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Multidimensional poverty: An application to Kazakhstan

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Abstract: *This study estimates multidimensional poverty in Kazakhstan by applying a method developed by Alkire and Foster (2011) and by using data from the 2005 and 2009 versions of the Kazakhstan Household Budget Survey. Income, education, and drinking water supply were selected as dimensions for poverty estimations. The study finds that 18% in 2005 and 8% in 2009 of the population is multidimensionally poor, of which more than 70% live in rural areas. The income and education dimensions contribute the most to overall multidimensional poverty. The Kyzylorda, Atyrau, South-Kazakhstan and Mangistau oblasts have the highest levels of multidimensional poverty. Female headed households, older or unmarried household heads, household heads with good or satisfactory health, and household heads of ethnicities other than Kazakh and Uighur were less likely to be multidimensionally poor in 2005. Household heads with poor health, widowed household heads, households with four or more members, and household heads who were unemployed or rural were most likely to be multidimensionally poor.*

Keywords: *Multidimensional poverty, determinants of poverty, Kazakhstan, household surveys*

1. Introduction

Poverty, as defined by Clark and Hulme (2010), has three dimensions: *Depth* (or severity), *breadth* (multidimensionality over various capabilities, rights or deprivations) and *time* (duration).

The main approaches for evaluating well-being in poverty are welfarist and non-welfarist (Duclos and Araar, 2006). The welfarist perspective roots in utilitarianism (Bentham, 1789; Edgeworth, 1881; Marshall, 1890; Mill, 1961; Pigou, 1920) and uses income or consumption as a proxy for welfare (Atkinson, 1987; Kakwani, 1980; Ravallion, 1996). Sen (1979, p. 554) criticized this approach: “The poor cannot be distinguished for this purpose from the rich – neither in terms of utility, nor in terms of income or other non-utility information.”

While scholars agree that poverty is multidimensional, they debate whether indicators of deprivation should form a composite index. On the other hand, such a measure seems unavoidable when the purpose is to gauge the incidence of deprivations in the same individuals. One way to measure multidimensional poverty is to count the number of dimensions in which people are deprived. The counting approach is popular in the Alkire-Foster (2011) family of poverty studies and in other works (Anand and Sen, 1997; Bourguignon and Chakravarty, 2003;

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Chakravarty and Silber, 2008; Ray and Sinha, 2015).

The government of Kazakhstan has achieved three of its Millennium Development Goals – reducing poverty, providing general primary education, and promoting women’s rights (UN, 2010). Poverty headcount indexes using the official poverty line declined from 46.7% in 2001 to 2.8% in 2014 (Appendix, Table A1). But the United Nations Development Programme notes that poverty is a “multidimensional phenomenon that has deep socio-economic, cultural and psychological roots. It is conditioned by time and location. Historical developments within individual countries must be taken into account when measuring poverty” (UNDP Kazakhstan, 2004).

One example of the multidimensional approach is the Programme’s Human Development Index, which it introduced in its 1997 Human Development Report. The Index uses such indicators as life expectancy, unemployment, infant mortality and maternal mortality to measure poverty in addition to such traditional measures as income, consumption and purchasing power (UNDP Kazakhstan, 2004). But to our knowledge, ours is the first paper to estimate multidimensional poverty in Kazakhstan.

In the paper, Section 2 reviews the literature. Section 3 discusses our methods and data, and Section 4 gives our results. The last section summarizes and interprets conclusions.

2. Literature review

“Monetary poverty” is an approach focusing on income or consumption, emphasizing the cost of a subsistence basket of goods (Ravallion, 1994). It limits the range and depth of human needs, and its rationale for the threshold below which a household is considered poor is fuzzy.

According to Townsend (1979, p.31): “Individuals, families and groups in the population can be said to be in poverty when they lack the resources to obtain the types of diet, participate in the activities, and have the living conditions and amenities which are customary, or are at least widely encouraged or approved, in the societies to which they belong. Their resources are so seriously below those commanded by the average individual or family that they are, in effect, excluded from ordinary living patterns, customs and activities.”

This definition of poverty is multidimensional. Anyone who lacks certain goods and services is poor (Bellido et al., 1998). Thus the measurement of poverty should consider living conditions, health, education, and other vital characteristics. Papers on multidimensional poverty measures include Alkire and Foster (2011) and Bourguignon and Chakravarty (2003). Anand and Sen (1997), Atkinson (2003) and Thorbecke (2008) define cross-cutting problems. Chakravarty and Silber (2008), Tsui (2002), and Bourguignon (2003) proposed axiomatic approaches to multidimensional poverty measures. With an axiomatic approach, one can construct individual and aggregate measures of deprivation and social exclusion (Bossert and Peragine, 2007).

Research on multidimensional poverty has grown substantially during recent years. For example, Laderchi et al. (2003) found evidence that monetary poverty does not always mirror deprivations that occur in several dimensions. In Peru, about 30% of the children and adults who were deprived of education were not monetarily poor. That was also true of around 20% of the children and more than half of the adults who were deprived of health or nutrition. Thus monetary poverty may misidentify deprivation in other dimensions (Alkire and Foster, 2011).

However, the method of multidimensional poverty has disadvantages. One problem is to select essential goods and services, since populations differ in their needs and demands. Secondly, the researcher must make sure that deprivation in a given dimension is unwanted and can occur only through a lack of resources (Bellido et al., 1998). In any case, the researcher’s

selection of dimensions depends on her own understanding of poverty (Hayati et al., 2006).

In multidimensional settings, identification is complex. With given dimensions, one can identify for each person whether she is deprived in each dimension by using related thresholds or poverty lines. But the problem is to aggregate each person's deprivations in each dimension and to decide who is to be considered multidimensionally poor (Bourguignon and Chakravarty, 2003).

In this perspective, recent studies have developed two ways to identify poverty: Union and intersection.

The union is the most common approach. It considers the person to be poor if deprived in at least one dimension. However, as the number of dimensions increases, most of the population may be identified as poor, which some observers may regard as an exaggeration. Consequently, the union method cannot be useful in distinguishing the most extensively deprived persons (Alkire and Foster, 2011).

The other identification approach is the intersection: To be considered poor, a person must be deprived in all dimensions. Thus those considered poor are few. This approach is most helpful in distinguishing the poorest of the poor. But those who are deprived in many but not all dimensions are considered non-poor. Furthermore, as the number of dimensions increases, the poor share of the population decreases (Alkire and Foster, 2011).

In a good comparison of the two methods, Alkire and Seth (2015) use ten dimensions to identify the poor in rural India. Of the population, the union approach identified 97.1% as poor, and the intersection approach, 0.1%. These methods cannot be applied in all circumstances.

The majority of poverty studies in Kazakhstan have long been conventional, based on cross-sectional data (Anderson and Pomfret, 2002; Pomfret, 2006; Rhoe et al., 2008). Conventional static analysis focuses on the poverty headcount ratio, which measures the proportion of the population that has fallen below an income or expenditure threshold at a particular time, without considering deprivation in other dimensions.

3. Methodology and data

3.1 Multidimensional poverty index

Before considering Alkire and Foster's (2011) model in detail, let's clarify notation. Let n denote the number of persons, and $d \geq 2$ (since the measure is multidimensional) be the number of dimensions. Let $x = [x_{ij}]$ represent the $n \times d$ matrix of achievements, and $x_{ij} \geq 0$ be an achievement of any person $i = 1, \dots, n$ in any dimension $j = 1, \dots, d$. Each row vector x_i contains person i 's achievements in different dimensions, whereas each column vector x_{*j} represents the distribution of dimension j achievements across persons. Let $z_j > 0$ be the deprivation cutoff or poverty line in dimension j . We use the expression $|v|$ to represent the sum of all elements of any vector or matrix v , and $\mu(v)$ to denote the mean of v (or $|v|$ divided by the total number of elements of vector or matrix v) (Alkire and Foster, 2011).

For any given x , $g^0 = [g_{ij}^0]$ represents the matrix of deprivations, whose typical element g_{ij}^0 is defined by $g_{ij}^0 = 1$ in case $x_{ij} < z_j$, and $g_{ij}^0 = 0$ in case $x_{ij} \geq z_j$. Thus g^0 is a matrix such that its ij element is 1 when person i is deprived in dimension j , and 0 when the person is not deprived. From g^0 we build a column vector c of deprivation counts such that the i^{th} element $c_i = |g_i^0|$ denotes the number of deprivations suffered by person i .

The approach of Alkire and Foster (2011) identifies the multidimensionally poor using a

cutoff level c_i lying between the two extremes of 1 and d . For $k = 1, \dots, d$, let P_k be the identification measure defined by $P_k(x_i; z) = 1$ when $c_i \geq k$, and $P_k(x_i; z) = 0$ when $c_i < k$. That is, P_k identifies person i as multidimensionally poor if the number of dimensions in which she is deprived is at least as large as k . If the number of deprived dimensions is less than the cutoff k , she is not considered as multidimensionally poor. Since P_k uses both the *within dimension* cutoffs z_j and the *across dimensions* cutoff k , the authors call it the *dual cutoff* method of identification. P_k includes the union and the intersection methods in the special cases of $k = 1$ and $k = d$.

Let $Z_k = \{i : P_k(x_i; z) = 1\}$ denote the set of multidimensionally poor people identified by using the dual cutoff approach. The percentage of the population that is poor will be estimated by the multidimensional Headcount Ratio $H = H(x; z)$, which is defined by $H = q/n$, where $q = q(x; z) = \sum_{i=1}^n P_k(x_i; z)$ is the number of persons in the set Z_k . This measure is easy to compute and understand, and it can be calculated with ordinal data (Santos and Ura, 2008). But it violates the dimensional monotonicity axiom. In other words, if a poor person becomes deprived in a new dimension, H won't change. Furthermore, H cannot be decomposed to show how much each dimension contributes to poverty (Alkire and Foster, 2011).

In this connection, the authors suggest a class of poverty measures that adjusts for dimensions, the Foster-Greer-Thorbecke (FGT) approach. This is given by $M_\alpha(x; z) = \mu(g^\alpha(k))$ when $\alpha \geq 0$. When $\alpha = 0$, they propose the Adjusted Headcount Ratio, given by $M_0 = \mu(g^0(k)) = HA$, which is the total number of deprivations experienced by the poor (or $|c(k)| = |g^0(k)|$) divided by the maximum number of deprivations that could be experienced by all people (or nd). The measure M_0 is also the product of the percentage of the population that is multidimensionally poor (H) and the average deprivation share across the poor A , which is given by $A = |c(k)|/(qd)$. It contains information about the incidence of poverty and the average extent of a poor person's deprivation (Santos and Ura, 2008). The advantage of this measure is its sensitivity to the frequency and breadth of multidimensional poverty. In the method $(P_k; M_0)$, if a poor person becomes deprived in a new dimension, then A and M_0 increase, satisfying the dimensional monotonicity axiom. The measure M_0 can be calculated with ordinal data (Alkire and Foster, 2011).

When $\alpha = 1$, the authors propose the measure Adjusted Poverty Gap, which is $M_1 = \mu(g^1(k)) = HAG$. This is the sum of the normalized gaps of the poor (or $|g^1(k)|$) divided by the highest possible sum of normalized gaps (or nd) (Santos and Ura, 2008).² M_1 is a product of the Adjusted Headcount Ratio M_0 and the average poverty gap given by $G = |g^1(k)|/|g^0(k)|$. It tells us about the incidence of multidimensional poverty, the average range of deprivations, and the average depth across deprived dimensions. The method $(P_k; M_1)$ fulfills the monotonicity axiom, so if the deprivation of a poor person deepens in any dimension, $g_{ij}^1(k)$ and M_1 will increase (Alkire and Foster, 2011).

A key property for all $M_\alpha(x; z)$ class members is decomposability: The overall poverty level equals the weighted average of subgroup poverty levels, where the weights are subgroup population shares. This property is useful for generating profiles of poverty and determining the population that is unusually poor (Alkire and Foster, 2011).

² The poverty gap is defined as $g_{i=z-x_i}$, which measures the deprivation shortfall of the i th individual. The gaps are normalized by the poverty line z and the number of the poor.

3.2 Dimensions, deprivation cutoffs and weighting

Kazakhstan signed the Millennium Declaration and tried to implement eight of its goals (MDGs). This paper bases the selection of dimensions for measuring multidimensional poverty on the MDGs, but data are available for only three.

The dimension income relates to the first MDG: Eradicate extreme poverty and hunger. For the income cutoff, we used the official Kazakhstani levels of minimum subsistence for 2005 and 2009, computed by the Agency (now Committee) of Statistics of the Republic of Kazakhstan (ASRK) for each oblast depending on price differences. If the household's monthly income for consumption is less than the corresponding level of the subsistence minimum, the household is income-deprived.

The dimension education relates to the second MDG: Achieve universal primary education. Kazakhstan achieved this goal, leading to the next MDG, which is for general secondary education. Since Kazakhstan provides this to children everywhere, we assume that all children attend school, so we consider only adults. A household is education-deprived if the share of post-secondary educated adults is less than half of all adults in the household.

The third dimension, the supply of drinking water, relates to the seventh MDG: Ensure environmental sustainability. Kazakhstan is increasing access to safe drinking water, but some areas are still lacking. To satisfy this dimension, a household must have access to a drinking water pipe in its dwelling, or a water supply must be within 200 meters of the residence. Otherwise, the household is water-deprived.

We assign the same weight to each of the three dimensions.

3.3 Multivariate logistic regression analysis

We used the logit model to estimate determinants of multidimensional poverty. The dependent variable is binary, representing a household's status as multidimensionally poor (1) or non-poor (0). The model is

$$\Pr(Y = 1 | X_1, X_2, \dots, X_i) = \frac{1}{1 + \left(\frac{1}{e^{(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_i X_i)}} \right)}$$

where X_1, X_2, \dots, X_i are the control variables; and $\beta_0, \beta_1, \beta_2 \dots \beta_i$ are the coefficients of the i independent variables.

3.4 Data

Our data come from the Kazakhstan Household Budget Surveys (KHBS) for 2005 and 2009. These surveys collect comprehensive information about living standards from 12,000 households. They are representative at the level of the oblast (region). In the first stage of sampling, we divided areas in each oblast (excluding the major cities Almaty and Astana) into four strata: Large cities, medium-sized cities, small towns and rural settlements. In the second stage, we took within each stratum primary sampling units, each with at least 150 households. Within each primary sampling unit, we sampled households with a probability proportional to household size, listing 30 households (10 more were listed as replacements). We constructed survey weights as reciprocals of population quantities, which were provided by the ASRK.

The questionnaires contain four modules. The first concerns daily expenditures on food and household necessities. The second includes quarterly expenditures for clothes, durables, utilities, education, healthcare, transportation and other expenses; the module also includes household incomes. The third module gathered data on housing conditions, livestock, equipment and machinery, education and employment. The last module covers the structure of the

households. For 2005 two additional modules surveyed the health and education of household members.

Due to missing information, we used only 11,345 households in 2005 and 11,684 households in 2009. Tables A2 and A3 in the appendix present the regional composition of the samples. The unit of identification is a household.

4. Estimation results

4.1 Estimation of multidimensional poverty

The estimates indicate that the incidence of deprivation is higher in income and education than in water access for 2005. The statistical means of each dimension are in the Appendix (Tables A4 and A5). According to Figure 1, 32% of the population had income used for consumption that was below the subsistence minimum, whereas 30% lived in a household where more than half of the adults did not have post-secondary education in 2005. About 12% of the population lacked access to drinking water, three fourths of which were rural. In fact, the greater part of the population deprived in all three dimensions lived in rural areas. Estimates for 2009 indicate that the incidence of deprivation was higher in education than in consumption income and water access, due to improvements in the latter. Nevertheless, fewer deprivations occurred in all dimensions in 2009.

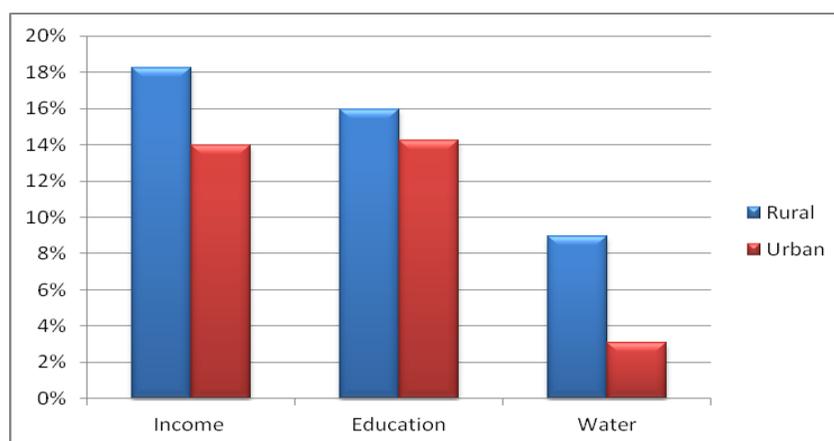


Figure 1: Headcount ratios in each dimension for rural and urban areas in 2005. Source: Authors' calculations based on HBS 2005.

As seen in Figure 2, 24% of the population in Kazakhstan lived in households where more than half of the adults lacked post-secondary education in 2009. About 11% of the population consumed less than the subsistence minimum, whereas 10% of the population had no access to safe drinking water, 90% of which were rural. In 2009, the majority of the population that was deprived in all three dimensions lived in rural areas.

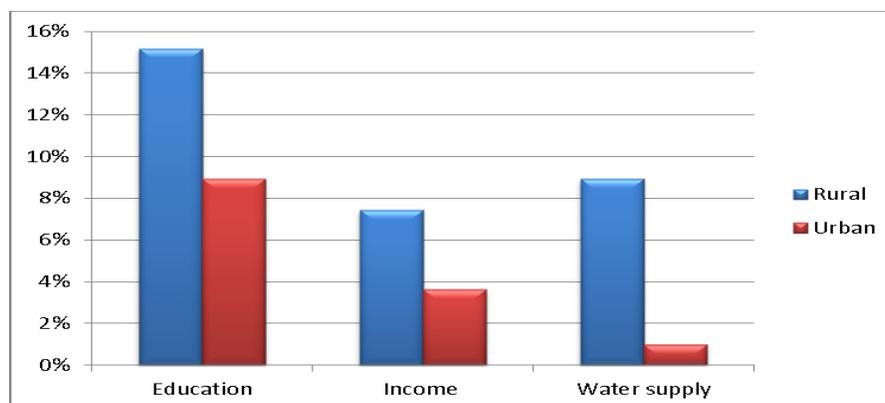


Figure 2: Headcount ratios in each dimension for rural and urban areas in 2009. Source: Authors' calculations based on HBS 2009.

To measure multidimensional poverty, this study uses the intermediate cutoff $k = 2$, since it considers a set of people that is narrow enough to be evaluated as multidimensionally deprived and broad enough to include people who, even if not deprived in all dimensions, experience deprivation in at least two thirds of them.

Table 1 presents the estimated multidimensional Headcount Ratio (H) and the Adjusted Headcount Ratio (M_0) based on different cutoffs (k) for 2005. When $k = 1$, 53% of the population is deprived in one dimension or more; the average resident is deprived in 1.4 dimensions. The intensity of poverty rises when k increases, meaning that the share of dimensions in which the household is deprived grows with k (Adeoti, 2014). When $k = 2$, 18% of the population is deprived in two or more dimensions; the average is 2.2 dimensions. A measure of the intensity of poverty, M_0 , is 0.13. The headcount ratio decreases when k increases, since this reduces the number of households that are poor (Adeoti, 2014). Finally, when $k = 3$, only 3% of the population was poor in 2005.

K	H	A	M0	Bootstrapped 95 percent confidence interval for M0
1	0.531	0.467	0.247	[0.243 0.252]
2	0.183	0.723	0.132	[0.127 0.138]
3	0.030	1	0.030	[0.028 0.033]

Table 1: Multidimensional Headcount Ratio (H) and Adjusted Headcount Ratio (M_0) in 2005. The table considers three dimensions with different k values. Source: Authors' calculations based on KHBS 2005.

K	H	A	M0	Bootstrapped 95% confidence interval for M0
1	0.363	0.413	0.150	[0.146 0.153]
2	0.079	0.698	0.055	[0.052 0.059]
3	0.007	1	0.007	[0.006 0.009]

Table 2: Multidimensional Headcount Ratio (H) and Adjusted Headcount Ratio (M_0) in 2009. The table considers three dimensions with different k values. Source: Authors' calculations based on KHBS 2009.

The situation improved in 2009 compared to 2005 (Table 2). When $k = 1$, 36% of the population was deprived in one or more dimensions, on average in 1.2 dimensions. When $k = 2$, 8% of the population was deprived in two or more dimensions, on average in 2.1 dimensions. The Adjusted Headcount Ratio was 0.06. The share of households deprived in all three dimensions was 1%. So, all measures of multidimensional poverty declined in 2009 compared to 2005.

Figure 3 shows estimates of multidimensional poverty in 2005. The overall multidimensional poverty rate is 18%. The overlap of different dimensions represents the household's deprivation in two dimensions, since the cutoff is $k = 2$; that is, we do not consider households deprived in only one dimension. The largest overlap is for education and income; 10 percent of Kazakhstan's population live in a household where more than half of the adults do not have a post-secondary education and have a consumption income below the subsistence minimum. Hence, household adults without post-secondary degrees earn lower income and are more likely to be poor.

Eight percent of the population is deprived of water supply -- basically a rural phenomenon, since the dispersion of the rural population makes drinking water expensive. The share of households deprived in two dimensions, such as education and access to water, is the same in both years, 2 percent. The overlap in the center, which is covered by all dimensions,

represents the share of households deprived in income, education and water supply. The share is small, meaning that extreme poverty is not widespread.

Figure 4 shows estimates of multidimensional poverty for 2009 using Alkire and Foster's model. The multidimensional poverty rate is 8%. The largest overlap is for education and income, indicating that 4% of Kazakhstan's population lives in a household where more than half of the adults lack post-secondary education and consumption income is less than the subsistence minimum. As in 2005, the household with adults lacking post-secondary degrees has lower consumption than other households and is more likely to be poor. Overall, multidimensional poverty decreased from 2005 to 2009, which is consistent with conventional poverty measures (Table A1).

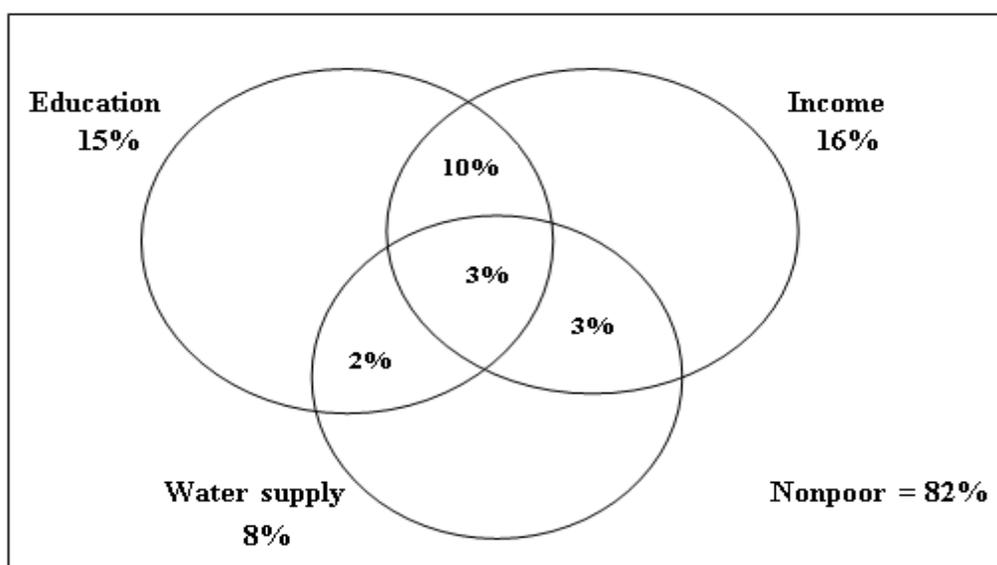


Figure 3: Multidimensional poverty in 2005 ($k = 2$). Source: Authors' calculations based on KHBS 2005.

We calculated multidimensional poverty measures for each oblast. Figures 5a and 5b present estimates for each oblast, and for rural and urban areas of each oblast, for 2005 and 2009. Poverty rates across oblasts vary significantly, from 1% to 80% in 2005 and from 1% to 69% in 2009 of the rural poor. Mangistau and Kyzylorda have the highest levels of rural poverty in both years. The variation in poverty rates among oblasts is large; but almost half of the oblasts have an incidence of poverty above 20% in 2005 and above 10% in 2009. The dynamics illustrate the decline of poverty in all regions in 2009 compared to 2005. However, in 2009 poverty was still rural.

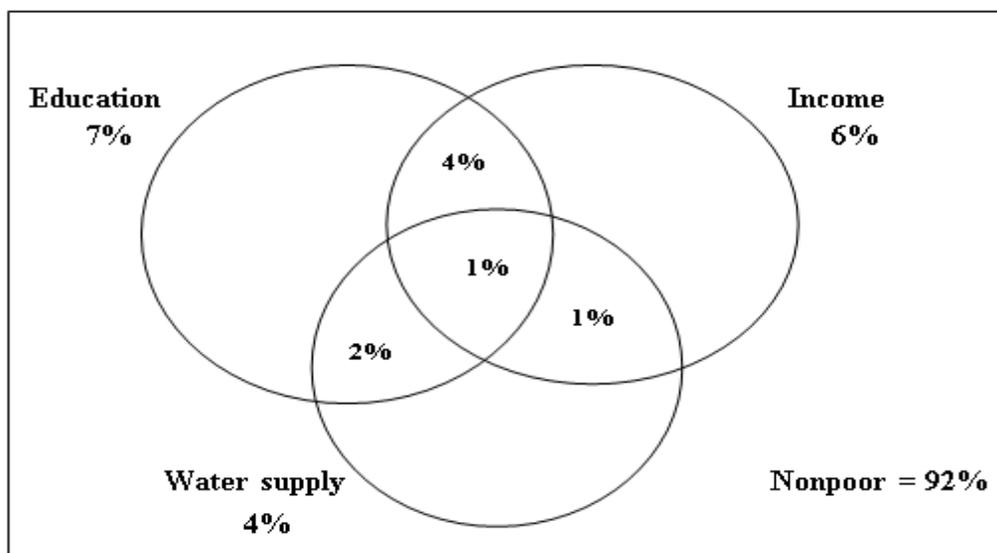


Figure 4: Multidimensional poverty in 2009 ($k = 2$). Source: Authors' calculations based on KHBS 2009.

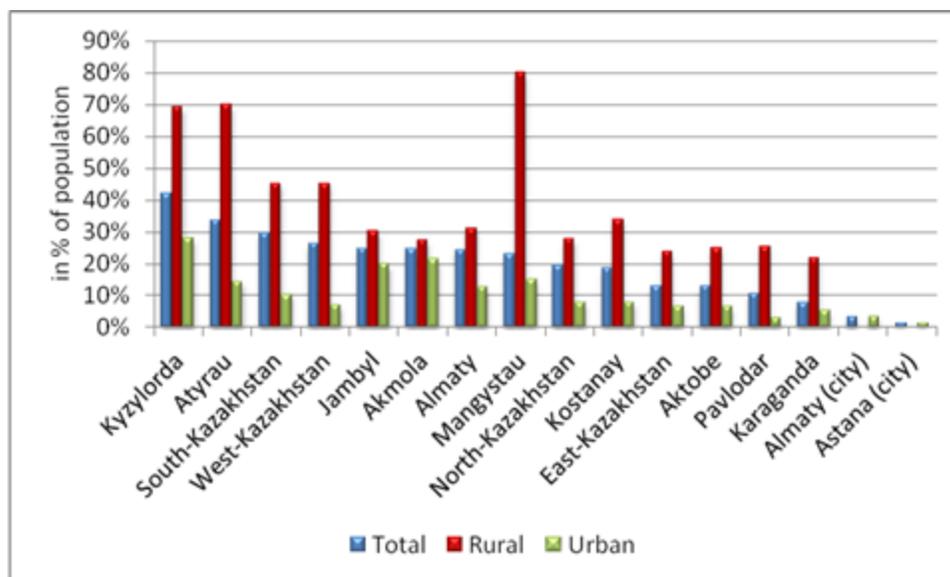


Figure 5a: Oblast multidimensional poverty rates in rural and urban areas in 2005 ($k = 2$). Source: Authors' calculations, based on KHBS 2005. Total, rural and urban rates are calculated as shares of the oblast population living in all areas, rural areas and urban areas.

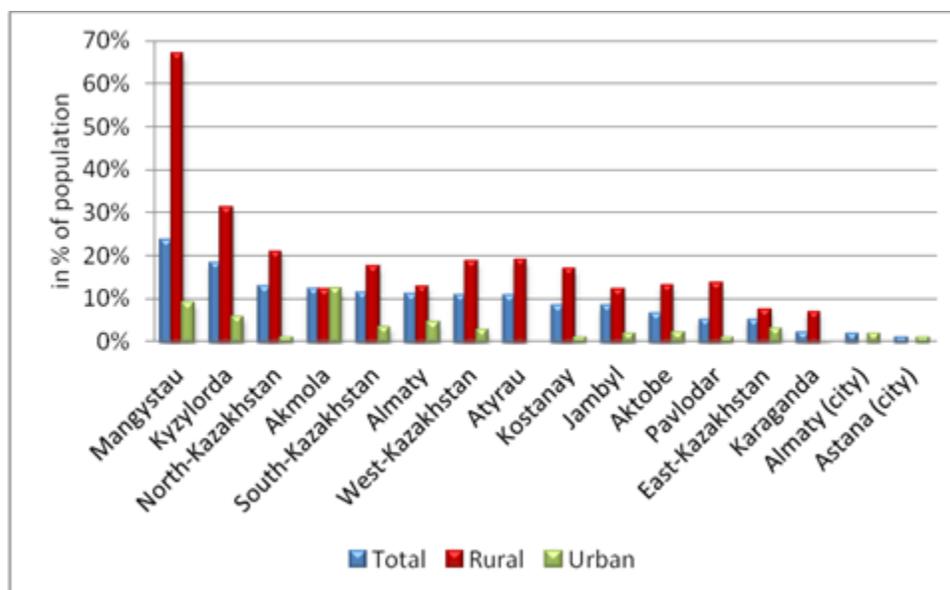


Figure 5b: Oblast multidimensional poverty rates in rural and urban areas in 2009 ($k = 2$). Source: Authors' calculations based on KHBS 2009. Total, rural and urban rates are calculated as shares of the oblast population living in all areas, rural areas and urban areas.

However, because some oblasts have larger populations than others, poverty is concentrated in them. About 30% of multidimensionally poor individuals lived in South Kazakhstan and Almaty oblasts in 2005 and around 27% in 2009 (Figures 6a and 6b).

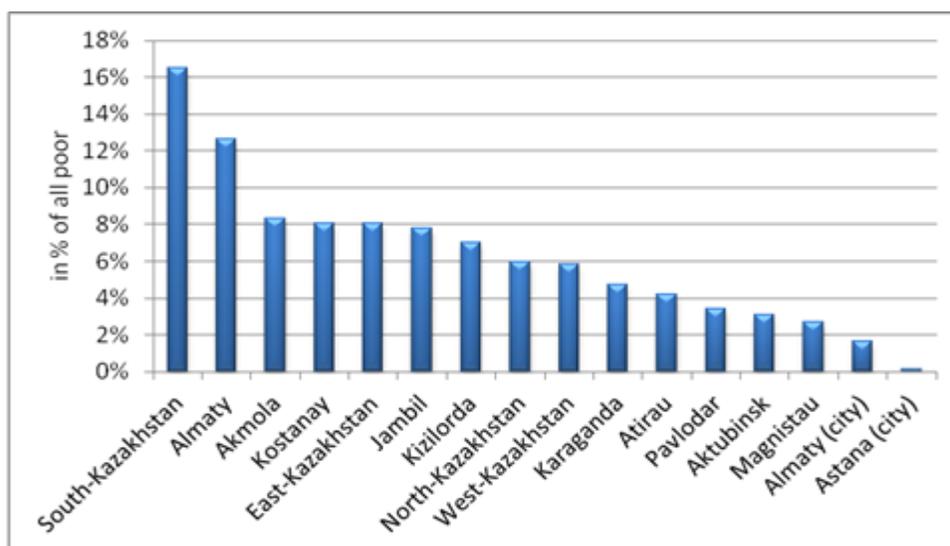


Figure 6a: Distribution of the multidimensionally poor by oblast ($k = 2$). Source: Authors' calculations based on KHBS 2005.

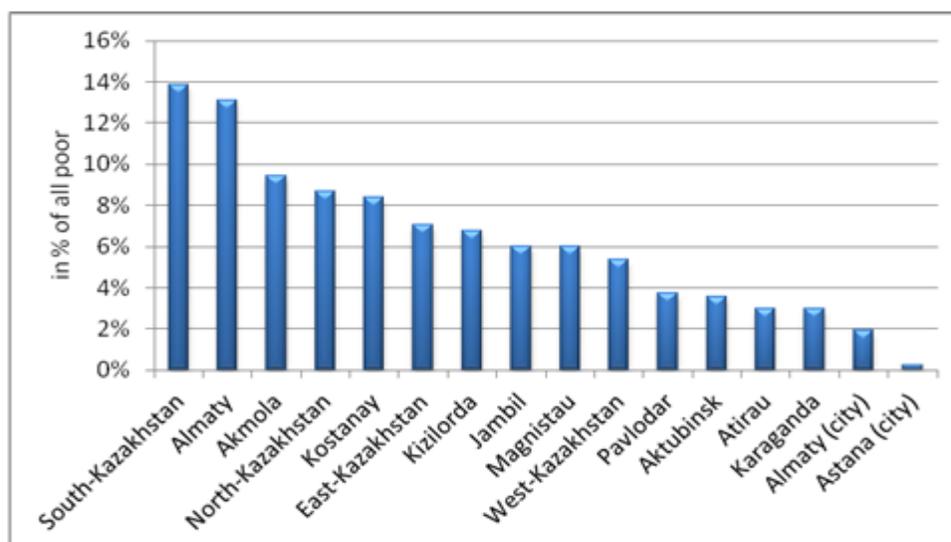


Figure 6b: Distribution of the multidimensionally poor by oblasts in 2009 ($k = 2$). Source: Authors' calculations based on KHBS 2009.

These results reinforce World Bank (2004) research on poverty in Kazakhstan in 2001-2002. The World Bank study concluded that poverty in Kazakhstan has a strong regional character, with most of the poor living in rural areas. The estimates in this study also suggest that multidimensional poverty in Kazakhstan is rural. Furthermore, almost the same oblasts as in the World Bank report have a high incidence of multidimensional poverty.

4.2 Identification of factors of multidimensional poverty

Based on a cross-sectional LSMS survey in Kazakhstan, Anderson and Pomfret (2002) study the determinants of household expenditures in 1996. They find that education, household location, ethnicity and household size were important determinants. We cannot include education as a predictor in our model due to an endogeneity problem – we included education as a deprivation measure in the multidimensional poverty index. We do control for age and gender as well as for marital, health and employment status of the head of household. The data on the head of household's health was not available for 2009.

Predictor variables	2005		2009	
	dy/dx	means	dy/dx	means
Gender of household head				
Male	measuring reference	0.440	measuring reference	0.435
Female	-0.038* (0.008)	0.559	0.0004 (0.004)	0.564
Age of household head (years)	-0.001*(0.0003)	50.26	-0.001*(0.0001)	49.66
Ethnicity of household head				
Kazakh	measuring reference	0.477	measuring reference	0.525
Russian	-0.023* (0.008)	0.375	0.007 (0.004)	0.343
Ukrainian	-0.047* (0.014)	0.052	0.004 (0.008)	0.045
Uzbek	-0.033 (0.021)	0.013	0.048* (0.022)	0.012
Tartarian	-0.046* (0.022)	0.022	-0.009 (0.012)	0.020
Uighur	0.037 (0.035)	0.009	-0.011 (0.012)	0.009
German	-0.021 (0.025)	0.016	0.027 (0.017)	0.015
Other ethnicities	-0.003 (0.019)	0.035	0.014 (0.012)	0.029
Marital status				
Married	measuring reference	0.638	measuring reference	0.641
Not married	-0.005 (0.020)	0.041	0.015 (0.009)	0.057
Divorced	0.045* (0.015)	0.112	0.015* (0.008)	0.118
Widowed	0.075* (0.013)	0.208	0.036* (0.007)	0.185
Household size	0.050* (0.002)	3.547	0.018* (0.001)	3.501
Employment (dummy variable)				
Employed household head	measuring reference	0.687	measuring reference	0.743
Unemployed household head	0.086* (0.010)	0.312	0.029* (0.006)	0.256
Health status of household head				
Very good	measuring reference	0.022		
Good	-0.052* (0.024)	0.294		
Satisfactory	-0.063* (0.024)	0.568		
Poor	-0.039* (0.027)	0.110		
Very poor	0.084 (0.073)	0.005		
Type of the settlement (dummy variable)				
Urban	measuring reference	0.624	measuring reference	0.555
Rural	0.157* (0.008)	0.375	0.086* (0.005)	0.444

Constant	-3.078* (0.219)	-4.85* (0.230)
Number of observations	11,342	11,684
LR chi ² (23)	2146.49	1,145.29
Log likelihood	-4,340.099	-2,680.294
Prob > chi ²	0.0000	0.0000
Pseudo R ²	0.1983	0.176

Table 3: The marginal effects from logit model regressions for 2005 and 2009. Source: Authors' calculations based on KHBS 2005 and 2009. Note: *Indicates statistical significance at the 5% level of significance. Standard errors are in parentheses. "Measuring reference" refers to the background variable.

In the logit models (Table 3), marginal effects indicate that for the female head of household (aged 50.26 years), and with a household size of 3.55, compared to the male head of household, the probability of being multidimensionally poor decreased by 3.8% in 2005, but it did not differ from zero with statistical significance in 2009. (In these estimates, other predictor variables are set to their mean values, a convention that we will follow for the rest of this section.) This conclusion is inconsistent with the findings that, on average, male wages in Kazakhstan are 31% higher than female wages; moreover, that females have lower chances of finding jobs. The contradiction can be explained by demographic and location factors. Female heads of households are older and less likely to have young children than are other women. Also, their households are usually smaller and more prevalent in large cities, where poverty rates are lower (World Bank, 2004).

The age of the household head relates negatively to the probability of being multidimensionally poor. In the marginal effects, a one-year increase in the age of the head of household relates to a decrease in the probability of being multidimensionally poor of 0.1% in both years and is statistically significant (Table 3). The average age of the head of household declined from 50.26 years in 2005 to 49.66 years in 2009.

Ethnicity of the household head also affects multidimensional poverty. Being Russian, Ukrainian, Uzbek, Tartarian, German or other ethnicities decreases the probability of being poor relative to the base category of being Kazakh, whereas being Uighur increases it in 2005 at the means of predictor variables. The largest decrease in the probability of being poor relative to the base category is being Ukrainian and Tartarian with the marginal effects of 0.047 and 0.046 respectively; both values are statistically significant at the 5% level (Table 3). However, ethnicity becomes less significant in 2009. Only being Uzbek increases with statistical significance the probability of being multidimensional poor relative to the base category of being Kazakh, by 4.8%.

The marital status of the household head also affects poverty. If this status changes from married to not married, the probability of being poor decreases. If the status changes from married to divorced or widowed, the probability of being poor increases. Widowed household heads are more likely to be multidimensionally poor relative to a married household head; in fact, they have the largest marginal effect, a rise in probability of 7.5% in 2005. The situation is the same in 2009 but with a smaller marginal effect. An unmarried head of household is more likely to be poor than a married one (Table 3).

Household size relates positively to poverty. The mean size is 3.55; if it had increased by

one member, its probability of poverty rose 5% in 2005 (Table 3). Results were similar in 2009. These findings were consistent with those obtained by Adeoti (2014) for multidimensional poverty as well as by Anderson and Pomfret (2002) and the World Bank (2004) for conventional poverty measures.

Unemployment of the household head significantly raised the probability of being multidimensional poor relative to the base category. Losing a job raised the likelihood of being poor by 8.6% in 2005 and by 2.9% in 2009 (Table 3). The World Bank (2004) reported that according to statistics in Kazakhstan, wages provided over 60% of total income for all rich and poor. Thus an unemployed household head is more likely to be poor.

The influence of the health of the household head varies with its intensity. A change in health from very good to very poor increases the probability of being poor by 8.4%, while a change in health from very good to satisfactory reduces the probability by 6.3%. However, the respondents themselves evaluated their health. Since each person evaluates in her own way, it is hard to draw general conclusions about the link of health to poverty when the perceived change in health is small. Also, wealthier households pay more attention to their health, since they can afford medical examinations.

Location of the household plays an important role in poverty. The estimates confirm that poverty in Kazakhstan is rural. Living in rural areas increased the probability of being poor by 15.7% in 2005 and by 8.6% in 2009 (Table 3).

In summary, gender, age, ethnicity, marital status, employment, health, household size and location (rural or urban) are statistically significant and important predictors of multidimensional poverty. Households headed by females, by older people, by the unmarried, or by people with very good health (as compared to very poor health) are less likely to be impoverished. But households headed by the widowed, by the unemployed, or by people with very poor health are more likely than others to be poor. Large or rural households are also relatively likely to be poor.

5. Conclusions

This study has estimated multidimensional poverty in Kazakhstan by applying the method developed by Alkire and Foster (2011). The dimensions were selected based on MDGs: Income (minimum level of subsistence), education (50% or more of the adults in the household have post-secondary educations), and water supply (a water pipe in the dwelling or a supply within 200 meters of the home). The KHBS for 2005 and 2009 provided data for the measurements.

Estimates suggest that 18% (cutoff $k = 2$) of the population in 2005 and 8% in 2009 were deprived in at least two of the three dimensions. Moreover, 70% in 2005 and more than 80% in 2009 of the deprived persons lived in rural areas. The level of poverty, and the deprivations in separate dimensions, declined from 2005 to 2009. But the same 2% of households were deprived in two dimensions, such as education and water supply, in both years. Decomposition of multidimensional poverty by oblast indicates that Kyzylorda, Atyrau, South Kazakhstan and Mangystau had the highest levels of poverty in 2005. In 2009, the counterparts were Mangystau, Kyzylorda and North Kazakhstan. Poverty is mainly rural.

Logistic regression identified factors that influence poverty (given the cutoff level $k = 2$). We selected as predictor variables gender, age, ethnicity, marital status, employment and health of the household head, the household size, and the type of settlement (rural or urban). It turns out that household heads who are female, advanced in years, unmarried, or healthy are less likely

than others to be poor, whereas household heads who are ill, widowed or unemployed are more likely to be poor. Households having four or more members, or living in rural areas, are relatively likely to be poor.

These results partially reinforce World Bank research on poverty in Kazakhstan in 2001-2002, which found that the majority of the poor lived in rural areas. Our study identified almost the same oblasts as being poor that the World Bank did, although the latter used conventional poverty measures. Like the World Bank, we conclude that a lack of education or jobs is a condition of poverty, as is a large household size.

This study provides a flexible methodology for measuring multidimensional poverty. The main decisions -- selecting dimensions and the poverty cutoff as well as determining dimensional cutoffs and weights -- are left to the researcher.

This study can aid allocation of the budget among oblasts, particularly in poverty reduction programs, since it identifies the poorest oblasts and the reasons for their poverty. It can also help target households that are the poorest of the poor -- i.e., those deprived in multiple dimensions.

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6. References

- Adeoti, A.I. (2014), "Trend and determinants of multidimensional poverty in rural Nigeria," *Journal of Development and Agricultural Economics*, Vol. 6, pp. 220–231
- Alkire, S., and Foster, J. (2011), "Counting and multidimensional poverty measurement," *Journal of Public Economics*, Vol. 95, pp. 476–487
- Alkire, S. and Seth, S. (2015), "Multidimensional poverty reduction in India between 1999 and 2006: Where and how?," *World Development*, Vol. 72, pp. 93-108
- Anand, S. and Sen, A. (1997), "Concepts of human development and poverty: A multidimensional perspective," United Nations Development Programme
- Anderson, K. and Pomfret, R. (2002), "Relative living standards in new market economies: Evidence from Central Asian Household Surveys," *Journal of Comparative Economics*, Vol. 30, pp. 683–708
- Atkinson, A. (1987), "On the measurement of poverty," *Econometrica*, Vol. 55, pp. 749–764
- Atkinson, A. (2003), "Multidimensional deprivation: Contrasting social welfare and counting approaches," *Journal of Economic Inequality*, Vol. 1, pp. 51–65
- Bellido, N.P., Jano, M.D., Ortega, F.J.L., Martín-Guzmán, M.P., and Toledo, M.I. (1998), "The measurement and analysis of poverty and inequality: An application to Spanish conurbations," *International Statistical Review*, Vol. 66, pp. 115–131

- Bentham, J. (1789), "*An introduction to the principles of morals and legislation*," Clarendon Press
- Bossert, W., D'Ambrosio, C., and Peragine V. (2007), "Deprivation and social exclusion," *Economica*, Vol. 74, pp. 777–803
- Bourguignon, F., and Chakravarty, S. (2003), "The measurement of multidimensional poverty," *The Journal of Economic Inequality*, Vol. 1, pp. 25–49
- Chakravarty, S. and Silber, J. (2008), "Measuring multidimensional poverty: The axiomatic approach," in N. Kakwani and J. Silber (eds.), "*Quantitative approaches to multidimensional poverty measurement*," Palgrave Macmillan
- Clark, D., and Hulme, D. (2010), "Poverty, time and vagueness: Integrating the core poverty and chronic poverty frameworks," *Cambridge Journal of Economics*, Vol. 34, pp. 347–366
- Duclos, J., and Araar, A. (2006), "*Poverty and equity: Measurement, policy and estimation with DAAD*," Springer
- Edgeworth, F.Y. (1881), "*Mathematical psychics*," Kegan Paul
- Hayati, D., Karami, E., and Slee, B. (2006), "Combining qualitative and quantitative methods in the measurement of rural poverty: The case of Iran," *Social Indicators Research*, Vol. 75, pp. 361–394
- Kakwani, N. (1980), "On a class of poverty measures," *Econometrica*, Vol. 48, pp. 437–446
- Laderchi, C.R., Saith, R., and Stewart, F. (2003), "Does it matter that we do not agree on the definition of poverty? A comparison of four approaches," *Oxford Development Studies*, Vol. 31, pp. 243–274
- Marshall, A. (1890), "*Principles of economics*," Macmillan
- Mill, J.S. (1998), "*Utilitarianism*," Oxford University Press
- Pigou, A.C. (1920), "*The economics of welfare*," Macmillan
- Pomfret, R. (2006), "*The Central Asian economies since independence*," Princeton University Press
- Ravallion, M. (1994), "Measuring social welfare with and without poverty lines," *American Economic Review*, Vol. 84, pp. 359–364
- Ravallion, M. (1996), "Issues in measuring and modelling poverty," *Economic Journal*, Vol. 106, pp. 1328–1343
- Ray, R. and Sinha, K. (2015), "Multidimensional deprivation in China, India and Vietnam: A comparative study on micro data," *Journal of Human Development and Capabilities*, Vol. 16, pp. 69–93

- Rhoe, V., Babu, S. and Reidhead, W. (2008), "An analysis of food security and poverty in Central Asia -- case study from Kazakhstan," *Journal of International Development*, Vol. 20, pp. 452–465
- Santos, M.E., and Ura, K. (2008), "Multidimensional poverty in Bhutan: Estimates and policy implications," OPHI Working Paper No 14, University of Oxford
- Sen, A. (1979), "Utilitarianism and welfarism," *Journal of Philosophy*, Vol. 76, pp. 463–489
- Thorbecke, E. (2008), "Multidimensional poverty: Conceptual and measurement issues," in N. Kakwani and J.Silber (eds.), "*Many dimensions of poverty*," Palgrave MacMillan
- Townsend, P. (1979), "*Poverty in the United Kingdom*," Penguin
- Tsui, K. (2002). "Multidimensional Poverty Indices," *Social Choice & Welfare*, Vol. 19, pp. 69–93
- United Nations (2010), "Millennium Development Goals in Kazakhstan," [http://www.undp.org/content/dam/undp/library/MDG/english/MDG Country Reports/Kazakhstan/Kazakhstan_MDGReport_2010.pdf](http://www.undp.org/content/dam/undp/library/MDG/english/MDG_Country_Reports/Kazakhstan/Kazakhstan_MDGReport_2010.pdf)
- United Nations Development Programme Kazakhstan (2004), "*Poverty in Kazakhstan: Causes and cures*," UNDP Kazakhstan
- World Bank (2004), "*Kazakhstan: Dimensions of poverty in Kazakhstan. Volume I: Policy briefing*," Poverty Reduction and Economic Management Unit: Europe and Central Asia Region

7. Appendix

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Population	46.7	44.5	37.5	33.9	31.6	18.2	12.7	12.1	8.2	6.5	5.5	3.8	2.9
Rural	59.4	58.4	53.2	47.1	45.6	24.4	18.1	15.9	12.1	10.1	8.8	6.1	4.9
Urban	36	33	24.7	23.4	20.2	13.6	6.9	8.1	4.1	3.7	2.4	1.9	1.3

Table A1: Poverty indicators for 2001-2014 in Kazakhstan. Source: World Bank, Poverty and Equity Database (2016). All three indicators are headcount ratios at the national poverty lines. The first row represents the percentage of the population; the second row, the percentage of the rural population; the third row, the percentage of the urban population.

Oblast	Rural	Urban	Total
Akmola	364	340	704
Aktobe	172	316	488
Almaty	684	397	1081
Atyrau	90	172	262
West-Kazakhstan	235	229	464
Jambyl	314	338	652
Karaganda	174	1095	1269
Kostanay	367	537	904
Kyzylorda	117	231	348
Magnystau	30	210	240
South-Kazakhstan	638	523	1161
Pavlodar	223	444	667
North-Kazakhstan	370	259	629
East-Kazakhstan	484	787	1271
Astana (city)	0	209	209
Almaty (city)	0	996	996
Kazakhstan	4262	7083	11345

Table A2: Sample size by region and by rural and urban areas in 2005.
Source: Authors' calculations based on KHBS 2005.

Oblast	Rural	Urban	Total
Akmola	436	292	728
Aktobe	208	294	502
Almaty	877	234	1111
Atyrau	149	117	266
West-Kazakhstan	237	234	471
Jambyl	420	270	690
Karaganda	321	983	1304
Kostanay	439	491	930
Kyzylorda	171	176	347
Magnystau	60	179	239
South-Kazakhstan	652	499	1151
Pavlodar	230	462	692
North-Kazakhstan	381	262	643
East-Kazakhstan	613	724	1337
Astana (city)	0	231	231
Almaty (city)	0	1042	1042
Kazakhstan	5194	6490	11684

Table A3: Sample size by region and by rural and urban areas in 2009. Source: Authors' calculations based on KHBS 2009.

Variable	Mean		
	Rural	Urban	National
Income (household's per capita monthly income)	8,975.08	13,000.37	11,488.35
Education (dummy variable)*	0.43	0.23	0.30
Water supply (dummy variable)**	0.24	0.05	0.12

Table A4: Statistical means of dimensions used in measurement of multidimensional poverty in 2005. Source: Authors' calculations based on HBS 2005. Notes: *0 if share of post-secondary educated adults more or equal to 50% of total adult members of household, 1 otherwise; **0 if household has access to drinking water pipe in dwelling or water supply source not far than 200 meters, 1 otherwise.

Variable	Mean		
	Rural	Urban	National
Consumption (household's monthly income per capita)	20,149.590	27,502.700	24,233.950
Education (dummy variable)*	0.341	0.160	0.241
Water supply (dummy variable)**	0.200	0.018	0.099

Table A5: Statistical means of dimensions used in measurement of multidimensional poverty in 2009. Source: Authors' calculations based on HBS 2009. Notes: *0 if share of post-secondary educated adults more or equal to 50% of total adult members of household, 1 otherwise; **0 if household has access to drinking water pipe in dwelling or water supply source not far than 200 meters, 1 otherwise.

Directives for response to negative social media comments:

The case of Sberbank

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Abstract: *This study analyzes responses to negative comments in social media, using the case of SB JSC Sberbank, a leading bank in Kazakhstan, and Facebook. We investigate key features of negative comments in social networks, identify categories of negative comments, and develop guidelines for responses to negative comments. We use content analysis to identify categories of the comments. We survey subscribers who left negative comments to reveal factors affecting customer satisfaction. We find that negative comments can be divided into categories previously identified by other researchers with an additional category revealed that may or may not be specific to Kazakhstan. This categorization is based on qualitative and quantitative results about corporate communication practices in Kazakhstan. This study is the first of Kazakhstani-specific negative comments that uses quantitative and qualitative techniques.*

Keywords: *Social networks, negative comments, Facebook, communication strategy, constructive, delusional, directional, trolling, devoted comments*

1. Introduction

Social media is emerging as an essential part of the marketing communication strategy of many organizations (Waters et al., 2009). Customers often use social media platforms to complain about their experience with a particular firm. Research by the Institute of Customer Service finds that “since January 2014, there has been an eight-fold increase in customer complaints made on social media” (Causon, 2015). Complaint management gains importance as an avenue to maintaining an organization’s image as well as identifying and rectifying problems with its service or product (Pallis et al., 2011). Most organizations, however, do not approach complaints and negative comments as public relations opportunities, but rather prefer to remove or ignore critical feedback (Dekay, 2012, p. 289). A host of researchers have tried to find ways to improve the responses to negative comments in a manner that will positively influence customers, improve the reputation of the company, and increase customer satisfaction and loyalty (Sparks et al., 2016; Cheng and Loi, 2014; Sparks and Bradley, 2014; Thomas et al.,

2012). But little attempt has been made to evaluate the efficiency of the manner in which Kazakhstani organizations respond to customers' complaints on social networks such as Facebook (Gordienko, 2013; Prashkevich, 2013). We know of no written guidelines on how to respond to negative comments on Facebook in any Kazakhstani company.

This study extends the literature by investigating the Sberbank branch in Almaty (the bank is headquartered in Moscow). It investigates which strategy is most effective in handling negative comments on social media for banks in Kazakhstan and can be used as a template for other organizations in other locations. This is the first study of the effectiveness of response strategies on customer satisfaction in a non-Western context. It is rational to surmise that an effective strategy will increase customer satisfaction. This study designs guidelines to help financial institutions react to negative comments in a manner that maximizes customer satisfaction.

We base our effective negative-response strategy on the dimensions developed by Liao (2007), which include making an apology, solving a problem, being courteous, providing an explanation, and replying promptly. Liao (2007) shows that these five dimensions help to retain customers who have experienced service failures. They also increase customer satisfaction, defined as "a person's feelings of pleasure or disappointment resulting from comparing a product [...] in relation to his or her expectations" (Kotler, 2000, p. 36). This study uses three parameters to measure customer satisfaction: General satisfaction with the service, willingness to do business with the company again, and willingness to recommend the service to others.

1.1 Negative comments and consumer complaint

Social media platforms have become venues for consumer commentary and reviews. Some comments inevitably are negative. Wasserman and Faust (1994) define a "negative comment" as gossip or talk criticizing something or someone. Dissatisfaction with a company's product or any other aspect of the exchange is the focal point of many complaints (Davidow and Dacin, 1997). Consumer Complaint Behavior (CCB) is defined as "a set of multiple (behavioral or non-behavioral) reactions, some or all of which are caused by dissatisfaction with [a] perceived product or service" (McQuilken and Robertson, 2011). While complaining is increasingly understood as a cognitive reaction, it is sometimes defined as an emotionally laden event (Velasquez et al., 2010, p. 533).

Factors affecting CCB are the following:

1. Situational factors such as the product's importance, time limits of services, the previous experience of the complainant (Huppertz et al., 2003, p. 136; Tronvoll, 2012), the probability of successful reimbursement, the cost of services (Mousavi and Esfidani, 2013), and the convenience of switching to another product (Kasabov and Warlow, 2010, p. 707).
2. The demographic nature of the customer factor and the firm's attitude towards the complaint (Mousavi and Esfidani, 2013).
3. The structure of the industry (Mousavi and Esfidani, 2013).
4. Product factors (Tronvoll, 2012, p. 603) such as perceived quality (Sharma et al., 2009, p. 289) or price (Hansen, 2010, p.7)

1.2 Typology of negative comments

Negative comments on social media include complaints about product quality, personnel rudeness or particular services. Customer reactions to critical incidents vary from taking no action to complaining in public or terminating the relationship with an organization. Previous studies have produced numerous CCB typologies and classifications (e.g., Crie, 2003; Singh, 1990a). Singh (1990b) creates a typology of response to four categories of complaints: Passive, voicers, irate customers' and activists. Passives take no action, while voicers complain about the company. In addition to complaining, irate customers engage in negative word of mouth or cease patronage. The most actively engaged customers, the activists, complain to third parties.

Zhannah Prashkevich (2013), a public relations practitioner in Kazakhstan, suggests a typology of four categories of on-line negative comments: Constructive, sincere delusion, directional and trolling. Constructive negative comments occur when the company did make a mistake. Sincere delusion happens when the customer believes that the company had made a mistake when in fact it had not. Directional negative comments are those that are organized by a company's competitors to harm its reputation. Trolling comments are those that are left without any reason except to provoke readers into an emotional response.

1.3 Handling negative comments

In dealing with negative social media comments, some companies delete them, some ignore them, and others respond. Negative comments might cut sales (Menon et al., 1999). Therefore, research on effective responses can benefit commercial organizations (Sparks et al., 2016; Cheng and Loi, 2014; Sparks and Bradley, 2014; Thomas et al., 2012; Davidow, 2003; and Sparks, 2001).

Menon et al. (1999) identifies four kinds of company responses: Replies with a strong argument, responses with a weak argument, "no comment" and "no comment due to litigation." The last two responses damage the company's reputation equally. Reputational effects of responses with weak arguments are much like those of "no comment" and "no comment due to litigation" responses. Menon et al. (1999) concludes that "when companies issue statements for damage control it is necessary to carefully craft a strong response."

Sparks (2001) develops two "non-recovery strategies" (denial and avoidance) and five recovery strategies (apologize, rectify, explain, invite customer input, and compensate the customer). Davidow (2003) proposes six qualities of service recovery strategies: Timeliness, facilitation, redress, apology, credibility and attentiveness.

Liao (2007) tests the effects of five strategies on customer satisfaction: Apology, problem solving, courtesy, explanations and promptness. Liao's strategies serve as a foundation for the survey questions of our study.

Cheng and Loi (2014) suggest a complaint handling method based on the elaboration likelihood model (ELM). Their study indicates that posting a response that adopts a central route to persuasion is most effective for handling negative reviews.

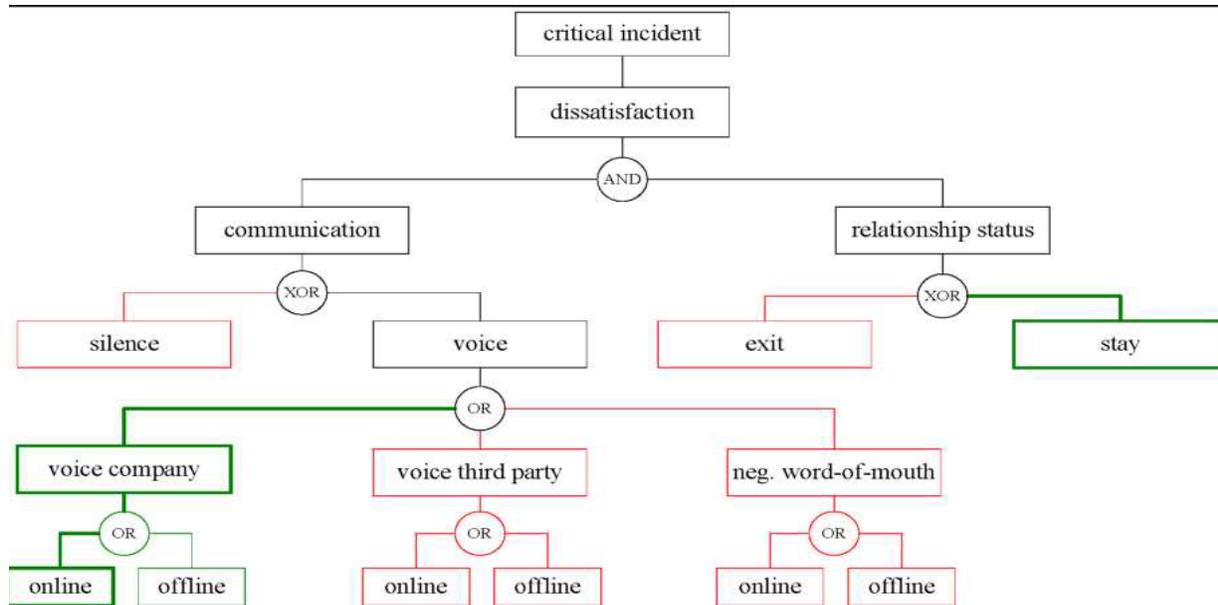


Figure 1. Optimal complaint response pattern from a corporate perspective
(Zaugg, A. (2006, p. 4).

Little research concerns online complaint behavior in Kazakhstan, although many Kazakhstani banks receive online customers' complaints (Figure 3).

Analysis of the banks for the last 5 months

#	Bank Name	Official Facebook Page (Y/N)	No. of positive comments	No. of negative comments	Positive comments %	Negative comments %	Negative comments with responses %
1.	RBS Kazakhstan	N					
2.	RBK Bank	Y	50	65	43%	57%	35%
3.	Home Credit and Finance Bank	N					
4.	ATF Bank	Y	45	58	44%	56%	20%
5.	ALFA Bank	Y	22	58	28%	73%	15%
6.	Forte Bank	Y	15	19	44%	56%	42%
7.	Punjab National Bank	N					
8.	Bank Positive Kazakhstan	Y (non-active)					
9.	Eurasian Bank	Y	34	44	44%	56%	39%
10.	HCSBK Bank	Y	56	73	43%	57%	33%
11.	Zaman Bank	N					
12.	Kazkommertzbank	Y	71	93	43%	57%	28%
13.	Kaspi Bank	Y	158	90	64%	36%	19%
14.	Kazakhstan ZIRAAT International Bank	N					
15.	KazInvestBank	Y	15	19	44%	56%	39%
16.	Chinese Bank	N					
17.	AsiaCreditBank	Y	28	36	44%	56%	35%
18.	Halyk Bank	Y	65	84	44%	56%	26%
19.	National Bank of Pakistan	N					
20.	Delta Bank	Y	33	43	43%	57%	39%
21.	Nurbank	Y	27	35	44%	56%	32%
22.	Qazaq Banki	Y	19	25	43%	57%	15%
23.	City Bank	Y	40	52	43%	57%	32%
24.	Capital Bank Kazakhstan	Y	24	31	44%	56%	28%
25.	Sberbank of Russia in KZ	Y	58	75	44%	56%	45%
26.	Chinese bank of trade and industry	N					
27.	Bank Center Credit	Y	66	86	43%	57%	26%
28.	Cesna Bank	Y	32	42	43%	57%	22%
29.	Eksim bank Kazakhstan	N					
30.	Altyn Bank	Y	18	23	44%	56%	36%
31.	Bank Astana	Y	85	40	68%	32%	29%
32.	Shinhan Bank Kazakhstan	N					
33.	Bank VTB	Y	49	64	43%	57%	31%
34.	KassaNova Bank	Y	37	48	44%	56%	28%
35.	Islamic Bank	N					

Figure 2. Content analysis of Kazakhstani banks (based on Facebook official accounts of banks)

Of the 35 banks that operate in Kazakhstan, 23 have official accounts on Facebook. This study attempts to reveal the nature of consumer complaints about Sberbank on its official Facebook page. It conducts a survey of that bank's customers who left negative comments on Sberbank's Facebook page to identify how the bank's response strategies affect customer satisfaction. Based on the findings, guidelines are developed to improve response strategies.

2. Methodology

2.1 Type of research

This study employs quantitative research methods. It conducts content analysis of the negative comments on Sberbank's Facebook account as well as the survey research among those customers who have left negative comments on Sberbank's official account.

2.2 Research strategy

The study is based on a case study method, as it takes a certain object on the basis of which the data collection and survey will be carried out. As Lee (2003) notes, the case study method is simple: The truth of the obtained knowledge is pluralistic, i.e., there is no single answer to the question, but there are a few answers that can compete on the degree of the truth.

Sberbank is the largest bank in Russia. "The bank has the largest countrywide branch network with 17 regional head offices and more than 19,000 outlets as well as subsidiary banks in Kazakhstan, Ukraine and Belarus, a branch in India, and representative offices in Germany and China" (Sberbank, 2012).

SB JSC Sberbank is the 10th largest bank of the Republic of Kazakhstan measured by the amount of authorized capital (www.sberbank.kz). Sberbank was established in Kazakhstan in 2006. The central office of Sberbank in Kazakhstan is Almaty (www.sberbank.kz).

2.3 Data collection techniques

This study consists of two phases. The first phase analyzes the content of Sberbank's Facebook page. The second phase analyzes questionnaire responses from 75 people who had left negative comments on the page from January to May 2016.

2.4 Content analysis

Sberbank uses several social channels to stay in touch with clients: Facebook, Twitter, YouTube, Instagram and Vkontakte. Based on similar web analysis studying traffic sources, 54.83% of the referrals to the main Sberbank page (www.sberbank.kz) come from Vkontakte. However, Vkontakte has only approximately 6,000 subscribers, far fewer than Facebook does. Facebook referrals comprise 6.75% of the total. This study focuses on the bank's Facebook presence because this social channel has the most subscribers for Sberbank, although referrals from it to the bank's official page are few.

Content Analysis of Sberbank Account on Facebook for January'16 - May'16

<i>Consolidated content analysis of Sberbank account on Facebook</i>							
#	Bank Name	Official Facebook Page (Y/N)	No. of positive comments	No. of negative comments	Positive comments %	Negative comments %	Negative comments with responses %
1	Sberbank of Russia in KZ	Y	58	75	44%	56%	45%

<i>Consolidated content analysis of negative comments*</i>							
#	Bank Name	No. of negative comments	Constructive	Sincere delusion	Trolling	Black PR	Ignored Comments
1	Sberbank of Russia in KZ	75	28%	32%	12%	9%	55%

Mechanics used:

1. Manual revision of more than 300 comments for the last five months (Jan-May'2016)
2. Categorize: positive, neutral, negative
3. Type investigation of negative comments: Constructive, Sincere delusion, Trolling, Black PR, Ignored
4. Percentage calculation of comments

Figure 3. Content analysis of Sberbank account on Facebook

This study employs the matrix approach to content analysis, counting how often a certain negative word or phrase occurs in 75 comments.

3. Findings of the content analysis

3.1 Types of negative comments on Sberbank's Facebook page

Analysis of the 133 comments on Sberbank's Facebook account reveals that most negative remarks can be categorized as constructive, directional, trolling, or delusional. Negative comments are sorted according to Prashkevich's (2013) typology, with descriptions of the categories listed below.

Constructive: The client is not satisfied with Sberbank's service and correctly describes all claims. Although it is negative it can help the bank by revealing weaknesses. An example is a comment by one customer: "I have left online application for 2 times but unfortunately no one ever calls me back."

Sincere Delusion: The customer sincerely believes that the bank made a mistake, but the bank followed established procedures and regulations. For example, one customer commented: "I have just cashed 30,000 tenge via Kazkom ATM. I used the Sberbank card. ATM gives out only by 10,000 tenge. For these three operations I paid commission 1,350 tenge. That's awful!" In this example, the customer thinks he is right but in fact is not. All fees and commissions are specified in the contract, which the client signs when he receives the card. Also, this information is available on the bank's web site.

Trolling: Trolling is deliberately provocative comment, which often is based on false

accusations or distorted information. Such comments provide no value to the bank, but if a reply is not provided on time, it may cause significant harm. An example of a trolling comment is, “As soon as I see Sberbank I react immediately)), and in a negative way!”

Directional: Dissatisfied feedback resembles the truth, but with little or no specific data or details. The main objective of such a comment is to harm the image of the bank. For example, consider this comment: “Sberbank did not return the money that should have been sent to (name deleted) company since March 21, 2016. Call center gives me false information every day. Sberbank, give me my money back!”

The content analysis in this study reveals an additional category of negative comments not included in Prashkevich’s typology (2013). These are comments that build on patriotic feelings, a category that we name “devoted.” In the case of Sberbank, some comments reflect pride for Kazakh traditions. Many comments suggest that it is better for Kazakhstanis to rely on Kazakh banks, not foreign banks. An example of a “devoted” comment is: “Why do your employees use St. George’s ribbon? A new type of the symbol of the Victory Day was approved in Kazakhstan, and these are blue ribbons with the Kazakh ornament.”

4. Measuring the effectiveness of Sberbank’s negative response strategy

We surveyed all subscribers who left negative comments on Sberbank’s Facebook account from January to May 2016, to find out if Sberbank’s responses to negative comments increased customer satisfaction. We conducted the survey via surveymonkey.com. The components of the effective response strategies are based on Liao (2007), which lists five dimensions and uses a seven-point scale (1 - strongly disagree, 7- strongly agree) to measure respondents’ agreement with 16 statements regarding the five dimensions.

Our survey included six statements about Sberbank’s response and three questions about customer satisfaction. It uses a five-point scale for respondent agreement. Relative to the survey in Liao (2007), our survey caters more to the characteristics of the designated population.

4.1 Results

Of 75 negative commentators, 63 subscribers were still active on Facebook at the time of the survey. Thirty-five of these users filled in the questionnaire. Table 1 (Appendix B) shows the distribution of responses. Table 2 (Appendix B) shows their means and standard deviations. None of the means differs significantly from 3, indicating that respondents overall were neither pleased nor displeased with Sberbank.

Table 3 (Appendix B) shows a correlation matrix of the variables. The correlations were strong. Only two of the 36 pairs were not significantly correlated at the 10% level of significance, and most are significant at the 1% level. This result indicates that respondents had an improved feeling toward Sberbank in one category if the bank did well in a different area; e.g., respondents felt that if the bank responded, it was more polite. This result indicates that the bank can improve its image overall by taking any of the actions.

We categorize the variables into three types: Response, action and attitude. Response refers to whether the bank responded to the negative comment and is represented by the variable Reply. The response to the statement on the survey was 1-5, with 1 being “Strongly agree” and 5 being “Strongly disagree.” We noticed, however, that all the responses were either 1 or 4 or 5, so we reconstructed the variable into a binomial with zero being “No reply” with all the respondents who put down 1 and “Reply” with all the respondents who put down 4 or 5. We named this

variable “Replylog.” The Action category describes what the bank did when it responded and includes the variables Apologize, Explain and Solved. The Attitude category describe how the bank responded and includes the variables Fast and Polite.

The first test is to determine whether responding in any way provides customer service benefits. Table 4a (Appendix B) shows the means of the three customer service responses for the sub-samples of the respondents who got a reply from the bank and of the ones who didn't; the table also shows the difference in means, which is nonzero at the 1% level of significance for all three dimensions of satisfaction. This indicates that responding to a negative comment improves customer satisfaction.³

Table 4b (Appendix B) shows the results of Tobit regressions of the three customer service variables on the binary Reply/No reply variable “Replylog.” The coefficient on this variable is significantly positive at the 1% level in two of the three regressions, supporting the results found in the difference-in-means test.

The next level of analysis is to determine which, if any, of the characteristics of the response provide benefits additional to those from just responding. We run Tobit regressions of each of the three satisfaction variables on each action variable along with the two attitude variables. These results are shown in Table 5 (Appendix B) with the panels a, b and c showing the results for answer satisfied, service satisfied, and recommend, respectively.⁴ Dependent variables were censored at lower and upper bounds of 1 and 5 respectively in each regression. Every regression model is significant at the 1% level, as can be seen from the p-values on the Wald and Likelihood Ratio test chi-squared statistics.

Overall, the most important variable appears to be Fast. It is significant at the 1% level in seven of the nine regressions. The other attitude variable, Polite, is only significant at the 10% level in one regression and at the 5% level in one regression. Of the action variables, Solved appears to be the most important. It is significant at the 1% level in one of the three regressions in which it appears and at the 5% level in another. Explained is significant at the 5% level in two of the three regressions in which it is included, and Apologize is not significant in any regression.

These results indicate that simply apologizing in response to a negative comment provides no value regarding customer satisfaction. They indicate that an explanation or a solution can potentially increase customer satisfaction and that a fast response can also increase customer satisfaction.

Table 6 (Appendix B) shows the results from the open-ended question in the survey. All comments were classified into the categories determined by previous studies but an important additional category was also found. The table shows the number and percentage of the answers that fell into each category. The percent in the new category “Devoted” is higher than in two of the previously constructed categories, indicating that this new category may be an important addition and devoted marketing may be an effective tool. It also suggests that a foreign company should take account of customs and mores of the host country to improve customer satisfaction.

The percentage in the devoted category in this study is likely to be higher than in most situations: The data were taken for a Russian bank operating in Kazakhstan, so patriotic tensions

³ In none of the regressions reported in Appendix B could we reject homoscedasticity at the 7% level of statistical significance.

⁴ We ran regressions on several combinations of the variables but do not report them all here, for the sake of brevity. Results in the other regressions were similar in magnitude and significance as these regressions; they can be furnished on demand.

could be high. It would be interesting to investigate if this category holds in other firms in Kazakhstan and in other parts of the world.

6. Guidelines

The guidelines for handling negative comments based on the results of content and survey analysis conducted in this study are very simple. Respond to negative comments quickly and try to explain and solve the problem. Responding quickly alone has customer service benefits. Solving the problem advances customer satisfaction above just responding. Respondents may also advance satisfaction by replying in a way that connects to a sense of patriotism, depending on the situation.

7. Conclusions

With the exponential growth in the use of social media by consumers, companies must be ready to manage customers' negative feedback. The first objective of this study is to investigate the effect of response to negative comments in social networks on customer satisfaction. The second purpose is to develop effective strategies to handle negative comments in social networks. The study uses both qualitative and quantitative research methods known as content analysis and survey research. Content analysis shows that most comments were in the delusional and constructive categories. Next most common is the new category proposed by this study called Devoted. This category may be expanded for sentiments reflecting the issues of a nature other than nationality, such as gender, age, profession, religion or other demographic factors. Further research is needed to determine which response strategies are most effective for each type of negative comment, especially the under-researched category of devoted comments.

This study develops guidelines for Sberbank to respond to negative comments on Facebook. The most important features are to respond, respond quickly and solve the problem. Whether these guidelines translate to other banks in Kazakhstan, other commercial organizations in Kazakhstan or banks and companies worldwide and social media other than Facebook would be the subject of further research.

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8. References

- Causon, J. (2015), "Customer complaints, made via social media on the rise," viewed 21 May, 2015, <https://www.theguardian.com/media-network/2015/may/21/customer-complaints-social-media-rise>
- Cheng, V., and Loi, M. (2014), "Handling negative online customer reviews: The effects of elaboration likelihood model and distributive justice," *Journal of Travel & Tourism Marketing*, Vol. 31(2), pp. 1-15
- Crie, D. (2003), "Consumers' complaint behavior. Taxonomy, typology and determinants," *Journal of Database Marketing and Customer Strategy Marketing*, Vol. 11(1), pp. 60-79
- Davidow, M. (2003), "Organizational responses to customer complaints: What works and what doesn't," *Journal of Service Research*, Vol. 5(3), pp. 225-250
- Davidow, M., and Dacin, P. (1997), "Understanding and influencing consumer complaint behavior: Improving organizational complaint management," *Association for Consumer Research*, Vol. 24, pp. 450-456
- Dekay, S. H. (2012), "How large companies react to negative Facebook comments," *Corporate Communications: An International Journal*, Vol. 17(3), pp. 289 – 299
- Gordienko, D. (2013), "Social sites will rise and cheapen," viewed 10 November, 2015, www.kursiv.kz/dopolnitelnye-razdely/tendencii-weekly/socseti-podrastut-i-podesheveyut
- Hansen, S. (1997), "Power as a predictor of industrial complaining styles in a buyer/seller relationship: The buyer's perspective," *Journal of Business & Industrial Marketing*, Vol. 12(2), pp. 134-148
- Huppertz, J. (2003), "An effort model of first-stage complaining behavior," *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, Vol. 16, pp.132-44
- Kasabov, E., Warlow, A. (2010), "Towards a new model of 'customer compliance' service provision," *European Journal of Marketing*, Vol. 44(6), pp. 700-729
- Kotler, P. (2000), "*Marketing management Millennium Edition*," 10th edition, Pearson Custom Publishing
- Lee, A., (2003), "Generalizing generalizability in information systems research." *Information Systems Research*, Vol. 14(3), pp. 221–243
- Liao, H. (2007), "Do it right this time: The role of employee service recovery performance in customer perceived justice and customer loyalty after service failures," *Journal of Applied Psychology*, Vol. 92(2), pp. 475-489
- Menon, G., Jewell, D., and Unnava, R. (1999), "When a company does not respond to negative

- publicity: Cognitive elaboration vs. negative affect perspective,” *Advances in Consumer Research*, Vol. 26, pp. 325-329
- McQuilken, L., and Robertson, N. (2011), “The influence of guarantees, active requests to voice and failure severity on customer complaint behavior,” *International Journal of Hospitality Management*, Vol. 30(4), pp. 953-962
- Mousavi, M., and Esfidani, M.R. (2013), “A comprehensive model of customers’ complaint behavior,” *International Journal of Academic Research in Business and Social Sciences*, Vol. 3(5), p. 548 - 558
- N.A. (2012), “Sberbank: SB JSC Sberbank (Kazakhstan) named the best transnational corporate,” viewed 6 March, 2016, <http://kazworld.info/?p=20132>
- Pallis, G., Demetrios, Y., and Mario, D. (2011), “Online social networks: Status and trends. New directions in web data management,” *Studies in Computational Intelligence*, Vol. 331, pp. 213-234
- Prashkevich, Z. (2013), “Types of negative comments,” viewed 1 February, 2015, <http://prashkevich.com/>
- Sharma, P., Rajiv, M., and Abhinav, D. (2009), “Exploring customer reactions to offshore call centers: Toward a comprehensive conceptual framework,” *Journal of Services Marketing*, Vol. 23(5), pp. 289–300
- Singh, J. (1990a), “Voice, exit, and negative word-of-mouth behaviors: An investigation across three service categories,” *Journal of the Academy of Marketing Science*, Vol. 18(1), pp. 1-15
- Singh, J. (1990b), “A typology of consumer dissatisfaction response styles,” *Journal of Retailing*, Vol. 66, pp. 57-99
- Sparks, B. (2001), “Justice strategy options for increased customer satisfaction in a services recovery setting,” *Journal of Business Research*, Vol. 54(3), pp. 209-218
- Sparks, B. A., and Bradley, G. L. (2014), “A ‘Triple A’ typology of responding to negative consumer-generated online reviews,” *Journal of Hospitality & Tourism Research*, Vol. 24, pp. 473-490
- Sparks, B.A., So, K. K. F., and Bradley, G. L. (2016), “Responding to negative online reviews: The effects of hotel responses on customer inferences of trust and concern,” *Tourism Management*, Vol. 53, pp. 74-85
- Thomas, J.B., Peters, O.C., Howell, E.G., and Robbins, K. (2012), “Social media and negative word of mouth: Strategies for handling unexpected comments,” *Atlantic Marketing Journal*, Vol. 1(2), pp. 16-24

Tronvoll, B. (2012), “A dynamic model of customer complaining behavior from the perspective of service-dominant logic,” *European Journal of Marketing*, Vol. 46(1/2), pp. 1-22

Velasquez, B.M., Fuentes, B., Gil, S., and Berenguer, B. (2010), “The moderator effect of previous customer experience of the restaurant,” *Journal of Services Marketing*, Vol. 24(7), pp. 532–545

Wasserman, S., and Faust, K. (1994), “*Social network analysis: Methods and applications*,” Cambridge University Press

Waters, R., Burnett, E., Lamm, A., and Lucas, J. (2009), “Engaging stakeholders through social networking: How nonprofit organizations are using Facebook,” *Public Relations Review*, Vol. 35, pp. 102-106

Zaugg, A. (2006), “Channel specific consumer complaint behaviour: The case of online complaining,” viewed 4 April, 2016, <http://boris.unibe.ch/58062/1/AB183.pdf>

9. Appendix A

9.1 Respondents' answers to an open-ended question

1. продолжайте в том же духе, молодцы
2. ну ооочень долго мне отвечали! я уже и забыл, что жалобу накатал=)
3. если обещаете человеку вернуться к его проблеме, то и делайте это! мне ответили, что вернуться к моей проблеме но так этого и не сделали! Обидно даже как-то!
4. на мою vzglyad - vajno obyasnuyat' ro4emu vznikla problema u klienta I kak ee reshit'
5. Быстрее отвечать на запросы и жалобы быть честными с пользователями и стараться максимально решать их возникшие проблемы
6. ооооочень долго мне отвечали! нужно отвечать быстрее и действительно помогать своим клиентам!
7. что я могу советовать, если мой комментарий тупо проигнорировали?
8. ну вот моя проблема с картой точно не была решена! пришлось идти в отделение и тратить кучу времени
9. отвечать быстрее (!) отвечать на все комментарии придумывать более оригинальные и интересные ответы, а не как под копирку
10. нанять новых смм-менеджеров, которые понимают в том, как вести социальные сети!
11. отвечать на все комментарии)
12. я целую неделю ждал ответ, потом мне написали, что со мною свяжутся и вот до сих пор связываются))
13. предлагаю давать более разнообразные ответы пользователям
14. красиво говорите, но проблему то при этом не решаете! мой совет - меньше красивых слов, а больше дела! больше концентрации на помощи в решении проблем.
15. вообще удалите страницу! все равно толку от нее ноль!

16. В целом, все очень хорошо, но я бы ещё посоветовала реже отвечать шаблонными комментариями. Все же лучше индивидуально подходить к проблеме каждого пользователя!)))
17. otstoy!!
18. Если они также работают, как отвечают в Facebook, то это банк обречен на провал!
19. долго отвечали ! и в итоге спустя сто лет ответили и что толку? мой вопрос никак не был решен!
20. мне понравился ответ, который мне предоставили! очень быстро и вежливо! мне было приятно
21. Сбер - отстой! фейсбук их только реклама, никакой коммуникации с пользователями!
22. мой вопрос вообще проигнорили!!

9.2 Survey dataset

respondent #	reply	apologize	solved	polite	explained	fast	ans_satisf	serv_satisf	recommend
2	4	2	4	4	2	4	2	2	2
3	5	4	4	5	5	4	4	4	4
4	4	4	4	5	5	4	4	4	4
5	4	4	1	3	3	2	3	2	2
6	5	1	1	3	2	2	2	2	2
7	4	2	1	3	2	2	2	2	2
8	4	4	4	5	4	4	5	5	5
9	1	1	1	1	1	1	1	1	1
10	4	4	1	4	4	2	2	2	1
11	5	4	3	4	2	4	2	2	2
12	5	5	5	4	4	5	5	5	5
13	4	4	2	2	2	2	2	2	1
14	4	4	1	3	3	3	3	2	3
15	1	1	1	1	1	1	1	1	1
16	4	4	4	5	3	4	4	5	5
17	5	4	2	2	1	2	2	2	1
18	4	3	2	2	1	2	2	2	1
19	4	3	3	3	1	2	2	2	3
20	5	4	1	3	3	3	3	2	3
21	4	4	1	3	3	2	3	1	1
22	5	1	1	1	1	1	1	1	1
23	4	4	4	5	4	4	5	5	5
24	4	4	1	3	3	2	3	2	2
25	1	1	1	1	1	1	1	1	1
26	4	4	1	4	4	2	2	2	1
27	5	2	1	3	2	2	2	2	2
28	5	4	3	4	2	4	2	2	2
29	4	5	5	4	4	5	5	5	4
30	4	4	2	2	3	2	2	2	1
31	5	5	1	4	4	3	2	3	1
32	4	4	3	4	4	1	1	2	2
33	4	4	4	4	5	4	4	5	5
34	4	3	3	1	2	2	2	2	2
35	4	3	1	3	4	2	2	2	1

10. Appendix B

Question Type	Question	Percent who responded:				
		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
Response	1	11.43	0.00	0.00	37.14	31.43
Action	2	17.14	11.43	11.43	51.43	8.57
Action	3	51.43	11.43	14.29	17.14	5.71
Attitude	4	17.14	11.43	31.43	28.57	11.43
Action	5	22.86	25.71	20.00	25.71	5.71
Attitude	6	17.14	42.86	8.57	22.86	8.57
Satisfaction	7	17.14	48.57	14.29	8.37	11.43
Satisfaction	8	17.14	57.14	5.71	2.86	17.14
Satisfaction	9	37.14	37.14	5.71	5.71	14.29

Table 1: Survey answer distributions

Table 1 shows the distribution of responses to the indicated questions of the 35 people who left negative comments on Sberbank's Facebook site and responded to the questionnaire. Survey respondents rated their agreement with each statement on a scale of 1 to 5 with 1 being "strongly disagree" and 5 being "strongly agree." Questions are listed below the table

Questions:

1. I received a response to my comment/complaint from Sberbank representative.
2. In response to my comment Sberbank representatives apologized about the inconvenience with which I had to face.
3. After I left a comment/complaint on the Sberbank's page, my problem was solved by the representatives of the bank.
4. The answer given by Sberbank representatives was polite.
5. In response to my comment/complaint Sberbank representatives explained to me why the situation that caused my discontent/indignation occurred.
6. Sberbank representatives responded to my comment/complaint within one hour.
7. Overall, I am satisfied with the answer I received from Sberbank representatives.
8. In general, I am satisfied with the level of service in Sberbank.
9. I would recommend Sberbank to my friends and family.

Variable	N	Mean	Standard deviation
Reply	35	3.94	1.16
Apologized	35	3.29	1.27
Solved	35	2.29	1.39
Polite	35	3.11	1.30
Explained	35	2.74	1.31
Fast	35	2.60	1.22
Ans_satisf	35	2.54	1.24
Serv_satisf	35	2.49	1.34
Recommend	35	2.29	1.45

Table 2: Univariate statistics

Table 2 shows mean values of the responses to all survey statements. Survey respondents rated their agreement with each statement on a scale of 1 to 5, with 1 being “Strongly disagree” and 5 being “Strongly agree.”

Pearson Correlation Coefficients									
	Reply	Apologize	Solved	Polite	Explained	Fast	Ans_satisf	Serv_satisf	Recommend
Reply		0.568 ^a (0.000)	0.262 (0.128)	0.530 ^a (0.001)	0.376 ^b (0.026)	0.482 ^a (0.003)	0.368 ^b (0.030)	0.340 ^b (0.045)	0.273 (0.113)
Apologize	0.568 ^a (0.000)		0.459 ^a (0.006)	0.654 ^a (0.000)	0.696 ^a (0.000)	0.626 ^a (0.000)	0.641 ^a (0.000)	0.590 ^a (0.000)	0.433 ^a (0.009)
Solved	0.262 (0.128)	0.459 ^a (0.006)		0.601 ^a (0.000)	0.434 ^a (0.009)	0.800 ^a (0.000)	0.689 ^a (0.000)	0.806 ^a (0.000)	0.783 ^a (0.000)
Polite	0.530 ^a (0.001)	0.654 ^a (0.000)	0.601 ^a (0.000)		0.775 ^a (0.000)	0.772 ^a (0.000)	0.705 ^a (0.000)	0.745 ^a (0.000)	0.685 ^a (0.000)
Explained	0.376 ^b (0.026)	0.696 ^a (0.000)	0.434 ^a (0.009)	0.775 ^a (0.000)		0.577 ^a (0.000)	0.681 ^a (0.000)	0.693 ^a (0.000)	0.566 ^a (0.000)
Fast	0.482 ^a (0.003)	0.626 ^a (0.000)	0.800 ^a (0.000)	0.772 ^a (0.000)	0.577 ^a (0.000)		0.827 ^a (0.000)	0.828 ^a (0.000)	0.785 ^a (0.000)
Ans_satisf	0.368 ^b (0.030)	0.641 ^a (0.000)	0.689 ^a (0.000)	0.705 ^a (0.000)	0.681 ^a (0.000)	0.827 ^a (0.000)		0.897 ^a (0.000)	0.875 ^a (0.000)
Serv_satisf	0.340 ^b (0.045)	0.590 ^a (0.000)	0.806 ^a (0.000)	0.745 ^a (0.000)	0.693 ^a (0.000)	0.828 (0.000)	0.897 ^a (0.000)		0.900 ^a (0.000)
Recommend	0.273 (0.113)	0.433 ^a (0.009)	0.783 ^a (0.000)	0.685 ^a (0.000)	0.566 ^a (0.000)	0.785 ^a (0.000)	0.875 ^a (0.000)	0.900 ^a (0.000)	

Table 3: Correlation matrix

Table 3 shows the correlation between all variables. Survey respondents rated their agreement with each statement on a scale of 1 to 5, with 1 being “Strongly disagree” and 5 being “Strongly agree.” The table shows the correlation coefficient between each pair of variables with p-values in parentheses; a, b, and c indicate significance at the 1, 5 and 10 percent levels respectively.

Variable	Reply	No reply	Difference
Ans_satis	2.742	1.000	1.742 ^a (0.000)
Serv_satisf	2.678	1.000	1.68 ^a (0.000)
Recommend	2.452	1.000	1.45 ^a (0.000)

Table 4a: Results on replying

Table 4a shows the results of the test on whether replying provides greater customer satisfaction than not replying. Satisfaction variables are on a scale from 1 to 5 with 1 being “Strongly disagree” and 5 being “Strongly agree.” The p-value on the difference in the satisfaction variable is in parentheses; a, b and c indicate significance at the 1, 5 and 10 percent level respectively.

Variable	Dependent Variable		
	Ans_satisf	Serv_satisf	Recommend
Constant	-8.457	-9.653	-12.694
Replylog	11.323 ^a (0.000)	12.425 ^a (0.000)	14.809 (0.989)
N	35	35	35
Σ	1.410	1.675	2.554
Wald χ^2	7748 ^a (0.000)	6482 ^a (0.000)	0.00 (0.989)
Likelihood Ratio χ^2	15.52 ^a (0.000)	13.55 ^a (0.000)	7.99 (0.005)

Table 4b: Results on replying

Table 4b shows the results of Tobit regressions of the three satisfaction variables on the variable describing whether Sberbank responded or not (Replylog). Satisfaction variables are survey results on a scale of 1 to 5 with 1 being “Strongly disagree” and 5 being “Strongly agree.” The regressor variable is 0 or 1 based on the analysis of a 1-to-5 scale variable that the bank either replied or didn’t. The dependent variable is censored at a lower and upper bound of 0 and 1 respectively. The result is the coefficient on the regressor variable. N is the number of observations, σ is the standard error of the regression, and the Wald and Likelihood Ratio χ^2 s are test statistics of model significance. The p-values in parentheses are for the null hypothesis that the coefficient in the population equals zero; a, b and c indicate significance at the 1, 5 and 10 percent levels respectively.

Independent Variables	Regression 1	Regression 2	Regression 3
Constant	-0.715	-0.237	-0.088
Apologized	0.270 (0.216)		
Explained		0.381 ^b (0.018)	
Solved			0.056 (0.760)
Polite	0.069 (0.730)	-0.196 (0.390)	0.112 (0.586)
Fast	0.811 ^a (0.000)	0.904 ^a (0.000)	0.904 ^a (0.000)
N	31	31	31
Σ	0.821	0.770	0.851
Wald χ^2	44.71 ^a (0.000)	53.29 ^a (0.000)	41.55 ^a (0.000)
Likelihood Ratio χ^2	31.72 ^a (0.000)	34.50 ^a (0.000)	29.51 ^a (0.000)

Table 5a: Regression results for dependent variable “Answer satisfied”

Table 5a shows the results of Tobit regressions of the satisfaction variable “Ans_satisf” on the action variables along with the two attitude variables describing Sberbank’s response. Satisfaction variables are the survey responses on a scale of 1 to 5, with 1 being “Strongly disagree” and 5 being “Strongly agree.” The dependent variable is censored at a lower and upper bound of 1 and 5 respectively. The results are the coefficients on the regressor variables. N is the number of observations, σ is the standard error of the regression, and the Wald and Likelihood Ratio χ^2 s are test statistics of model significance. The p-values are in parentheses below each coefficient; a, b and c indicate significance at the 1%, 5% and 10% levels respectively.

Independent Variables	Regression 1	Regression 2	Regression 3
Constant	-1.412	-1.044	-0.721
Apologized	0.209 (0.300)		
Explained		0.389 ^b (0.036)	
Solved			0.460 ^a (0.009)
Polite	0.340 (0.129)	0.044 (0.863)	0.359 ^b (0.359)
Fast	0.801 ^a (0.000)	0.884 ^a (0.000)	0.410 (0.110)
N	31	31	31
Σ	0.929	0.866	0.840
Wald χ^2	45.11 ^a (0.000)	53.50 ^a (0.000)	57.90 ^a (0.000)
Likelihood Ratio χ^2	32.21 ^a (0.000)	35.24 ^a (0.000)	37.38 ^a (0.000)

Table 5b: Regression results for dependent variable “Service satisfied”

Table 5b shows the results of Tobit regressions of the satisfaction variable “Serv_satisf” on the action variables along with the two attitude variables describing Sberbank’s response. Satisfaction variables are the survey responses on a scale of 1 to 5, with 1 being “Strongly disagree” and 5 being “Strongly agree.” The dependent variable is censored at a lower and upper bound of 1 and 5 respectively. The results are the coefficients on the regressor variables. N is the number of observations, σ is the standard error of the regression, and the Wald and Likelihood Ratio χ^2 s are test statistics of model significance. The p-values are in parentheses below each coefficient; a, b and c indicate significance at the 1%, 5% and 10% levels respectively.

Independent Variables	Regression 1	Regression 2	Regression 3
Constant	-2.179	-2.861	-2.365
Apologized	-0.293 (0.387)		
Explained		0.098 (0.770)	
Solved			0.602 ^b (0.044)
Polite	0.654 ^c (0.964)	0.526 (0.264)	0.526 (0.136)
Fast	1.141 ^a (0.003)	1.065 ^a (0.003)	0.491 (0.241)
n	31	31	31
σ	1.501	1.500	1.371
Wald χ^2	25.90 ^a (0.000)	25.61 ^a (0.000)	31.32 ^a (0.000)
Likelihood Ratio χ^2	24.11 ^a (0.000)	23.44 ^a (0.000)	27.27 ^a (0.000)

Table 5c: Regression results for dependent variable “Recommend”

Table 5c shows the results of Tobit regressions of the satisfaction variable “Recommend” on the action variables along with the two attitude variables describing Sberbank’s response. Satisfaction variables are the survey responses on a scale of 1 to 5, with 1 being “Strongly disagree” and 5 being “Strongly agree.” The dependent variable is censored at a lower and upper bound of 1 and 5 respectively. The results are the coefficients on the regressor variables. N is the number of observations, σ is the standard error of the regression, and the Wald and Likelihood Ratio χ^2 s are test statistics of model significance. The p-values are in parentheses below each coefficient; a, b and c indicate significance at the 1%, 5% and 10% levels respectively.

Category	Number	Percent
Constructive	10	28%
Sincere delusional	11	32%
Trolling	4	12%
Directional	3	9%
Devoted	7	19%

Table 6: Qualitative answers

Table 6 shows the distribution of categories of the answers to the open-ended question in the survey. The number and percent in each of the previously noted categories (Constructive, Sincere delusional, Trolling and Directional) are presented along with the new category Devoted.

Primary factors affecting labor supply of retired people in Kazakhstan

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Abstract: *This paper evaluates the probability of employment of Kazakhstanis eligible for retirement; they decide whether to keep working or to quit. The dataset consists of 237 participants in the Life in Transition Survey. Unexpectedly, in probit estimates, health, education and marital status do not have statistically significant effects on the retirement decision in Kazakhstan, unlike retirement in the West.*

Keywords: *Retirement incentives, pension benefits, aging population, employment, tax burden*

1. Introduction

Many countries worry that an aging population may produce more retirees than employees can support. Kazakhstan is no exception. Life expectancy in Kazakhstan has changed positively since 1995: Women live longer by 5.9 years and men by 8.6 years (World Bank, 2014a and 2014b). The increase in life expectancy implies more years spent in retirement; those without savings must rely on retirement benefits from the government. In turn, this weakens the budget of the State Pension Fund and increases labor taxes. Living standards may fall.

To prolong employment of the elderly, the government wants to identify incentives affecting the decision to retire. For example, if people retire because of illness, the government could introduce health insurance for aged workers. Or if the poorly educated retire early, the government could offer training.

In 2013, about 190,000 retirees worked, entitling them to receive retirement benefits at the same time as their salaries, based on Kazakhstani labor laws (KazTAG, 2013). Such labor might improve the financial balance of the State Pension Fund. Also, higher income enables retirees to spend more, which may stimulate the economy during downturns.

This paper evaluates the probability that older Kazakhstanis will continue to work, in response to gender, marital status, health, education, and the presence of grandchildren. Here is the paper's structure: Part 2 discusses the nation's pension system and recent changes in policy. Part 3 reviews work on retirement incentives. Part 4 details the binary response model, estimated on data from the Life in Transition Survey. Part 5 presents the model's results and interprets its marginal response coefficients. Part 6 concludes and offers suggestions for research.

1.1 The pension system in Kazakhstan

This system has three levels -- social, accumulative mandatory, and voluntary. The first level is a "pay as you go" system introduced after the collapse of the USSR. The main source of pension payments is the government budget, financed by general taxes. The second level is a system of mandatory pension contributions (a funded pension system), where a fixed charge of 10% is levied on the salary of citizens and foreigners living permanently in Kazakhstan. The third level is a system of voluntary pension contributions. In 2014, the government channeled all assets of nine pension funds to the Single Pension Fund, with procedures and new investment strategies to be controlled by the government and the National Bank. The main reason stated for

this reallocation was investment inefficiency. Officials believed that a new investment strategy would improve the situation.

Beginning in July 2001, retirement benefits were distributed to women aged 58 or older with at least 20 years of work experience, and to men aged 63 or older with at least 25 years of work experience, according to the pension provision law (Unified National Pension Fund, 2008, Article 11). Exempted were people who had lived in zones of great radiation risk in the period 1949-63 but who had complied for less than five years with a law protecting victims of nuclear tests in Semipalatinsk. This exemption covers women aged 45 or older with at least 20 years of experience, and men aged 50 or older with at least 25 years of experience.

Another special case consists of women with at least five children, all of them older than eight. They may retire at age 53. The last special case concerns military and public service workers. Their retirement age is not officially published, but the special cases hold for those who retired before April 2, 2013, when Parliament began considering pension law.

Under the law, a worker could expect an increase in pension payments in 2017 because of a pay raise. This could apply to a retiree who is thinking of going back to work.

To be able to pay benefits, the government would raise the retirement age for women to 63 by 2027. Europe faces a similar situation: An increase in life expectancy burdens pension systems. National governments adjust their welfare policies to stimulate people to work longer, but suitable jobs are scarce.

2. Literature review

Many studies identify factors affecting the decision to retire at the usual age.

Gruber and Wise (1999) discussed labor force participation. The population share of workers is declining, pressuring social security systems around the world. The age at which a person can get benefits correlates strongly with her decision to leave the labor force. The social security system reduces participation rates in the labor force at old age, which in turn diminishes labor productivity. The decision to keep working may depend on health, family circumstances, work incentives and financial incentives.

According to Farrer (2014), poor health can induce retirement more powerfully than financial variables can. Of respondents aged 55-59, male and female, 35% perceived poor health as important to the retirement decision. Moreover, people aged 50 or older who spent much money on health and health insurance viewed illness as crucial to the retirement decision (Gruber and Madrian, 1995). The impact of health insurance on the retirement decision was analyzed by observing federal mandates that allowed one to buy such insurance for a while from a previous employer. Increasing this period by one year raised the rate of retirement by 20%.

Financial factors also influenced the decision to retire. Among these are wages and salaries, household income, and wealth which includes benefits. Gordy (2006) suggested that *ceteris paribus* salary relates negatively to the probability of retiring. Lusardi and Mitchell (2007) reported that old workers did not understand financial and investment principles well enough to make the optimal decision about retirement. Many companies offer employees financial seminars and retirement planning programs. Employees who mistakenly thought that full social security benefits could be received at an early age planned to retire earlier than those who were informed correctly (Clark et al., 2012). As workers learned more about finance, they revised retirement plans.

Family circumstances may also shape the decision to retire (Coile, 2003). Pertinent are the health, income and retirement status of both the decision-maker and the spouse. Married

couples enjoy spending time together, so each spouse considers the other's value of leisure. If one spouse is retired, the probability rises that the other will retire, too. The National Institute of Aging reported a survey, covering more than 20,000 Americans, in which workers eligible for retirement were less likely to leave their jobs if their spouses worked. But if a person retired due to illness, her spouse was less likely to retire (Farrer, 2014). Gurley-Calvez and Hill (2011) found that married couples were more likely to leave the workforce than single individuals. Those with a retired spouse were more likely to retire, too.

Henkens and Kalmijn (2005) analyzed exits from the labor force based on data of retirees in the period 1979-99 in the Netherlands. They observed a significant trend of early exits starting in the late 1970s and found that an ill-educated person started work early and intended to retire early. Perhaps the ill-educated lack attractive work incentives near retirement age. The authors' main conclusion was that the less-educated were much more likely to quit work for reasons of disability or chronic unemployment than were the more-educated.

In accordance with human capital theory (Becker, 1975), factors predicting the retirement decision also predicted the behavior of retirees. Investment of adults in education was matched by an anticipated increase in their income and welfare. To earn a return on the investment, people would go to work, accumulating wealth and pension benefits. So, they could retire earlier than those who did not invest. But it was not clear that they *would* retire earlier. On one hand, they had higher salaries and thus more incentive to keep working; on the other hand, they had greater wealth and hence the desire and the ability to retire earlier.

To sum up, many factors influence the retirement decision. Weak health and health insurance are relevant. And spouses decide jointly whether to retire; they are more likely to stop working than are single persons. Education has ambiguous effects: Highly educated people are more likely to stay in the labor force, to earn higher wages; on the other hand, they can also save enough to retire early. This paper will examine the impact of health, education and marital status on the retirement decision of Kazakhstanis, which the literature has not addressed.

3. Model specification

My model is based on that of Gustman and Steinmeier (2005), modified by Gordy (2006). The employee maximizes her lifetime utility function, which depends on leisure and consumption. If she decides to retire, the model will equate her amount of leisure to one. If she decides to work further, leisure will equal zero.

She maximizes

$$U = \sum_{t=0}^T \left[\frac{1}{\alpha} C_t^\alpha + X_t L_t \right] \quad (\text{Equation 1})$$

subject to this rule of asset accumulation:

$$A_t = A_{t-1} + S_t(1 - L_t) + B_t - C_t \quad (\text{Equation 2})$$

where C_t is consumption in the current period. L_t is leisure, equaling zero or one. X_t is the vector of variables that describe the valuation of leisure, including age, marital status, level of education, work and health status. S_t is net salary. B_t is retirement benefits or pension payments. A_t is accumulated assets. It can be assumed that the person starts with no assets. Equation 2 says that one's current assets consist of past assets plus current savings and net benefits.

Equation 2 permits the employee achieving retirement age to work further and get salary

while receiving retirement benefits B_t . But if she decides to retire, L_t will equal one and she will receive no current salary.

$$L^* = L[S_t, B_t, X_t, A_t] \text{ (Equation 3)}$$

In Equation 3, the optimal amount of leisure L^* depends on salary, retirement benefits, health status, job satisfaction, etc.

A probit model, in which the dependent variable signals a decision to keep working, tests these null hypotheses:

1. Married people are not more likely to retire than single people. The marriage coefficient is not negative.
2. The sick are not more likely to retire than the healthy. The sickness coefficient is not negative.
3. The ill-educated are not more likely to retire than the well-educated. The ill-education coefficient is not negative.

The dependent variable y is the working status of retirees, a latent variable that can be measured via observable variables. In our case, observable variables are independent or explanatory variables. The dependent variable is 1 if the retirement-eligible person is employed and is 0 otherwise.

The main objective of this paper is to estimate the probability that retirees work.

4. Estimates

Data are from the Life in Transition Survey by the World Bank and the European Bank for Reconstruction and Development (2006). The survey observed the influence of the transition period on lives, behavior, perceptions and beliefs. It covered 29 transition countries in Central, Eastern and Southeastern Europe, as well as in the former Soviet Union. In each country, there were 1,000 face-to-face interviews of randomly selected adults aged 18 or older.

The sample consists of 237 Kazakhstanis of the standard retirement age -- men aged 64 or older and women aged 59 or older. It does not cover military retirees, people at risk of radiation in 1949-1963, and women with more than four children, since the standard retirement age does not apply to them. The sample covers the period from August to October 2006.

The independent dummy variables are gender, marital status, the highest level of education attained, health status, and the presence of grandchildren. Background variables include primary school education, bad health, and no grandchildren present. Table 1a details the variables, and Table 1b shows their descriptive statistics.

<i>Gender</i>	=1 if the person is female, = 0 otherwise
<i>Marital status</i>	=1 if the person is married or lives with a partner, = 0 otherwise
<i>Highest level of education attained</i>	<i>Secondary school education</i> =1 if the person has a secondary school education, =0 otherwise; <i>Higher professional degree</i> =1 if the person has such a degree (university, college) , = 0 otherwise
<i>Health status</i>	<i>Medium health</i> =1 if the person has average health, = 0 otherwise; <i>Good health</i> =1 if the person has good health, = 0 otherwise
<i>Presence of grandchild</i>	=1 if the person has any grandchildren, =0 otherwise

Table 1a. Exogenous variables.

	<i>Mean</i>	<i>Max.</i>	<i>Min.</i>	<i>Std. Dev.</i>	<i>Frequency distribution (by female)</i>	<i>Frequency distribution (by male)</i>
Gender	0.527426	1	0	0.500304	NA	NA
Marital status	0.42616	1	0	0.495564	9	92
Presence of grandchild	0.130802	1	0	0.337897	15	16
Good health	0.135021	1	0	0.342469	12	20
Medium health	0.413502	1	0	0.493504	52	46
Secondary school education	0.35865	1	0	0.480619	44	41
Higher professional degree	0.126582	1	0	0.333208	17	13

Table 1b. Descriptive statistics for dummy variables (237 observations).

Table 2 presents results. The Breusch-Pagan-Godfrey test did not indicate heteroskedasticity.

	<i>Coefficient</i>	<i>Standard Error</i>	<i>Prob</i>
Intercept	-1.14143*	1.10604	0.3021
Gender	0.04849*	0.25890	0.8514
Marital status	-0.11418*	0.26147	0.6623
Presence of grandchild	0.06155*	0.25557	0.8097
Health status			
Good health	0.10563*	0.27318	0.699
Medium health	-0.04726*	0.18830	0.8018
Highest level of education attained			
Secondary school education	0.16802*	0.18379	0.3606
Higher professional degree	0.06272*	0.26937	0.8159
Number of observations: 237			
McFadden R ² : 0.008798			

Table 2. Probit binary choice regressions of women aged 59-88 and men aged 64-86 in Kazakhstan who are eligible for retirement.

Notes: The data are from the Life in Transition Survey.

*p > .3

In previous studies, people with higher education were more likely to be employed since they could earn higher salaries. Married persons were more likely to retire, because couples coordinated their actions. And ill people were more likely to stop working than healthy people.

Marginal response coefficients (Table 3) suggest several in-sample results. First, females are 1.6% more likely than males to work after the usual age of retirement. The reason might be lower lifetime savings and earnings of women in comparison with men, since they take time out of the labor force to care for their children and old parents. Also, married people are 3.8% less likely than unmarried people to work. Individuals with grandchildren are 2% more likely than others to continue working, perhaps to support these children. Healthy people are 3.4% more likely than unhealthy people to work. And elderly people with secondary school education are 5.5% more likely than those with only primary education to work, while people with higher professional degrees are 2% more likely to work than others are. But all coefficients are statistically insignificant (Table 2 gives the p-values for two-tailed tests), so the independent variables may not affect the work decision in the statistical population. Strikingly, the study does not reject any of the three null hypotheses listed above.

	<i>Marginal response</i>
Gender	0.01605
Marital status	-0.03781
Presence of grandchild	0.02038
Health status	
Good health	0.03497
Medium health	-0.01565
Highest level of education attained	
Secondary school education	0.05563
Higher professional degree	0.02077

Table 3. Marginal response coefficients.

5. Conclusions

This paper evaluates the probability that a Kazakhstani old enough to retire would opt instead to work. The sample consists of 237 observations from the Life in Transition Survey of men aged 64 or older and of women aged 59 or older. Based on studies in the West, marital status, gender, health, education and presence of grandchild were expected to influence the work decision; but in fact they did not have statistically significant effects. This raises the possibility that transition economies have institutions that affect individual decisions in unanticipated ways. Future research might also address whether the decision to retire in Kazakhstan depends on financial education and saving habits.

Concerning policy, the literature review suggests that the government could support work by the elderly by providing health insurance, training, and financial consulting.

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6. References

- Becker, G. (1975), “*Human capital: A theoretical and empirical analysis, with special reference to education*,” National Bureau of Economic Research, <http://www.nber.org/chapters/c3730>
- Clark, R.L., Morrill, M. S., and Allen, S.G. (2012), “Effectiveness of employer-provided financial information: Hiring to retiring,” *American Economic Review*, Vol. 102, pp. 314-18
- Coile, C. (2003), “Retirement incentives and couples’ retirement decisions,” *The B.E. Journal of Economic Analysis & Policy*, Vol. 4, pp. 1-30
- European Bank of Reconstruction and Development (2006), Life in Transition Survey I: A survey of people’s experiences and attitudes, <http://www.ebrd.com/what-we-do/economic-research-and-data/data/lits.html>

- Farrer, S.R. (2014), “*Growing older in America: The health and retirement study*,” <http://www.nia.nih.gov/health/publication/growing-older-america-health-and-retirement-study/chapter-2-work-and-retirement>
- Gordy, O. (2006), “*Modeling the retirement decision in Ukraine*,” master’s thesis, Kiev School of Economics, Kiev, Ukraine, <http://kse.org.ua/uploads/file/library/2006/gordy.pdf>
- Gruber, J., and Wise, D. (1999), “*Social security programs and retirement around the world: Micro-estimation*,” University of Chicago Press
- Gruber, J., and Madrian, B. (1995), “Health insurance availability and the retirement decision,” *American Economic Review*, Vol. 85, pp. 938-948
- Gurley-Calvez, T., and Hill B. (2011), “Time to retire? The effect of state fiscal policies on retirement decisions,” *American Economic Review*, Vol. 101, pp. 35-39
- Gustman, A.L., and Steinmeier, T.L. (2005), “The Social Security Early Entitlement Age in a structural model of retirement and wealth,” *Journal of Public Economics*, Vol. 89, pp. 441-63
- Henkens, C. J. I. M., and Kalmijn, M. (2005), “Labor market exits of older men in the Netherlands: An analysis of survey data 1979-99,” in H-P. Blossfeld, S. Buchholz, and D. Hofäcker (eds.), *Globalization, uncertainty and late careers in society*, Routledge
- KazTAG (Kazakh Telegraph Agency) (2013), 190 Tysyach Kazakhstanskikh pensionerov, vkluchaya 137 zhenschin, prodolzhaют rabotat – Ministerstvo Trudy, April 2, <http://www.zakon.kz/4549514-190-tys.-kazakhstanskikh-pensionerov.html>
- Lusardi, A., and Mitchell, O.S. (2007), Baby boomer retirement security: The roles of planning, financial literacy, and housing wealth, *Journal of Monetary Economics*, Vol. 54, pp. 205–24
- Unified National Pension Fund (2008), The Law of the Republic of Kazakhstan on Pension Provision, June 24 <http://www.enpf.kz/1396>
- World Bank (2014a), World Development Indicators, Life expectancy at birth, female (1960-2014), <http://data.worldbank.org/indicator/SP.DYN.LE00.FE.IN?locations=KZ>
- World Bank (2014b), World Development Indicators, Life expectancy at birth, male (1960-2014), <http://data.worldbank.org/indicator/SP.DYN.LE00.MA.IN?locations=KZ>