression model to determine the factors affecting the level of need of the households for public social aid. Ordinal logistic regression model is a model which dependent variable include more than two sortable categories (Chen & Hughes 2004). Commonly it is used for a better comprehension of data and for a strong inference about the characteristics of a population. In all fields of study, ordinal scales arise when the values of continuous variables are measured or summarized by researchers by narrowing them into a set of categories.

In order to reduce subjectivity in social sciences, it is useful to guide ordinal scales about what categories represent (Agresti 2010). The application of linear and logistic regression models largely depends on the dependent variable and the provision of model assumptions. Despite the prevalence of linear regression, binary logistic regression and multivariable logistic regression techniques, ordinal logistic regression analysis is the only alternative technique in studies where the dependent variable has a clear ordering of the category levels (Klaeboe et al. 2003). The model developed by McCullagh (1980) is based on the assumption that there is an unobservable latent variable under an observable categorical variable. In this model, it is assumed that there is an unobservable latent variable (Y^*) that can take values between $-\infty$ and $+\infty$ under the observable ordered categorical dependent variable (Y). A generalized ordinal logistic regression model is used if the different values of the independent variables are higher in different categories of the dependent variable. This regression model is valid when the ordinal dependent variable has three or more categories (McCullagh 1980; Ishwaran & Gatsonis 2000). Five basic link functions are used to obtain the ordinal logistic regression model. The most used functions; logit, probit and cloglog functions (Long 1997). In the ordinal logistic regression model, there is often no clear consideration which link function to choose. In this study, the logit connection function is used for the model.

2.6. Structure of ordinal logistic regression model

The effects of some selected variables on level of dependency on social aid were tested by ordinal logistic regression (OLR) model, structure of which is presented in Figure 2. Independent variables in the model are age, gender, marital status, working status, social assistance group, residential region and residential area kind.

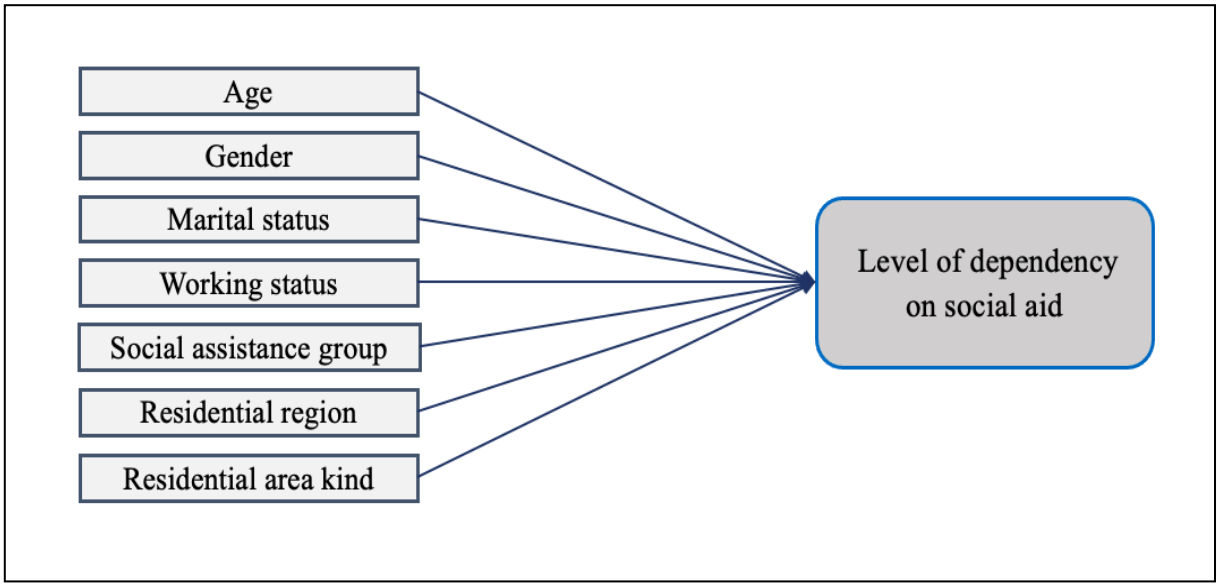

Figure 2- Structure of ordinal logistic regression model used in the study

2.7. Variables used in the ordinal logistic regression model

Dependent and explanatory variables used in the ordinal logistic regression model and their explanations are shown in Table 3.

Table 3- Description of variables in the ordinal logistic regression model

Variable	*Type*	*Explanation*
A. Dependent variable		
·Level of dependency on social aid	Dummy	1: Low 2: Intermediate 3: High*
B. Explanatory variable		
·Age of the head of the household	Continuous	
·Gender of the head of the household	Dummy	1: Male 2: Female*
·Marital status of the head of the household	Dummy	1: Married 2: Single or widowed*
·Working status of individuals residing in the household	Dummy	1: No working person 2: One working person 3: Two or more working people*
·Group of social assistance	Dummy	1: Disabled, elderly or home care payment 2: Family pension for children's education/health or widow payment 3: One-time aid (food, pandemic or home renovation)*
·Residential area kind	Dummy	1: Rural 2: Urban*
·Residential region	Dummy	1: Iğdır center 2: Tuzluca county 3: Aralık county 4: Karakoyunlu county*

*: Reference category

3. Results and Discussion

3.1. Socioeconomic characteristic of the households

Within the scope of the research, the survey was conducted with head of households receiving at least one social assistance (Table 4). Most households are headed by men (81.0%) aged is 48.6 years averagely. Also, 38.6% of them were illiterate, most of them (57.1%) had primary education. The most common type of social assistance (45.7%) is family pensions, which include children's education/health assistance or widow assistances, flowed by disabled, elderly or home care pension (39.0%) and lastly one-time aid (15.2%), consisting of food, pandemic or home renovation. While 52.4% of the needy individuals live in rural areas, 47.6% live in urban areas.

Table 4- Important statistics of respondents

Variables	*Categories*	*Frequency*	*Rate (%)*
Head of the household			
Gender	Male	170	81.0
	Female	40	19.0
Age (Mean: 47.7 years)	≤36	45	21.4
	37-52	87	41.4
	53≤	78	37.2
Marital status	Single (including divorced people)	45	21.4
	Married	165	78.6
Education level	Illiterate	81	38.6
	Primary school	120	57.1
	Secondary school	8	3.8
	University	1	0.5
Individuals of the household			
Working status of household (Mean: 0.7 person)	None	76	36.2
	One person	97	46.2
	Two or more people	37	17.6
Group of social assistance of household	Disabled, elderly or home care pension	82	39.0
	Family pension for children's education/health or widows	96	45.7
	One-time aid (food, pandemic or home renovation)	32	15.2
Type of residential areas	Rural	110	52.4
	Urban	100	47.6

3.2. Level of dependency on social aid

According to the research data most beneficiaries (46.7%) of public social assistance in the province of Iğdır were in low level of dependency on social aid whereas 28.6% in intermediate level and 24.8% in high level. (Table 5). Zengin et al. (2012) and Ikizoğlu (2002) state that priority should be given to those who need assistance the most by taking into account the degree of need in order to avoid the negative effects of social assistance. Standard assistance programs that cover large segments of society and prevent the effective use of resources should be avoided.

Table 5- Level of dependency on social aid by ADR

ADR (Mean)	*Level of dependency on social aid*	*Frequency*	*Rate (%)*
0.27	Low	98	46.7
1.25	Intermediate	60	28.6
3.17	High	52	24.8

3.3. Factors affecting the level of dependency on social aid

In the study, ordinal logistic regression analysis was used to determine the factors affecting the level of dependency on social aid. Some assumptions such as test of parallel lines and multicollinearity were tested and Pseudo R square values was determined to examine the model fitting. Parallel regression assumption or the proportional odds assumption is a necessity while using ordinal logistic regression model for an ordered categorical variable unless a multinomial model was preferred. P value greater than 0.05 implies the failure of rejecting the null hypothesis underlining the parallel regression assumption holds (Liang et al. 2020). In this analysis, the Pearson chi-square test [$\chi^2(11)= 19.267$, $p=0.056$] was non-significant which satisfies the held assumption.

Model fit was assessed by comparing the −2 log likelihood for the intercept-only model and the full model, and Chi-square statistic was used to examine the significance of the model with p values less than 0.05 (Petrucci 2009). In this analysis, it has been seen a significant improvement in fit of the final model over the null model [$\chi^2(11)=204.272$, $P<0.001$]. This situation reveals the existence of the relationship between the dependent variable and the independent variables.

The goodness of fit of the model was examined through R^2. The R^2 values shows what percentage of the dependent variable is explained by the independent variables. But there is no strong guidance in the literature on how these should be used or interpreted (Lomax & Hahs-Vaugn 2012; Smith & McKenna 2013; Osborne 2015; Pituch & Stevens 2016). Pseudo R square values are used by some to assess model fit by determining the effect size of the model. For this analysis, Pseudo R square statistics were as follows: Cox and Snell: 0,622; Nagelkerke: 0,707; McFadden: 0,459.

To examine a multicollinearity problem between independent variables of the ordinal logistic regression model, tolerance and variance inflation factors (VIF) were determined. Hair et al. (1995) note that a VIF value of 10 is a maximum threshold in examining multicollinearity and Ringle et al. (2015) indicate that 5 is a threshold value of VIF while examining multicollinearity issues. The results of multicollinearity estimation of the model used in this study is shown in Table 6.

Table 6- Variance inflation factor results

Variables	*Tolerance*	*VIF*
Age	0.861	1.162
Gender	0.574	1.743
Marital status	0.621	1.611
Working status	0.861	1.161
Social assistance group	0.793	1.262
Residential area kind	0.970	1.031
Residential region	0.955	1.047
VIF average		1.288

The estimated values of the odds ratio were determined to interpret the parameters of the ordinal logistic regression analysis and to determine the reference categories. The interpretations were conducted with the odds ratio of the determined reference categories. The reference category helps in interpreting other categories according to one of the categories of a variable. This method of examining the significance of the parameter refers to odds ratio interpretation. Accordingly, if the odds value is greater than 1, the resulting increase rate is mentioned, and if the odds value is less than 1, the resulting decrease rate is mentioned (Clayton 1974; McCullagh 1980; Garson 2012; Koletsi & Pandis 2018)

Table 7 presents the ordinal logistic regression results. In the model, the third category (High level) of the dependent was determined as the reference category. According to the significance levels of the model parameters; marital status of head of households, working status of households and assistance group of households were found to have a significant effect on level of need for public social assistance (P<0.05). Of the independent variables in the model; age of head of households, gender of head of households, residential area status of households and residential region of households were found non-significant. This finding is not entirely in alignment with previous studies. Barros et al. (1997), Maitra (2002), Demissie et al. (2017), Mdluli-Maziya & Dunga (2022) and Abdoul-Azize & Sayın (2022) found age of the head of the household affected significantly the level of need of the household for social assistance. Barros et al. (1997) and Maitra (2002) found that gender to be an important factor of poverty and they argued female headed households are more likely to be poor compared to male headed households. Boxill & Quarless (2005) found that the poverty is mostly experienced by individuals living in rural areas. Although similar relation was found in study model, it was determined the effect of residential area kind on level of need for public social assistance is non-significant. Residential region has not significant effect on level of need for public social assistance. It was deduced this is associated with the similarity of the development characteristics of the regions in Iğdır.

Table 7- Results of the ordinal logistic regression model

Variable	***Estimate (β)***	***Std. Error***	***Wald***	***Sig. (p)***	***Odds Ratio (e^{β})***
Age	0,020	0.015	1.837	0.175	1.020
Gender (1)	0.235	0.497	0.225	0.636	1.265
Gender (2) *Reference*	0[a]				
Marital status (1)*	-1.544	0.524	8.681	0.003	0.213
Marital status (2) *Reference*	0[a]				
Working status (1)*	5.577	0.768	52.749	0.000	264.256
Working status (2) **	1.311	0.617	4.518	0.034	3.709
Working status (3) *Reference*	0[a]				
Assistance group (1)*	1.683	0.589	8.153	0.004	5.381
Assistance group (2)	-0.094	0.581	0.026	0.871	0.910
Assistance group (3) *Reference*	0[a]				
Residential area kind (1)	0.211	0.348	0.367	0.545	1.235
Residential area kind (2) *Reference*	0[a]				
Residential region (1)	0.257	0.527	0.238	0.625	1.293
Residential region (2)	-0.238	0.668	0.127	0.722	0.788
Residential region (3)	0.297	0.666	0.199	0.656	1.346
Residential region (4) *Reference*	0[a]				

Significance level: * P<0.01; ** P<0.05. Detailed description of variables was given Table 3

The reference category of marital status variable was determined category 2, which is single or divorced. Households with a married head of household are 0.21 times less likely to be in the high category compared to the other (Wald $\chi 2 = 8.681$, P<0.01). This finding is entirely in alignment with previous studies. Sigle-Rushton & McLanahan (2002), Hoddinott & Quisumbing (2003) and Biyase & Zwane (2018) stated that unmarried heads of households have lower income compared to those who are counterparts (the divorced, single and widowed). In parallel with these findings, a study conducted by Ekinci Hamamcı & Anık (2020) showed that most of the needy women who divorced in Türkiye reported that they ended their marriages due to financial difficulties, and the Family Structure Survey conducted by the Turkish Statistical Institute (2017) reported that 42.6% of the reasons for divorce were the inability to financially support the family.

The reference category of working status was considered as category 3 and include households with two or more working individuals. The households that did not have any working individual was considered category 1. For this group, the odds ratio of the household of being in high level for dependency on social aid increases 264.25 times compared to household within the

category 3 (Wald $\chi^2 = 52.749$, $P<0.01$). If only one individual living in the household works, the odds ratio value would decrease to 3.71 (Wald $\chi2 = 4.518$, $P<0.05$). This implies that one individual working in a household represent a potential to fight against the household's poverty. Similarly, Sekhampu (2013) found that the employment status is a key factor determining the probability of the household of being poor and Coulombe & Mckay (1996) and Grootaert (1997) discovered that economic factors such as employment have an important role in determining the poverty status of the household. Further, Çağlayan and Dayıoğlu (2011) emphasized that the number of employees in the household determine the poverty status of the household whereas Javed & Asif (2011) stated that the employment status of the individuals determines their income. Considering the relationship between employment status and household income, the study of Abdoul-Azize & Sayın (2022) found that an increase in the monthly income of the households would likely reduce its level of need for public social assistance.

The reference category of the group of social assistance was determined as the category 3. This category includes one-time payment, food assistance, pandemic related assistance, and home improvement payment. Households in category 1, include regularly paid assistance such as old-age poor assistance, home care assistance, were more likely to be in high level for dependency on social aid 5.38 times compared to those in category 3 (Wald $\chi2 = 8.153$, $P<0.01$). This implies that unproductive individuals such as elders and disabilities are the most disadvantaged social group.

4. Conclusions

The use of determining level of dependency on public social aid as a focal point has revealed highly interesting results regarding the profiles of households receiving social assistance. In this study, the method that reveals the level of dependency on public social aid among the households receiving social assistance was applied and the effective factors were determined by ordinal logistic regression model.

The descriptive statistics results showed that most households were in low decency level for social aid. Additionally, the results of ordinal logistic regression analysis revealed that the working status of the individuals living in the recipient households, the marital status of the head of the household, and the group of social assistance were significant predictors of the level of dependency on social aid ($P<0.05$).

The researchers in this study recommend that social aid should be provided to those who are most dependent on social aid, and that the amount of aid should increase as dependency increases. In other words, standard social aids should be avoided. Besides, it is of great importance and priority that at least one individual is participated to working life by the help of the public so that the households receiving aid do not fall into the trap of poverty. Also, the fact that individuals who receive regularly paid aids are in a disadvantageous position in working life results in being more dependent on social assistance. Therefore, it increases the share of assistances in total household income. The employment of these individuals in the public or private sectors should be subject to positive discrimination by the public. Besides, steps towards ensuring family integrity through direct or indirect policies will contribute positively to the combating poverty by ensuring family unity.

Future studies should be conducted with beneficiaries by identifying the level of dependency on social aid. A comparison of the profiles of these beneficiaries will contribute to the literature. Furthermore, similar studies must be conducted in provinces with different development levels and in provinces hosting foreign refugees.

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Compliance with ethical standards

This research was conducted with the approval of the Ethics Committee of Scientific Research and Publication Ethics Board Presidency, Igdir University, Türkiye.

Conflict of interest

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References

Abdoul-Azize H T (2020). Investigating the social assistance policy practices and factors affecting the household benefit levels in rural areas: case of the province of Antalya. Natural and Applied Sciences Institute. Phd Thesis (Advisor: Prof. Dr. Cengiz Sayın). Antalya. https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=o7zjETrgkgRBEwuWC8yTAQ&no=0SL5Hn_tq--bH5BSkA1fMQ (In Turkish)

Abdoul-Azize H T & Sayın C (2022). Determining the factors affecting the levels of need for public social assistance of households: insights from the district of Konyaaltı, Antalya - Türkiye. *Middle Black Sea Journal of Communication Studies* 7(2): 225-240. https://doi.org/10.56202/mbsjcs.1109905

Agresti A (2010.) Analysis of ordinal categorical data. Second edition. University of Florida. A John Wiley & Sons, Inc., Publication

Ajakaiye D O & Adeyeye V A (2001). Concepts, measurement and causes of poverty. CBN Economic and Financial Review 39(4): 8-44

Arı A (2003). A local friend in the fight against poverty: Friendly hand. Poverty Symposium Book 3:160- 167. Deniz feneri yayınları: İstanbul (In Turkish)

Barros R, Fox L & Mendonca R (1997). Female-headed households, poverty, and the welfare of children in urban Brazil. Economic Development and Cultural Change 45(2): 231–257

Biyase M & Zwane T (2018). An empirical analysis of the determinants of poverty and household welfare in South Africa. *The Journal of Developing Areas* 52(1): 115–130. https://doi.org/10.1353/jda.2018.0008

Boxill I & Quarless R (2005). The determinants of poverty among the youth of the Caribbean. Social and Economic Studies 54(1): 129–160

Çağlayan E & Dayıoğlu T (2011). Comparing the parametric and semiparametric logit models: household poverty in Turkey. *International Journal of Economics and Finance* 3(5): 197-207

Çetinkaya Ş (2012). Social assistance organization in Turkey: Situation analysis, problems and solution proposals. Dumlupınar University. Social Sciences Institute. Phd Thesis (Advisor: Assoc. Prof. Dr. Ramazan Kılıç). Kütahya. https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=FZ4McqppUgM0z59anqdZow&no=jxthwoWkRlq0SSqZtP0fqg (n Turkish)

Chen C K & Hughes J J (2004). Using ordinal regression model to analyze student satisfaction questionnaires. IR Applications 1-13

Clayton D G (1974). Some odds ratio statistics for the analysis of ordered categorical data. Biometrika 61: 525-531

Coulombe H & McKay A (1996). Modeling determinants of poverty in mauritania. World development 24(6): 1015-1031

Creswell J W (2013). Research design: Qualitative, quantitative, and mixed methods approaches. New York: Sage

Dama N (2016). The effect of social aid on social welfare in turkey. Yıldırım Beyazıt University, Social Sciences Institute. Phd Thesis (Advisor: Prof. Dr. Erdal Tanas Karagöl). Ankara. http://acikerisim.ybu.edu.tr:8080/xmlui/handle/123456789/1594 (In Turkish)

Daşlı Y (2016). Public social welfare as a reason of the poverty: Example of central district of Sivas. Social Sciences Institute. Phd Thesis (Advisor: Assist. Prof. Dr. Erem Sarıkoca). Erzirum. https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=yu6iCIDLAUVpnvIYYdj9Dw&no=Drx19oqhE9ZPT-PD5V2cug (In Turkish)

Deaton A (2006). Measuring poverty. Understanding poverty pp. 3-15 Oxford University Press

Demissie B, S Kasie & T Asmmav (2017). "Rural Households' Vulnerability to Poverty in Ethiopia." *Journal of Poverty* 21(6): 528-542

Dewilde C (2004). The multidimensional measurement of poverty in Belgium and Britain: A categorical approach. Social Indicators Research 68: 331–369

Ekinci Hamamcı E D & Anık K (2020). The role of social assistance in women's struggle against poverty: An application in Erzurum. Erzurum Technical University Social Sciences Institute Journal (10): 105-131 (In Turkish)

Garson D G (2012). Ordinal regression. Asheboro: Statistical associates publishing

General Directorate of Family and Social Services (2010). Perception of social assistance and culture of poverty. Ankara. (In Turkish)

Grootaert C (1997). The determinants of poverty in Cote d'Ivoire in the 1980s. *Journal of African Economies* 6(2): 169-196

Hair J F, Jr Anderson R E, Tatham R L & Black W C (1995). Multivariate data analysis. New York: Macmillan

Haushofer J & Fehr E (2014). On the Psychology of Poverty. Science 344(6186): 862-867

Hoddinott J & Quisumbing A (2003). Methods for microeconometric risk and vulnerability assessments. Social Protection Discussion Paper No:0324. Washington, DC: World Bank

Ikizoğlu M (2002). Relationship between poverty and social assistance: An empirical research in Ankara: Mamak district. Society and Social Service 13(1): 86-115 (In Turkish)

Ishwaran H & Gatsonis CA (2000). A general class of hierarchical ordinal regression models with applications to correlated ROC analysis. The Canadian

Jansen A, Moses M, Mujuta S & Yu D (2015). Measurements and determinants of multifaceted poverty in South Africa. Development Southern Africa 32(2):151–169

Javed Z H & Asif A 2011. Female households and poverty: A case study of Faisalabad district. *International Journal of Peace and Development Studies* 2(2): 37-44

Kerlinger F N & Lee H B (1999). Foundations of behavioral research. New York: Harcourt College Publishers

Kim K, Lee Y & Lee Y (2010). A multilevel analysis of factors related to poverty in Welfare States. Social Indicators Research 99: 391–404

Klaeboe R, Turunen Harvik L & Madshus C (2003). Vibration In dwellings from road and rail traffic part II: Exposure– effect relationships based on ordinal logit and logistic regression models. Applied Acoustics 64:89-109

Koletsi D & Pandis N (2018). Ordinal logistic regression, *American Journal of Orthodontics and Dentofacial Orthopedics* 153(1): 157-158

Liang J, Bi G & Zhan C (2020). Multinomial and ordinal logistic regression analyses with multi-categorical variables using R. Annals of translational medicine 8:16

Lister R (2004). Poverty. Cambridge, UK: Polity Press

Lomax R G & Hahs-Vaughn (2012). An introduction to statistical concepts. New York: Routledge

Long J S (1997). Regression models for categorical and dependent variables. London

Maitra P (2002). The effect of household characteristics on poverty and living standards in south Africa. *Journal of Economic Development*, 27(1): 75–83

McCullagh P (1980). Regression models for ordinal data. journal of the royal statistical society: Series B (Methodological), 42(2):109-127

Mdluli-Maziya P & Dunga S (2022). Determinants of poverty in south africa using the 2018 general household survey data. *Journal of poverty* 26(3): 197–213

Midgley J & Tang K (2010). The role of social security in poverty alleviation: an international review, social policy and poverty in East Asia: the role of social security. Routledge. London-New York

Ministry of Family and Social Services (2021). Activity report. https://www.aile.gov.tr/media/100242/2021-yili-faaliyet-raporu.pdf (In Turkish)
Morgan D L & Morgan R K (2008). Single-Case research methods for the behavioral and health sciences. Sage Publications
Nándori E (2011). Subjective poverty and its relation to objective poverty concepts in Hungary. Social indicators research 102: 537–556.
Osborne J W (2015). Best practices in logistic regression. Los Angeles: Sage Publications
Patton M Q (2005). Qualitative research. New York: John Wiley & Sons Inc. Publication
Petrucci C J (2009). A primer for social worker researchers on how to conduct a multinomial logistic regression. *Journal of social service research* 35(2): 193-205
Pituch K A & Stevens J A (2016). Applied multivariate statistics for the social sciences (6th ed). New York: Routledge
Ravallion M (2004). Pro-Poor growth: A primer. policy research working paper; No.3242. World Bank, Washington, D.C. World Bank
Ringle C M, Wende S & Becker J M (2015). SmartPLS 3. Bönningstedt: SmartPLS. Sage Publications
Sekhampu T J (2013). Determinants of poverty in a South African Township. *Journal of Social Science* 34(2): 145–153
Sen A (2000). Social exclusion: concept, application and scrutiny. Social Development Paper No: 01. Manila: Asian Development Bank
Sigle-Rushton W & McLanahan S (2002). For richer or poorer? Marriage as an anti-poverty strategy in the United States. Population 57(3): 509–526
Smith T J & McKenna C M (2013). A comparison of logistic regression pseudo R2. Multiple Linear Regression Viewpoints 39: 17-26
Tabor S R (2002). Assisting the poor with cash: Design and implementation of social transfer programs. World Bank Social Protection Discussion Paper 223: 79-97
Taşcı F (2019). Poverty and Social Work Lecture Notes. Faculty of Open and Distance Education, Istanbul University. İstanbul. (In Turkish)
Turkish Statistical Institute (2017). Family Structure Survey 2016. http://www.tuik.gov.tr/PreHaberBultenleri.do;jsessionid=4l2FZ1kVpNL8JhhkfQtRLqmnJtJ6xk6sGXGwbChqTR9N0LY1K1bp!1813643467?id=21869 (In Turkish)
Turkish Statistical Institute (2021). Income and Living Conditions Survey. https://data.tuik.gov.tr/Bulten/Index?p=Gelir-ve-Yasam-Kosullari-Arastirmasi-2021-45581 (In Turkish)
Vogt W P, Gardner D C & Haeffele L M (2012). When to use what research design. New York: Guilford Press.
Wagle U (2002). Rethinking poverty: Definition and measurement. *International Social Science Journal* 54(171): 155–165
Zengin E, Ayhan Ş & Salih Ö (2012). Social assistance practices in Turkey. Management and Economics 19(2): 133-142 (In Turkish)

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