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Tahririyat manzili:
100066, Toshkent shahri, Islom Karimov ko‘chasi, 49-uy.
Elektron manzil: *ilmiymaktab@gmail.com*
Jurnal web-sayti: *www.laboreconomics.uz*
Bog‘lanish uchun telefonlar:
+998 (99) 881-86-98.

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Toshkent sh, O‘zbekiston st.

www.laboreconomics.uz

+998 (99) 881-86-98

ilmiymaktab@gmail.com

MUNDARIJA (CONTENTS)

MEHNAT BOZORI VA MEHNAT MUNOSABATLARI

INSON RESURSLARINI BOSHQARISH

INSON KAPITALI

Toshkent sh, Islom Karimov k., 41-uy.
ilmiymaktab@gmail.com www.laboreconomics.uz +998 (99) 881-86-98

MAKROIQTISODIYOT

HUMAN CAPITAL DEVELOPMENT IN THE CONTEXT OF HEALTH AND SAFETY REGULATION: POLICY ANALYSIS IN CONSTRUCTION INDUSTRY

Aziz Sadulloyevich Zikriyoev
TSUE, PhD. Department of World Economy, Uzbekistan.

Dilmurod Khojamkulov
TSUE, PhD. Department of World Economy.

Madina Raimjanova
TIF, PHD. Department of investment and appraisal.

Nurbek Turayev
TSUE, Department of Business Management and Logistics.

Akhror Abdullaev
TSTU, PhD. Department of Transportation Economics, Uzbekistan.

Abstract. This paper explores the development of human capital in the context of health and safety management in the construction industry. The construction sector is known for its inherent risks and hazards, making it crucial to prioritize the well-being and safety of workers. Effective health and safety management not only protects employees but also contributes to increased productivity, reduced costs, and enhanced reputation for construction companies. This study examines the role of human capital development in promoting a culture of safety within construction organizations. It investigates various aspects such as training, education, skill development, and knowledge acquisition that contribute to the overall competence and capabilities of individuals working in the construction industry. The findings of this study highlight the importance of investing in human capital development as a means to enhance health and safety outcomes in construction. It emphasizes the need for comprehensive training programs, continuous learning opportunities, and the integration of safety competencies into the construction workforce. The paper concludes with recommendations for construction companies, policymakers, and industry stakeholders on how to prioritize and foster the development of human capital to create safer work environments and improve overall construction industry performance. Current research states the human capital development approach from three aspects: health (state of health, occupational health, sanitation, and hygiene); knowledge (education, like-mindedness, mentoring, training), and professional skills (esteem, skills, skills, professional development) from the foreign countries practices.

Keywords. human capital, health and safety, construction policy improvement, sustainable economic growth, transformation economics.

SALOMATLIK VA XAVFSIZLIKNI TARTIBGA SOLISH KONTEKSTIDA INSON KAPITINI RIVOJLANISH: QURILISH SANOATIDA SIYOSAT TAHLILI

Aziz Sadulloyevich Zikriyoyev
TDIU, PhD, Jahon iqtisodiyoti kafedrasi

Dilmurod Xo‘jamqulov
TDIU, PhD, Jahon iqtisodiyoti kafedrasi

Madina Raimjonova
TMI, PhD, Investitsiyalar va baholash kafedrasi

Nurbek Turayev
TDIU, “Biznes menejmenti va logistika” kafedrasi

Ahror Abdullayev
TDTU, PhD, Transport iqtisodiyoti kafedrasi

Annotatsiya. Ushbu maqola qurilish sanoatida salomatlik va xavfsizlikni boshqarish kontekstida inson kapitalining rivojlanishini o‘rganadi. Qurilish sektori o‘ziga xos xavf va xavf-xatarlar bilan mashhur bo‘lib, ishchilarning farovonligi va xavfsizligini birinchi o‘ringa qo‘yishni hal qiluvchi ahamiyatga ega. Salomatlik va xavfsizlikni samarali boshqarish nafaqat xodimlarni himoya qiladi, balki mehnat unumdorligini oshirishga, xarajatlarni kamaytirishga va qurilish kompaniyalari obro‘sini oshirishga yordam beradi. Ushbu tadqiqot qurilish tashkilotlarida xavfsizlik madaniyatini oshirishda inson kapitalini rivojlantirish rolini o‘rganadi. U qurilish sohasida ishlaydigan shaxslarning umumiy malakasi va imkoniyatlariga hissa qo‘shadigan o‘qitish, ta’lim, malaka oshirish va bilimlarni egallash kabi turli jihatlarni o‘rganadi. Ushbu tadqiqot natijalari qurilishda salomatlik va xavfsizlik natijalarini yaxshilash vositasi sifatida inson kapitalini rivojlantirishga sarmoya kiritish muhimligini ta’kidlaydi. Bu keng qamrovli o‘quv dasturlari, uzluksiz o‘rganish imkoniyatlari va xavfsizlik bo‘yicha vakolatlarni qurilish ishchi kuchiga integratsiyalashuvi zarurligini ta’kidlaydi. Hujjat qurilish kompaniyalari, siyosatchilar va sanoat manfaatdor tomonlariga xavfsizroq ish muhitini yaratish va qurilish sanoatining umumiy faoliyatini yaxshilash uchun inson kapitalini rivojlantirishga qanday ustuvorlik berish va rag‘batlantirish bo‘yicha tavsiyalar bilan yakunlanadi. Hozirgi tadqiqotlar inson kapitalini rivojlantirish yondashuvini uchta jihatdan ta’kidlaydi: salomatlik (salomatlik holati, mehnat salomatligi, sanitariya va gigiena); xorijiy mamlakatlar amaliyotidan olingan bilimlar (ta’lim, hamfikrlik, murabbiylik, malaka oshirish) va kasbiy ko‘nikmalar (baholash, ko‘nikma, malaka, malaka oshirish).

Kalit so‘zlar. inson kapitali, sog‘liq va xavfsizlik, qurilish siyosatini takomillashtirish, barqaror iqtisodiy o‘sish, iqtisodiyotni o‘zgartirish.

Introduction:

The relevance and necessity of the research conducted in the introduction are based on the purpose, tasks, object, and subject of the research described, the priority of the republic’s science and technology development and the scientific innovation of the

research, and practical results are described, scientific and practical results obtained the significance of which is explained, the implementation of research results into practice, published works and information on the structure of the work are presented.

The first chapter of the dissertation entitled “Theoretical foundations of ensuring occupational health and safety at work in the development of human capital” researches the concept of human capital development and related theoretical approaches. experiences of foreign countries on labor safety are studied.

Initially, human capital was considered as a set of investments that increase his ability to work, that is, in the way of education and professional skills development. In various economic literature, expressions such as labor force, labor resources, labor potential, mental potential, human factor, and human capital are used. So, in the early days, a person was considered a force used in the work process, that is, a labor resource, but with the progress of science and technology, it has been proven that the human factor has the advantage, not the physical ability, but the mental potential. This, in turn, has created a need to focus more on qualitative rather than quantitative aspects of the workplace. In particular, in the 21st century, countries pay great attention to their economic growth based on the principle of a “Knowledge-based economy”.

Methods and materials:

2.1. Study area

Current research area covers human capital associations with health and safety management in construction sector in Uzbekistan.

2.2. Study limitation

Clarifying the limitations of a study can be defined as a OHS investment, personality of the workers, social losses and human capital development interaction of the construction firms.

2.3. Sampling

We have been choosed respondents among 37 regions out of 48 firms in Uzbekistan.

2.4. Research methods

To verify the previous findings from the literature review and get a clearer understanding of the OHS management cause on human capital at workplaces analysis based on multiple linear regression.

Literature review:

It is ‘generally understood to consist of the individual’s capabilities, knowledge, skills, and experience of the company’s employees and managers, as they are relevant to the task at hand, as well as the capacity to add to this reservoir of knowledge, skills, and experience through individual learning [1].

It is job-related knowledge whereas the human capital literature has moved beyond the individual to also embrace the idea that knowledge can be shared among groups and institutionalized within organizational processes and routines [2].

The central proposition of social capital theory is that networks of relationships constitute a valuable resource for the conduct of social affairs…much of this capital is embedded within networks of mutual acquaintance [3].

Within a provisional concept of social capital, the authors argue for three major elements: a structural dimension (network ties, network configuration, and appropriable organization); a cognitive dimension (shared codes and languages, shared narratives), and a relational dimension (trust, norms, obligations, and identification) [4].

A supportive culture with strong corporate purpose and compelling values has been seen as the underlining reason for major corporate success [5]

Routines and processes, which act as the glue for organizations, can either enhance or disable cooperative working and the development of knowledge [6].

From this point of view, in the development of human capital in the construction industry, OHS is in turn interrelated with economic efficiency, which is the end of social efficiency. But we can say that workers should be interested in working in a safe working environment, not in the development of physical and material relations. The opinions of several Western scientists are important in this field. We focus on the following most important means of human capital formation and development:

- investment;
- development of education, healthy lifestyle, and intellectual potential;
- determination of salary according to experience and qualifications;
- development of professional skills and ability to work efficiently;
- make everyone aware of the dangers in the workplace;
- development of all types of culture (general, organizational, and corporate);
- contribute to the implementation of a creative approach and encourage self-development.

If we study the forms of national legislation of the UK, the USA, Canada, Germany, France, Italy, Japan, Australia, Russia, and other countries with advanced economies, we see that they have developed systematically over a certain period.

In 1970, under the leadership of the USA, the Law "Occupational Safety and Health" was put into practice as a national law, and in Russia, as a result of international cooperation, we can see that in 2018, as a result of international cooperation, it adopted its own national legislation in the form of "Health, Safety and Occupational Hygiene" (Table 1).

Following the 1973 UN Declaration on Human Rights, the Pact on "Health and Safety at Work" was ratified. In 2012, ILO Convention No. 174 on "Prevention of Accidents in Industry", Convention No. 155 on "Occupational Health and Safety in All Sectors of the Economy" in 1998, and Convention No. 167 on "Health and Safety in Construction" in 2018 were ratified [7].

Table 1.

Forms of national legislation of foreign countries related to the OHS

№	Country	Legislation	Website	Year
1	USA	Occupational safety and health	www.osha.gov/	1970
2	Great Britain	Health and safety in workplaces	www.hse.gov.uk/	1974
3	Canada	Occupational safety and health	www.ccohs.ca/	1978
4	EU	Health and Safety	www.osha.europa.eu/	1987
5	Australia	Occupational safety and health	www.safeworkaustralia.gov.au/	1984

6	Malaysia	Occupational safety and health	www.dosh.gov.my/index.php	1994
7	Russia	Health, safety, and occupational hygiene	www://base.garant.ru/72005258	2018
8	Japan	Safety and health in the industry	www.jisha.or.jp/	1972
9	Korea	Occupational safety and health	www.english.kosha.or.kr/	1987
10	Singapore	Safety and health in workplaces	www. wshc.sg/	2006
11	China	Occupational safety and health	www.dosh.gov/	2002

Source: Author’s findings

As a result of the harmonization of these international standards with practice, the regulatory and legal bases of the Russian Federation related to labor safety were abolished, and a new law entitled “Health, safety, and occupational hygiene” was implemented following Convention No. 155. The wording and rules used in the current names “Okhrana truda”, “Bezopasnost i okhrana truda”, “Bezopasnost jiznedeyatelnosti”, “Technicheskaya bezopasnost”, “Pojarnaya bezopasnost” and other names have lost their validity [8].

In the study, the concept of “occupational health and safety” was thoroughly studied and the author’s definition was developed. According to him, “Occupational health and safety is the possibility of damage (chance of potential damage) and the probability of loss (loss probability) as a result of identifying, assessing, eliminating, controlling and eliminating negative situations (near miss) that are one second before they happen in the workplace) is to ensure the health, safety, comfort, and environmental protection of workers as a result of the development of a safe working environment and culture by introducing yellow lines indicating the high level of significance of the existing risk.

ILO, Great Britain, USA, and European Union practices are the basis for creating scientific theories, programs, standards, and training manuals for the prevention of accidents by the scientifically correct and efficient organization of workers’ activities in the construction industry, that is, a single approach, namely “Professional widely implemented the concept of health and safety.

In the last three years, the number of industrial accidents in our country amounted to 1214, of which 241 resulted in death, and more than 21 thousand citizens applied for violations of labor rights and involvement in forced labor. In addition, 113 people were seriously injured as a result of accidents that occurred in this area. In 2020, 82 (13%) accidents occurred in the construction industry, and 31 (15%) people died. In addition, 51 people were seriously injured. 807.3 million were paid to 403 officials in the course of special investigations in 2020 [9]. fined in the number of souls. To regulate the work process, 1025 workplaces in 46 construction organizations were certified by the State Labor Inspectorate on working conditions. In particular, these problems remain acute in the informal sector of the economy.

Analysis and Results:

According to the State Statistics Committee of the Republic of Uzbekistan, the coefficient of fatal industrial injuries is 0.44 per 1000 employees. If we compare with international practice, this indicator is 0.139 (3 times less), in the USA - 0.054 (8 times

less), in Finland - 0.038 (11 times less), in Japan - 0.02 (22 times less), in Great Britain – is 0.006 (27 times less) [10].

On the basis of a social survey consisting of 32 questions, the opinions and views of 403 workers were studied in the development of the concept of decent work in the construction materials production enterprises of the country. According to the collected data following results were determined:

Table 2.

Pairwise correlations matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Communication	1.000							
(2) Personality	0.414	1.000						
	(0.000)							
(3) OHS_investment	0.442	0.213	1.000					
	(0.000)	**(0.000)**						
(4) Human_capital	0.419	0.447	0.294	1.000				
	(0.000)	**(0.000)**	**(0.000)**					
(5) Social_losses	0.576	0.293	0.834	0.349	1.000			
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**				
(6) Work_effective~s	0.093	0.002	0.131	0.056	0.093	1.000		
	(0.061)	(0.963)	**(0.008)**	(0.261)	(0.063)			
(7) Organizational~e	0.440	0.184	0.407	0.245	0.413	0.071	1.000	
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.156)		
(8) Flexibility	-0.156	-0.083	-0.178	-0.101	-0.176	-0.047	-0.150	1.000
	(0.002)	(0.097)	**(0.000)**	**(0.044)**	**(0.000)**	(0.343)	**(0.003)**	

Question 1 of the questionnaire was answered by 43 percent of workers, 12.5 percent of engineers, 12.1 percent of management employees, and 22 percent of other professions. Also, as for the 2nd question, 90.4 percent of the participants stated that they have familiarized themselves with the Law of the Republic of Uzbekistan "On Labor Protection". 4 percent of the participants rated 3, 13.6 percent of participants rated 4, 37.1 percent of participants rated 5, and 34 percent of participants rated 7. Regarding the last question, 44.6 percent of the participants considered that the investment attraction in the R&D processes has a high impact, 35.4 percent of the participants has an average impact, and 17.1 percent of the participants believe that it has a low impact on socio-economic efficiency.

Table 2 provides general information about factors combined correlation matrix, and the relationship between the exogenous factor and each endogenous factor is statistically significant (*p<0.1, **p<0.05, ***p<0.001)

To increase the reliability of the model, the SEM model was formed based on the general characteristics of each variable. For example, in the course of the research, the interaction of observed variables with unobserved Latent variables was determined.

To increase the adequacy of the selected model, it was determined whether or not there is a positive effect of OHS on social efficiency in the enterprises of the regions as a result of the combined application of SEM and LCA models [11].

SEM (Structural equation modeling) is a complex statistical analysis that involves evaluating the cause and effect relationship between unobservable variables and identified factors in the model. These models are models that explain relationships

between measured variables and latent variables, and relationships between latent variables. Latent variables are variables that, as humans, we understand as a concept, but that cannot be measured directly [12].

Results from the reviews indicated reporting practices varied widely and studies rarely tested advanced models, such as longitudinal LCA models, measurement invariance models, or models with covariates [13].

Table 3.

Multiple Linear Regression (MLR) analysis

Human_capital	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Communication	.134	.039	3.40	.001	.056	.211	***
Personality	.233	.034	6.87	0	.167	.3	***
OHS_investment	.033	.049	0.68	.496	-.063	.13	
Social_losses	.049	.056	0.88	.38	-.06	.158	
Work_effectiveness	.012	.026	0.45	.654	-.04	.064	
Organizational_per~e	.033	.037	0.88	.382	-.041	.106	
Flexibility	-.005	.017	-0.30	.766	-.039	.029	
Constant	.139	.04	3.49	.001	.061	.217	***
Mean dependent var		0.574	SD dependent var			0.157	
R-squared		0.281	Number of obs			403	
F-test		22.095	Prob > F			0.000	
Akaike crit. (AIC)		-467.107	Bayesian crit. (BIC)			-435.116	

*** p<.01, ** p<.05, * p<.1

The Multiple Linear Regression (MLR) analysis results indicate the relationships between the independent variables (Human Capital, Communication, Personality, OHS Investment, Social Losses, Work Effectiveness, Organizational Performance, and Flexibility) and the dependent variable. Here is a brief interpretation of the findings:

Communication: The coefficient is 0.134, indicating that for every one-unit increase in Communication, the dependent variable (unspecified in the given information) is predicted to increase by 0.134 units. This effect is statistically significant ($p < 0.001$).

Personality: The coefficient is 0.233, suggesting that a one-unit increase in Personality is associated with a predicted increase of 0.233 units in the dependent variable. This relationship is highly significant ($p < 0.001$).

OHS Investment: The coefficient is 0.033, and the p-value is 0.496, indicating that OHS Investment does not have a significant effect on the dependent variable at the given level of significance ($\alpha = 0.05$).

Social Losses: The coefficient is 0.049, and the p-value is 0.38, suggesting that Social Losses do not have a significant impact on the dependent variable at the given level of significance.

Work Effectiveness: The coefficient is 0.012, and the p-value is 0.654, indicating that Work Effectiveness does not have a statistically significant effect on the dependent variable at the given level of significance.

Organizational Performance: The coefficient is 0.033, and the p-value is 0.382, suggesting that Organizational Performance does not have a significant impact on the

dependent variable at the given level of significance.

Flexibility: The coefficient is -0.005, and the p-value is 0.766, indicating that Flexibility does not have a statistically significant effect on the dependent variable at the given level of significance. The constant term in the regression equation represents the predicted value of the dependent variable when all independent variables are zero. The constant has a coefficient of 0.139, and it is statistically significant ($p < 0.001$). The R-squared value of 0.281 indicates that approximately 28.1% of the variance in the dependent variable can be explained by the independent variables collectively. The F-test yielded a significant result ($p < 0.001$), indicating that the overall regression model is statistically significant in predicting the dependent variable.

The Akaike information criterion (AIC) and Bayesian information criterion (BIC) are measures of model fit, with lower values indicating better fit. The AIC value is -467.107, and the BIC value is -435.116. In summary, the results suggest that Communication and Personality have significant positive effects on the dependent variable, while the other independent variables (OHS Investment, Social Losses, Work Effectiveness, Organizational Performance, and Flexibility) do not have significant effects.

According to the results, communication and personality IV are a strong relationship in *p<0.1 statistically significant level in human capital development in the construction sector. The F-test is 22.095 in Prob > F 0.000 level which means there is no significant relationship between given independent variables and the dependent level. In this case, we can reject the H0 hypothesis at *p<0.1 level. As for the Cronbach's alpha test, the reversed item is "Flexibility" with an average interitem covariance is 0.0141618. The number of items on the scale is 8 and the scale reliability coefficient is 69 percent.

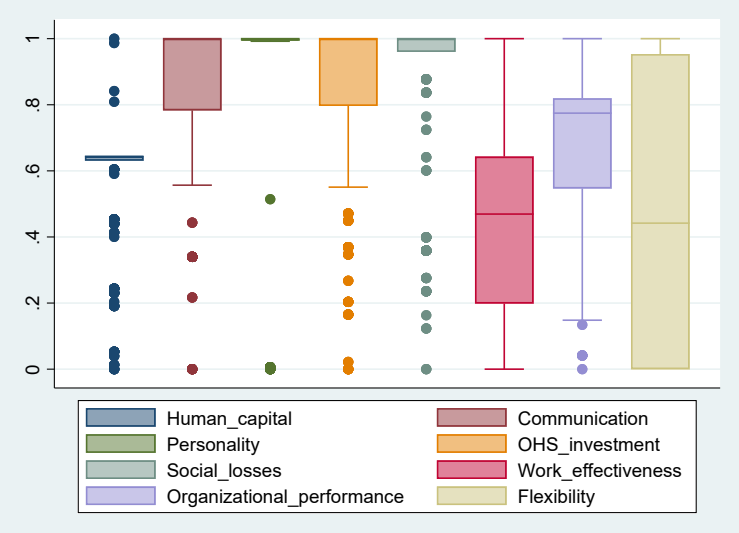

Fig. 1. Graph box results of the model

The construction of a box plot is based on a dataset's quartiles or the values that divide the dataset into equal fourths. The first quartile (Q1) is greater than 25% of the data and less than the other 75%. The second quartile (Q2) sits in the middle, dividing the data in half. Q2 is also known as the median. The third quartile (Q3) is larger than 75% of

the data and smaller than the remaining 25%. In a box and whiskers plot, the ends of the box and its center line mark the locations of these three quartiles. [14]. If we analyze the graph, human capital development and the personality of laborers are very leaked in the construction sector. Regarding social losses indicated the majority of data are out of the 75 % sample. Only flexibility can be taken an account that data is normally distributed.

The number of injuries, illnesses, injuries, and deaths recorded in the construction industry of our country in recent years, not only in the activities or lives of workers and employers but also at the macro level of the human factor, annual lost working days, delayed work volume, construction equipment and tools failure of equipment, as well as the reuse of natural resources caused by wastage of construction materials, medical services to the victim, insurance and medicine costs, based on mandatory contributions, lead to large economic damages and social losses.

Factor analysis finds a few common factors (say, q of them) that linearly reconstruct the p original variables

$$y_{ij} = z_{i1}b_{1j} + z_{i2}b_{2j} + \cdots + z_{iq}b_{qj} + e_{ij} (1)$$

where y_{ij} is the value of the *ith* observation on the jth variable, z_{ik} is the ith observation on the *kth* common factor, b_{kj} is the set of linear coefficients called the factor loadings, and e_{ij} is similar to a residual but is known as the *jth* variable’s unique factor.

Under the factor model, the correlation matrix of x, called Σ, is decomposed by factor analysis as

$$\Sigma = \lambda\Phi\lambda' + \Psi (2)$$

There is obvious freedom in reexpressing a given decomposition of Σ. The default and unrotated forms assume uncorrelated common factors, Φ= I Stata performs this decomposition by an eigenvector calculation. First, an estimate is found for the uniqueness Ψ [15].

During an econometric analysis we used STATA 15.0 software and the following hypotheses were put forward. This study was designed to investigate the links between the effect of OHS management on human capital development:

H0-There is no interaction between human capital development and OHS management in workplaces;

H1- Sufficient Personality on OHS in workplaces has a positive effect on work experience;

H2- OHS investment has a positive effect on work personality in the construction industry;

H3-Human capital has a positive effect on the development of personality, OHS_ investment, organizational_performance, and flexibility in the construction industry;

H4- Organizational performance has a positive effect at work_experience and flexibility of the workers in the construction industry;

H5- Social losses have a positive effect on OHS_investment, human capital, and flexibility of the workers in the construction industry;

H6- Work effectiveness has a positive effect on OHS_investment and Flexibility in the construction industry.

Results are generalized in (*N*= 403) Table 4, which presents sample characteristics

and responses to indicator variables. A loading factor is an association between a variable and a data-extracted factor. The correlation between a factor and a variable derived from the orthogonal rotation method can be seen in the study of the factor loading matrix. Iteration 0 log likelihood = -1019.3881, Iteration 1 is log likelihood = -1015.5024, Iteration 2 is log likelihood = -1014.3756

Iteration 3 is log likelihood = -1014.3519 and Iteration 4 is log likelihood = -1014.3518. Estimation method = ml (Maximum likelihood estimation). Total Log likelihood = -1014.3518.

Model estimation an average cross-sectional unit and is illustrated as:

*Personality = 0.927 + 0.001*Work_experience (3)*

*OHS_investment = 0.580 + 0.248*Personality (4)*

*Human_capital = 0.171 + 0.276*Personality*
*+0.097*OHS_investment*
*+0.094*Organizational_performance*
*-0.008*Flexibility (5)*

*Organizational_performance = 0.715 -0.0005*Work_experience*
*-0.078*Flexibility (6)*

*Social_losses = 0.024+0.702*OHS_investment*
*+0.499*Human_capital*
*-0.007*Flexibility (7)*

*Work_effectiveness = 0.334 +0.128*OHS_investment*
*-0.016*Flexibility (8)*

Table 4.

Factor analysis regression weights among parameters in the model

Latent unobserved variables	Items	Correlations matrix	Factor loading	Error term	
Personality	Work_experience	0.002	0.001	ε_1	0.47
OHS_investment	Personality	0.213***	0.248***	ε_2	0.61
Human_capital	Personality	0.447***	0.276***	ε_3	0.18
	OHS_investment	0.294***	0.097***		
	Organizational_performance	0.245***	0.094**		
	Flexibility	-0.101**	-0.008		
Organizational performance	Work_experience	0.071	-0.0005	ε_4	0.042
	Flexibility	-0.150***	-0.078***		
Social_losses	OHS_investment	0.834***	0.702***	ε_5	0.019
	Human_capital	0.349***	0.499		
	Flexibility	-0.176***	-0.007		
Work Effectiveness	OHS_investment	0.131***	0.128	ε_6	0.065
	Flexibility	-0.047	-0.016		
	Estimation method = ml	Obs = 403	Log-likelihood =- 1014.3		
Likelihood ratio	Chi2_ms(13) | 417.561 p > chi2 0.00	AIC 2080.70 BIC | 2184.6	RMSEA | 0.278 CFI | 0.616		

The results obtained based on the latent model can be expressed as follows. That is, as a result of:

Latent 1, y_1 — one standard deviation change in *Work_experience* will improve

Personality in 0.001 unit. (3)

Latent 2, in which y_2 - one standard deviation changes in *Personality* will improve *OHS_investment by* 0.248 units [16]. (4)

Latent 3, y_3- one standard deviation changes in *Personality, OHS_investment* and *Organizational_performance* will improve *Human_capital by* 0.275, 0.097, and 0.008 units respectively [17]. (5)

Latent 4, y_4-one standard deviation changes in *Work_experience and Flexibility* will decrease *Organizational_performance* by 0.0005 and 0.078 [18]. (6)

Latent 5, y_4-one standard deviation changes in *OHS_investment, Human_capital, and Flexibility* will change *Social_losses* in 0.702, 0.499, and -0.007 [19]. (7)

Latent 6, y_6- one standard deviation changes in *OHS_investment and Flexibility* will change *Work_effectiveness* in *0.128,* and *-0.016* [20] (8) (Table 4).

In the provided data, factor analysis regression weights among parameters in the model were examined. The model included latent unobserved variables such as Personality, Work Experience, OHS Investment, Human Capital, Organizational Performance, Flexibility, Social Losses, and Work Effectiveness.

The correlations matrix displayed the relationships between the items in the model. Factor loadings represented the strength of the relationship between the latent variables and the observed items. Error terms (ε) accounted for the unexplained variance in the observed items.

The results indicated the following regression weights:

Personality had a significant positive effect on Work Experience (0.002) and OHS Investment (0.001). The error term (ε1) associated with Personality was 0.47.

OHS Investment had a significant positive effect on Personality (0.213***), Human Capital (0.447***), Organizational Performance (0.294***), and Social Losses (0.834***). The error term (ε2) associated with OHS Investment was 0.61.

Human Capital had a significant positive effect on Personality (0.276***). The error term (ε3) associated with Human Capital was 0.18.

Organizational Performance had a positive effect on Work Experience (0.071). The error term (ε4) associated with Organizational Performance was 0.042.

Flexibility had a significant negative effect on Personality (-0.101**) and Organizational Performance (-0.150***). The error term (ε5) associated with Social Losses was 0.019.

Social Losses had a significant positive effect on OHS Investment (0.702***). The error term (ε6) associated with Work Effectiveness was 0.065.

The estimation method used was maximum likelihood (ml), and the model had 403 observations. The log-likelihood was -1014.3, and the likelihood ratio test yielded a chi-square value of 417.561 (df=13) with a p-value less than 0.001, indicating a good model fit. The AIC was 2080.70, and the BIC was 2184.6. The RMSEA was 0.278, and the CFI was 0.616.

Discussion:

Impact of human capital development on improving safety performance, mitigating risks, and fostering a proactive safety culture. The research draws upon existing literature,

case studies, and industry best practices to analyze the key components of human capital development specific to health and safety management in construction. It identifies the challenges and barriers faced by organizations in effectively developing human capital in this context and proposes strategies for overcoming them.

As for the obtaining results H0 hypothesis was rejected based on the presence of statistically significant correlations between all the hypothesized factors. However, it was proven during the analysis that personal qualities and communication Latent variables have the opposite effect on social efficiency. This was explained by the fact that according to Cronbach's alpha test of the model, a law with reverse causality was noted.

Therefore, there is an 80 percent correlation between deaths and accidents occurring in construction contracting organizations ($p>0.05$) p-value is 0.002; has a moderate correlation of 62 percent with the number of injuries, ($p>0.05$) p-value is 0.04; and with the total property damage of accidents, 78 percent had a strong correlation ($p>0.05$) with Personality. Noteworthy, the model constructed according to the Pearson correlation test was proved to be statistically significant. Therefore, as a result of neglect and indifference to occupational health issues in the workplace, workers in enterprises and organizations face unexpected social and economic losses. This causes the following negative consequences, which are reflected in the daily expenses of the workers, financial and psychological damages, which sharply affect their work efficiency and productivity. For implementation, and evaluation of Health and Safety regulation formulated following agenda.

- First aid expenses;
- Medicine costs;
- Medical examination expenses;
- Medical expenses;
- Payment for early retirement workers [21];
- Death costs;
- Lost work hours per injury;
- Days of work lost for each injury;
- The number of working days pushed back (delayed) as a result of OHS;
- The number of lost wages [22];
- Absenteeism (employees' temporary inability to be at work);
- Presenteeism (absenteeism of workers while at work);
- The number of people who have lost their ability to work.

Factor loading refers to the strength of the relationship between a latent variable and its corresponding observed variables. It indicates how well the observed variables measure or represent the underlying latent construct. For example, the factor loading of "Personality" on "Work experience" is 0.001, and the factor loading of "OHS investment" on "Personality" is 0.248. The estimation method mentioned is maximum likelihood (ml), which is commonly used in SEM to estimate the model parameters. The log-likelihood value indicates the goodness-of-fit of the model, with higher values indicating a better fit. The likelihood ratio chi-square test compares the fit of the estimated model to a null model. In this case, the chi-square value is 417.561 with 13 degrees of freedom, and the p-value is less than 0.01, suggesting that the estimated model fits significantly better

than the null model.

Overall, based on the limited information provided, it appears that the estimated model may not fit the data well, as indicated by the relatively high RMSEA value (0.278) and the low CFI value (0.616). However, further interpretation and analysis would require additional details about the variables and the research context.

Socio-economic features of the general conceptual basis for ensuring health and safety in the construction industry, as we noted above, national legal norms based on international practice, a general description of construction industry sectors, obtaining licenses for activities, types, and forms of activities, human health and safety of the chain construction network. It is desirable to improve it by researching its implications at national, international and global levels. Global natural resource demand is expanding rapidly, where population growth and economic expansion are two significant contributors to the rise in resource exploitation. These resources are extracted, exchanged, and modified to satisfy human and societal development demands [23].

Latent Variables: Personality: It is a latent variable that is measured indirectly through its relationships with other observed variables. The factor loading values suggest that “Personality” has a relatively strong relationship with “Work_experience” (loading = 0.001) and “OHS_investment” (loading = 0.248). These factor loadings indicate that both work experience and investment in occupational health and safety are influenced by an individual’s personality traits. Human_capital: This latent variable appears to be related to “Personality” (loading = 0.276). However, no error term (ε) or factor loading values are provided for this latent variable, so its relationship with other observed variables is not explicitly shown.

Observed Variables: Work experience: It shows a weak correlation with “Personality” (0.001) and a positive correlation with “Organizational performance” (0.071). The error term (ε4) suggests that there may be unexplained variance in the measurement of work experience. OHS_investment: This variable is highly correlated with “Personality” (0.213) and has positive correlations with “Human_capital” (0.294) and “Social losses” (0.834). The error term (ε2) indicates unexplained variance in the measurement of OHS investment. But industry of healthcare comes at the first after emergencies and personnel. The sector of health is the primary to face a crisis. Digital technologieshad become a significant aspect of the industry of health [24].

Organizational performance: It exhibits a weak positive correlation with “Work experience” (0.071) but no direct relationship with “OHS investment” or any error term provided. Further information is needed to assess its relationships with other variables. Flexibility: This observed variable has weak negative correlations with “Personality” (-0.101) and “Organizational performance” (-0.150). It is unclear whether “Flexibility” is related to other latent or observed variables due to incomplete information.

Conclusion:

Finally, in the construction industry, it is possible to fundamentally reform its conceptual foundations through factors such as the conventional content and interpretation of the new interpretation, modern explanatory approaches, and adding clarifications to them or filling in the gaps. For this, it is necessary to identify the existing

shortcomings in three main sectors (Education, Science, and Business) and to determine the opportunities that help to harmonize them. Based on the results of the regression analysis, we can draw the following conclusions. Communication and Personality: Both communication and personality have a significant positive impact on the dependent variable. An increase in communication or personality is associated with a corresponding increase in the dependent variable. These variables appear to be important factors in explaining the variance in the outcome.

OHS Investment, Social Losses, Work Effectiveness, and Organizational Performance: None of these variables have a statistically significant impact on the dependent variable. The coefficients for these variables are small and their confidence intervals include zero, indicating that they are not significant predictors in this model. Flexibility: Flexibility does not have a statistically significant impact on the dependent variable. The coefficient is negative, but the p-value and confidence interval suggest that it is not a significant predictor. Overall, the model has a moderate level of explanatory power (R-squared = 0.281), indicating that approximately 28.1% of the variance in the dependent variable is explained by the included independent variables. The F-test is significant, further supporting the overall model's statistical significance. It's important to note that these conclusions are based on the specific data and model used in the analysis. Additional analysis and consideration of other factors may be required to fully understand the relationships between these variables and the outcome of interest.

The following author's assumption of warning of the high level of hazards in the workplace can be utterly serious economic-social losses. Sometimes it can be reached as unexpected stress which can cause not only disability but fatality at the workplace. Human capital should be protected from danger and any risk, especially in the construction sector. Trend safety management enforcement implication one more proved as of regular protection from risks, prevention of various occupational diseases and accidents in Uzbekistan building sector.

Declarations

Additional information

No additional information is available for this paper.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References:

[1] Dess, G. D. & Picken, J. C. (1999). Beyond productivity: How leading companies achieve superior performance by leveraging their human capital. New York: American Management Association.

[2] Wright, P. M. & McMahan, G. C. (1992). Theoretical perspectives for human resource management. Journal of Management, 18: 295-320.

[3] Nahapiet, J. & Ghoshal, S. (1998). Social capital, intellectual capital and the organisational

advantage. Academy of Management Review, 23: 242-266.

[4] Gratton. L. & Ghoshal, S. (2003). Managing personal human capital: New ethos for the ‘volunteer’ employee. European Management Journal, 21: 1-10.

[5] Patterson, M., West, M., Lawthom, R. & Nickell, S. (1997). The impact of people management practices on business performance. Issues in People Management. London: Institute of Personnel and Development.

[6] Rumelt, R. (1984). Towards a strategic theory of the firm. In R. Lamb (Ed.) Competitive Strategic Management (556-570). Englewood Cliffs, CA: Prentice-Hall.

[7] https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11110:0::NO: P11110_COUNTRY_ID:102884

[8] Legal Encyclopedic Dictionary. ISBN 978-5-392-00428-7.

[9] General Comment 18, 2006 United Nations Committee on Economic, Social and Cultural Rights - the right to work, General comment No. 18, Adopted on 24 November 2005, Article 6 of the International Covenant on Economic, Social and Cultural Rights” (PDF).

[10] https://kasaba.uz/uzbekiston-kasaba-uyushmalari-federatsiyasi-kengashining-ix-mazhlisi-yakunlari-tugrisida/

[11] https://www.statisticshowto.com/latent-class-analysis-definition/

[12] https://towardsdatascience.com/structural-equation-modeling-dca298798f4d

[13] Killian, M. O., Cimino, A. N., Weller, B. E., & Hyun Seo, C. (2019). A systematic review of latent variable mixture modeling research in social work journals. Journal of Evidence-Based Social Work, 16(2), 192-210. doi: 10.1080/23761407.2019.1577783

[14] https://chartio.com/learn/charts/box-plot-complete-guide/

[15] https://www.stata.com/manuals13/mvfactor.pdf

[16] Russell, J. S., Terborg, J. R. & Powers, M. L. (1985). Organisational performance and organisational level training and support. Personnel Psychology, 38: 849-863.

[17] Patterson, M., West, M., Lawthom, R. & Nickell, S. (1997). The impact of people management practices on business performance. Issues in People Management. London: Institute of Personnel and Development

[18] Osterman, P. (1987). Choice of employment systems in internal labour markets. IndustrialRelations, 26 (1): 48-63.

[19] Maruping, L. M. (2002). Human capital and firm performance: Understanding the impact of employee turnover on competitive advantage. Proceedings of the Academy of Management Conference, Denver.

[20] MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Flexible production systems in the world auto industry. Industrial Relations and Labor Review, 48: 197-221.

[21] Huselid, M. (1995). The impact of human resource management practices on turnover, productivity and corporate financial performance. Academy of Management Journal, 38: 635670.

[22] Ferguson, D. H. & Berger, F. (1985). Employees as assets: A fresh approach to human resource accounting. The Cornell HRA Quarterly. 25 (4): 24-29.

[23] Xiao Gu, Ramez Abubakr Badeeb, Shahid Ali, Zeeshan Khan, Changyong Zhang, Khusniddin Uktamov (2023). Nonlinear impact of natural resources and risk factors on the U.S. economic growth. Resources Policy, Volume 82: 103570. https://doi.org/10.1016/j.resourpol.2023.103570

[24] Muhammad B., Ismailova N, Kuldasheva Z. (2023). The Impact of Innovation and Digitalization on Service Sector at Post-pandemic era, ACM International Conference Proceeding SeriesOpen Access, Pages 334 - 34215 December 2021 5th International Conference on Future Networks and Distributed Systems: The Premier Conference on Smart Next Generation Networking Technologies, ICFNDS 2023.

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100066, Toshkent shahri, Islom Karimov ko'chasi, 49-uy.
+998 99 881-86-98
ilmiymaktab@gmail.com
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