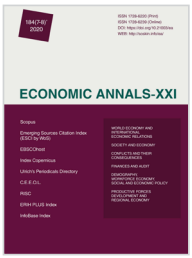

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Assiya Atabayeva
PhD Student (Economics), Assistant Professor,
Academician E. A. Buketov Karaganda University
28 Universitetskaya Str., Karaganda, 100000, Kazakhstan
asiaatabaeva@gmail.com
ORCID ID: https://orcid.org/0000-0002-4644-1843

Tatyana Pritvorova
D.Sc. (Economics), Professor,
Academician E. A. Buketov Karaganda University
28 Universitetskaya Str., Karaganda, 100000, Kazakhstan
pritvorova_@mail.ru
ORCID ID: https://orcid.org/0000-0002-6306-3960

Elmira Syzdykova
PhD (Economics), Academician E. A. Buketov Karaganda University
28 Universitetskaya Str., Karaganda, 100000, Kazakhstan
elmira5as@mail.ru
ORCID ID: https://orcid.org/0000-0001-6273-9968

Aigerim Lambekova
PhD (Accounting), Academician E. A. Buketov Karaganda University
28 Universitetskaya Str., Karaganda, 100000, Kazakhstan
aygerim.lambekova@gmail.ru
ORCID ID: https://orcid.org/0000-0001-6818-3665

Buketov University

Non-standard employment in Kazakhstan as an object of structural modeling

Abstract. Phenomenon of employment transformation in the modern economy is the subject of active discussions. Identification of factors influencing its development and the construction of a model of «new» (non-standard) employment are particularly topical. Based on the results of previous studies, we have identified both personal (human capital, education) and external factors (digitalization, social protection), put them forward and tested hypotheses about their impact on non-standard employment. We have constructed a structural model that reflects both the factors affecting non-standard employment, and the socio-economic parameters of society affected by non-standard employment (income and social inequality). We have assessed reliability and internal consistency of the model as well. Based on the results obtained, we have determined the degree of studied factors' influence on non-standard employment in Kazakhstan.

For the research, we used methods of online polling, modeling using structural equations (SEM) of SmartPLS software. Based on the results of the PLS analysis, we have identified two main issues of non-standard employment in Kazakhstan: a low level of social protection and inability to accumulate human capital of employees. Obtained determination coefficients (0.8, 0.5, and 0.58) indicate that the unstable nature of non-standard employment (instability, low wages) leads to an increase in poverty and social inequality. We have proposed measures to regulate these issues by improving legislation on social insurance for non-standardly employed citizens, and taking active measures to promote employment, including a state employment program.

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Атабаєва А. К.
PhD-докторант,
Карагандинський університет імені академіка Є. А. Букетова, Караганда, Казахстан
Притворова Т. П.
доктор економічних наук, професор, кафедра економіки та міжнародного бізнесу,
Карагандинський університет імені академіка Є. А. Букетова, Караганда, Казахстан
Сиздикова Е. Ж.
кандидат економічних наук, доцент, завідувач, кафедра бухгалтерського обліку та аудиту,
Карагандинський університет імені академіка Є. А. Букетова, Караганда, Казахстан
Ламбекова А. Н.
PhD (економіка), доцент, кафедра бухгалтерського обліку та аудиту,
Карагандинський університет імені академіка Є. А. Букетова, Караганда, Казахстан

Нестандартна зайнятість у Казахстані як об'єкт структурного моделювання

Анотація. Явище трансформації зайнятості в сучасній економіці є предметом активних дискусій. Особливий інтерес викликає виявлення факторів розвитку цих процесів і побудови моделі «нової» зайнятості. На основі результатів попередніх досліджень нами визначено особистісні (людський капітал, освіту) і зовнішні фактори (цифровізація, соціальний захист), висунуто й протестовано гіпотези про вплив цих факторів на нестандартну зайнятість. Побудовано структурну модель, що відображає фактори, які впливають на нестандартну зайнятість, і соціально-економічні параметри суспільства, на які нестандартна зайнятість має вплив (доходи й соціальна нерівність). Оцінено надійність і внутрішню узгодженість моделі. За отриманими результатами визначено ступінь впливу досліджуваних факторів на нестандартну зайнятість у Казахстані.
При проведенні дослідження були використані методи соціологічного онлайн опитування, а також моделювання за допомогою структурних рівнянь (SEM) на основі програми SmartPLS. За результатами PLS-аналізу виявлено дві головні проблеми нестандартної зайнятості в Казахстані: низький рівень соціального захисту та неможливість накопичення людського капіталу працівників. Отримані коефіцієнти детермінації (0,8; 0,5; 0,58) свідчать про те, що нестійкий характер нестандартної зайнятості (нестабільність, низька заробітна плата) призводить до зростання бідності та соціальної нерівності між людьми. Запропоновано заходи регулювання виявлених проблем шляхом вдосконалення законодавства про соціальне страхування нестандартно зайнятих громадян, прийняття активних заходів сприяння зайнятості, в тому числі державної програми зайнятості населення.
Ключові слова: нестандартна зайнятість; віддалена робота; зарплата; дохід; людський капітал; найманий працівник; соціальний захист; соціальне страхування; цифровізація; освіта.

Атабаева А. К.
PhD-докторант,
Карагандинский университет имени академика Е. А. Букетова, Караганда, Казахстан
Притворова Т. П.
доктор экономических наук, профессор, кафедра экономики и международного бизнеса,
Карагандинский университет имени академика Е. А. Букетова, Караганда, Казахстан
Сыздыкова Э. Ж.
кандидат экономических наук, доцент, заведующая, кафедра бухгалтерского учета и аудита,
Карагандинский университет имени академика Е. А. Букетова, Караганда, Казахстан
Ламбекова А. Н.
PhD (экономика), доцент, кафедра бухгалтерского учета и аудита,
Карагандинский университет имени академика Е. А. Букетова, Караганда, Казахстан

Нестандартная занятость в Казахстане как объект структурного моделирования

Аннотация. Явление трансформации занятости в современной экономике является предметом активных дискуссий. Особый интерес вызывает выявление факторов развития этих процессов и построения модели «новой» занятости. На основе результатов предыдущих исследований нами определены личностные (человеческий капитал, образование) и внешние факторы (цифровизация, социальная защита), выдвинуты и протестированы гипотезы о влиянии этих факторов на нестандартную занятость. Построена структурная модель, отражающая факторы, влияющие на нестандартную занятость и социально-экономические параметры общества, на которые нестандартная занятость имеет влияние (доходы и социальное неравенство). Оценена надежность и внутренняя согласованность модели. По полученным результатам определена степень воздействия исследуемых факторов на нестандартную занятость в Казахстане.
При проведении исследования были использованы методы социологического онлайн опроса, а также моделирования с помощью структурных уравнений (SEM) на основе программы SmartPLS. По результатам PLS-анализа выявлены две главные проблемы нестандартной занятости в Казахстане: низкий уровень социальной защиты и невозможность накопления человеческого капитала работников. Полученные коэффициенты детерминации (0,8; 0,5; 0,58) свидетельствуют о том, что неустойчивый характер нестандартной занятости (нестабильность, низкая заработная

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плата) приводит к росту бедности и социальному неравенству между людьми. Предложены меры регулирования выявленных проблем путем совершенствования законодательства о социальном страховании нестандартно занятых граждан, принятия активных мер содействия занятости, в том числе государственной программы занятости населения.
Ключевые слова: нестандартная занятость; удаленная работа; зарплата; доход; человеческий капитал; наемный работник; социальная защита; социальное страхование; цифровизация; образование.

1. Introduction

The fourth industrial revolution and the digitalization that generates it, the development of remote technologies, and changing requirements for many professions and jobs complicate employment for some groups of the economically active population while creating opportunities for others. Integration into global economic space and the need to constantly improve the country's competitiveness have a significant impact on transformation of many processes, including both nature and modes of population employment.

The companies' drive to continuously improve their competitiveness in global and national economies has stimulated the search for cost reduction options, one of which turned out to be employee working patterns. Both temporary and part-time employment spread more and more in the developed world, and this process is quite intensive.

Unforeseen risks to the global economy, and above all, the COVID pandemic, have given a significant boost to remote employment in a multitude of areas, especially in education, trade, advertising, media, etc. Opportunities for this appeared, most notably, thanks to information technologies.

Development of non-standard employment caused by the transition to a post-industrial economy depends on a variety of internal and external factors, and is characterized by both positive and negative consequences.

2. Brief Literature Review

World researchers take great interest in non-standard employment and the consequences it causes (Kalleberg, 2000; Castells, 2010; Corsani, 2015). A key issue many studies explore is the identification of factors that influence the growth of non-standard types of employment.

Y. Sadovaya and M. Arntz (Sadovaya, 2018; Arntz et al., 2019) believe that digitalization processes and the rapid development of the world wide web have created favorable conditions for remote work, the spread of the gig economy, where the employer and employee communicate through online platforms. In turn, this has increased the demand for mobile workers performing non-standard jobs (Huws et al., 2018).

One of the most relevant topics is the concept of so-called «safe flexibility» (Lorquet et al., 2017). It is about strategies aimed at increasing the labor market flexibility, modernizing its organization and labor relations related to mobile regimes and social protection of such employees (Bosch, 2004; Oesch, 2015; Matsaganis et al, 2015).

Researchers highlight another important issue of non-standard employment, the growth and realization of human potential. Instability of flexible forms of employment blocks employees' access to opportunities to fully develop their professional qualities and abilities (Green & Livanos, 2015; Kolmykova & Merzlyakova, 2019). At the same time, emergence of new qualification requirements in the workplace is accompanied by increased requirements for the educational level of employees, which the whole multitude of researchers cover in their works (Walsh, 2007, Pritvorova et al., 2020). Scientific discussions pay a lot of attention to the causal relationship between the process of globalization and social inequality. Over the past three decades, researchers have been noting the growth of informal sector and uneven income distribution in developing countries, and as a result, increased inequality within countries (Pfau-Effinger, 2017).

Thus, the world literature confirms the scale of non-standard employment is influenced by such factors as the digitalization of economy and the social protection system, and in turn its own impact on the income and human capital of the employee, and social inequality.

3. Purpose

The purpose of the paper is to identify significant social parameters of non-standardly employed workers and quantify the nature of their perception of economic factors influencing acquisition of the status of «non-standardly employed,» and relationships between them.

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4. Results

Building a model using the SmartPLS program comprises three stages.

Stage 1. Determining factors and forming hypotheses of these factors' influence on non-standard employment

We base our research on the dual market theory, which mainly focuses on the secondary segment of the labor market with non-standard forms of employment (Reich et al., 1973). Based on the conclusions of many studies, including our previous ones, we shall highlight the factors influencing non-standard employment (Orynbassarova et al., 2019). These factors will be two personal factors (human capital and education) and two external factors (digitalization of activities in the workplace and social security in the labor market). We shall also try to identify consequences for income (personal factor) and social inequality (external factor) of the population in the Republic of Kazakhstan. Based on the predicate analysis, let us formulate hypotheses.

H01: There is a significant relationship between digitalization and non-standard employment.
H02: There is a significant relationship between employee education and non-standard employment.
H03: There is a significant relationship between human capital and non-standard employment.
H04: There is a significant relationship between employee income and social inequality.
H05: There is a significant correlation between non-standard employment and income of the population.
H06: There is a significant relationship between non-standard employment and social inequality.
H07: There is a significant relationship between social protection of employees and non-standard employment.
H08: There is a significant relationship between social protection and social inequality.

Stage 2. Building a preliminary model

To collect initial data for the study, we have prepared a questionnaire consisting of seven blocks of questions:

Block 1 - Respondent's Income;
Block 2 - Non-standard Employment;
Block 3 - Social Inequality;
Block 4 - Human Capital;
Block 5 - Digitalization of the Economy;
Block 6 - Social Protection;
Block 7 - Education.

Based on the results of the survey, using SmartPLS, we have built a structural model that demonstrates digital expression of relationships between variables (Figure 1).

Stage 3. Model verification

Assessment of coefficients of model indicators for convergent validity shows acceptable indicators of the model compliance quality since most of them have values exceeding 0.7 (Figure 1). This confirms correlation between of latent variable values. We shall improve the model by removing indicators with low reliability and validity values, namely X5dig, X6dig, Y7sig, Y8sig, X9sig, and X10ed.

Recalculation after excluding indicators that deviate from the standards gives a new model with results exceeding the original values. Using the Bootstrapping procedure, we shall check the effectiveness of the obtained coefficients. This is how we get the significance level of the Cronbach's alpha coefficients, the R-squared values, and the validity of the hypotheses (Table 1).

The Cronbach's alpha coefficient (Table 1) shows a fairly high level of internal consistency of test elements and their influence on factors. The only exception is the Social Security factor, which has a value of 0.400, which is due to the wide range of values and heterogeneity of the responses received.

The value of the R-squared coefficient of determination for the endogenous variable Non-standard Employment has a high value (0.8), which indicates that the factors included in the model describe it well and have a high degree of influence on this variable.

As Table 1 shows, we have accepted all hypotheses except H03 and H07. Results could be commented as follows. Non-standard employees feel either socially unprotected or protected at

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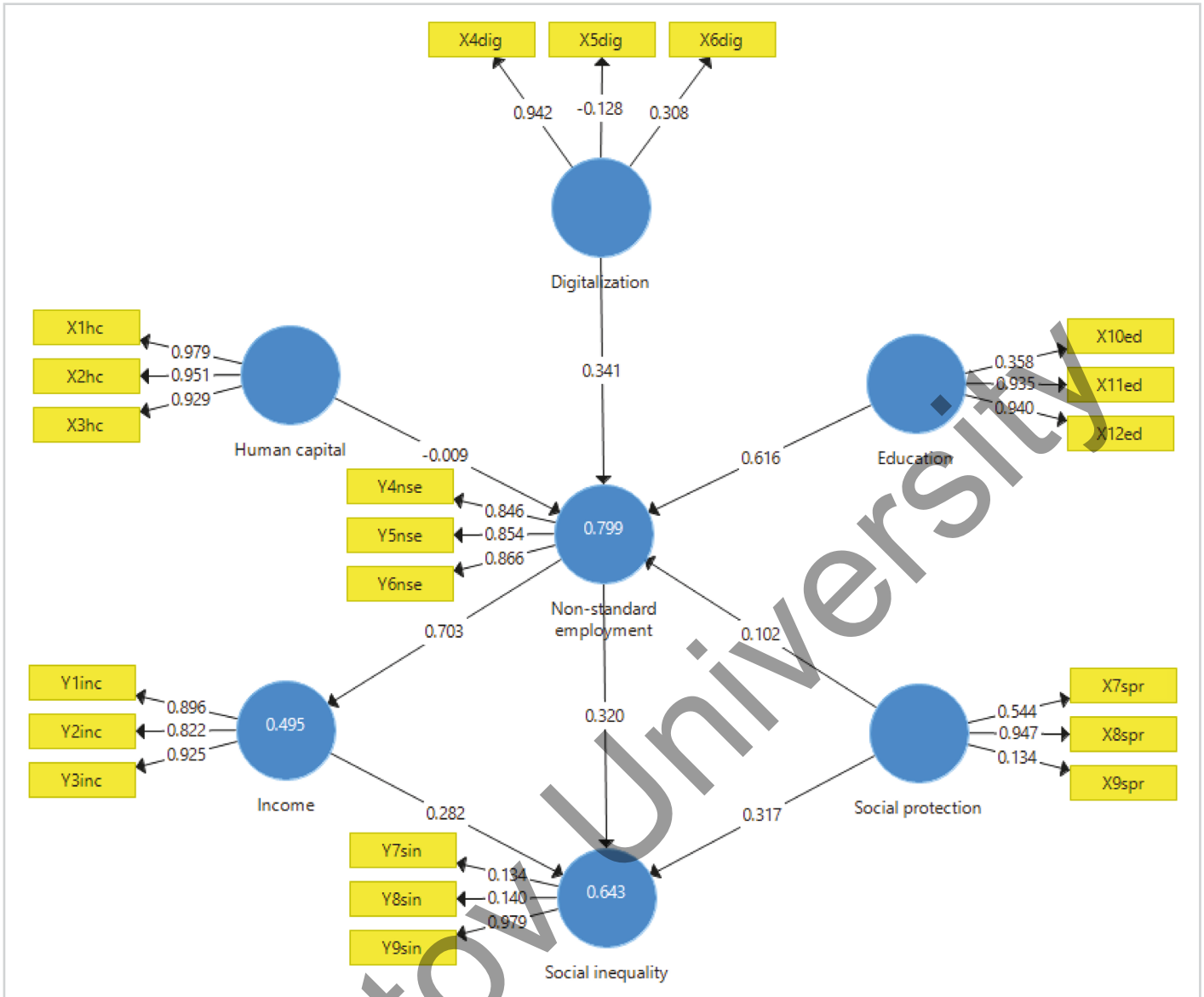

Note: The numbers in blue circles are the coefficients of determination for the dependent Y-variables. Since there are only three Y-variables in the model (Income, Social inequality, Non-standard employment), therefore, only for them the program displays the value of the coefficients in the blue circles.

Figure 1:
Structural model that demonstrates digital expression of relationships between variables for our research based on the results of our empirical survey
Source: Compiled by the authors based on the SmartPLS analysis

Table 1:
PLS analysis results

Hypotheses	Original Sample	Cronbach's Alpha	R Square	P Values	Hypothesis status
(H01) Digitalization -> Non-standard employment	0.316	1.000		0.000	Accepted
(H02) Education -> Non-standard employment	0.644	0.878		0.000	Accepted
(H03) Human capital -> Non-standard employment	0.016	0.951		0.737	Rejected
(H04) Income -> Social inequality	0.281			0.044	Accepted
(H05) Non-standard employment -> Income	0.703			0.000	Accepted
(H06) Non-standard employment -> Social inequality	0.317			0.022	Accepted
(H07) Social protection -> Non-standard employment	0.105	0.400		0.086	Rejected
(H08) Social protection -> Social inequality	0.274			0.027	Accepted
Income		0.857	0.494		
Non-standard employment		0.822	0.804		
Social inequality		1.000	0.583		

Source: Compiled by the authors based on the SmartPLS analysis

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a very low level. This is due to the fact that among the respondents, the majority is deprived of social security due to the lack of a formal employment contract.

The lack of correlation between human capital and non-standard employment is reflected in the fact that employers do not want to invest in the training of temporary, part-time or informal employees. In this regard, standard employees who regularly undergo professional development are in a better position, since it is profitable for employers to invest in permanent employees.

Rejected hypotheses confirm the existence of two main issues of non-standard employment in Kazakhstan:

- lack/low level of social protection;
- inability to accumulate human capital of employees.

Employers reduce production costs and avoid responsibility to employees. Therefore, measures are needed to strengthen the responsibility of employers for the informal recruitment.

As noted above, education, income, and human capital are personal characteristics. Therefore, high coefficient of education influence (0.644) on non-standard employment (hypothesis H02) can be interpreted as a significant factor for those seeking employment or additional employment, since in the new labor market conditions, the majority of employees have high qualification requirements. When facing this problem, people realize the importance of education as a key employment factor.

Non-standard employment influence on income (hypothesis H05) has a high correlation as well (0.703). In many cases, non-standard employment is an additional source of income, or an alternative to the status of unemployed.

Studying the influence of external factors (digitalization, social security), we can conclude that digitalization's (hypothesis H01) influence on non-standard employment (0,316) is strong enough. This may be the result of people's personal perception of the current situation with the COVID pandemic, as well as the rapid development of information technologies, which makes online and remote work possible.

Obtained positive correlation between non-standard employment and social inequality (hypothesis H06) raises serious concerns, since the growth of flexible employment, according to respondents, leads to an increase in poverty and inequality, and, consequently, an increase in social tension in the country.

Thus, the model built in the SmartPLS based on the results of a sociological study has a fairly good structure for analyzing and assessing non-standard employment, since the variables included in the constructs have good indicators and the results obtained can be used for further research and decision-making at the state level.

5. Conclusion

Prevalence of non-standard types of employment in Kazakhstan is associated with a number of issues related to maintaining income at a socially acceptable level and improving professional skills, as well as the employee's ability to neutralize or compensate for social risks in the labor market.

Low wages, periodic income instability due to intermittent employment, little to no insurance benefits due to insignificant experience in insurance systems, and limited opportunities to develop human capital with their own resources have become characteristics of employment for most non-standard employees.

In this context, two things become obvious. First, it is advisable to continue the current state program Development of Productive Employment and Small Business (Government of the Republic of Kazakhstan, 2018) which allows an employee dissatisfied with their status in the labor market to improve their skills, acquire new professions, move to a labor-deficient area at the invitation of a specific employer, etc. The range of measures in this program is quite wide and the availability of employment promotion services increases the employee chances to change their status in the labor market if they make their own efforts.

Second, it is necessary to increase the level of insurance indemnities from the State Social Insurance Fund (Government of the Republic of Kazakhstan, 2019) for employees with little experience in the system and low income to a certain socially acceptable level. We shall investigate this issue, develop proposals, and justify them in our subsequent studies.

Third, the education system needs to be continuously improved at all levels, especially at the lower and middle professional levels, as they provide the foundation for the profession and new skills required for full professional participation in the digital economy.

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Thus, an important state function to reduce the polarization between different forms of employment is to create conditions for the emergence of new decent jobs, improve legislation on social insurance for non-standardly employed citizens, and develop active measures to promote employment, including state employment program.

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