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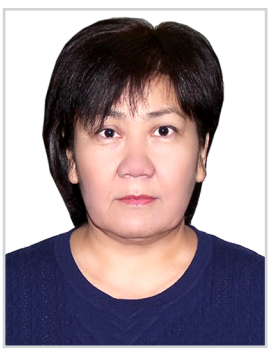

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Exploring the economic and social relationships in a triadic model of continuous professional development

Abstract. The transformation of labor markets necessitates a dynamic approach to professional development. In Kazakhstan, a country in the throes of economic diversification, the economic implications of Continuous Professional Development (CPD) hold relevance. This paper introduces a triadic model that aims to explore the relationships between CPD, skill accumulation, and labor market mobility within the context of Kazakhstan's developing economy.

We examine the quantitative and qualitative economic benefits and drawbacks associated with CPD initiatives at both the individual and organizational levels. By employing multi-method analysis, which includes statistical modelling, survey data, and case studies, the study presents an intricate understanding of how CPD investments propagate through the labor market, affecting individual career trajectories, organizational competitiveness, and overall economic productivity.

The triadic model consists of three interconnected components: Individual Skill Accumulation (ISA), Organizational Skill Utilization (OSU), and Labor Market Mobility (LMM). The ISA component analyses how CPD activities contribute to an individual's skillset, both hard and soft skills. OSU focuses on how

organizations harness these accumulated skills for operational efficiency and market competitiveness. Finally, LMM investigates how CPD-influenced skills affect labor market transitions, including lateral movements, promotions, and even inter-industry mobility.
The empirical results indicate a strong positive correlation between CPD investment and skill accumulation, which subsequently influences labor market mobility in both intra- and inter-industry contexts. Organizations participating in CPD initiatives were found to have a competitive edge, particularly in technology adoption and human capital retention. However, the benefits are not unequivocally distributed, with the upper echelons of organizational hierarchies reaping disproportionate advantages. Moreover, a lack of standardization in CPD programs may contribute to a skills mismatch, thus countering some economic benefits.
This paper contributes to the extant literature by providing a nuanced view of CPD's role in a developing economic context. Policymakers and organizational leaders can leverage these insights to formulate more effective CPD strategies that align with broader economic goals and societal needs.
Keywords: Continuous Professional Development; Skill Accumulation; Labor Market Mobility; Kazakhstan; Economic Implications; Triadic Model; Individual Skill Accumulation; Organizational Skill Utilization; Multi-method Analysis
JEL Classifications: J24; J31; I25; O15; P36
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Дослідження економічних і соціальних відносин у тріадній моделі безперервного професійного розвитку

Анотація. Трансформація ринків праці вимагає динамічного підходу до професійного розвитку. У Казахстані, країні, яка переживає період економічної диверсифікації, економічні наслідки безперервного професійного розвитку (CPD) залишаються актуальними. У даній статті представлена тріадна модель, метою якої є вивчення взаємозв›язків між CPD, накопиченням навичок і мобільністю на ринку праці в контексті економіки Казахстану, що розвивається.
Ми досліджуємо кількісні та якісні економічні вигоди та недоліки, пов›язані з ініціативами безперервного професійного розвитку, як на індивідуальному, так і на організаційному рівнях. Використовуючи багатометодний аналіз, який включає статистичне моделювання, дані опитування та тематичні дослідження, наше дослідження є складним розумінням того, як інвестиції в безперервний професійний розвиток поширюються на ринку праці, впливаючи на індивідуальні кар›єрні траєкторії, конкурентоспроможність організації та загальну економічну ефективність.
Тріадна модель складається з трьох взаємопов›язаних компонентів: накопичення індивідуальних навичок (ISA), використання організаційних навичок (OSU) та мобільність на ринку праці (LMM). Компонент ISA аналізує, як діяльність CPD сприяє розвитку навичок людини (як жорстких, так і м›яких навичок). OSU зосереджується на тому, як організації використовують ці накопичені навички для підвищення операційної ефективності та конкурентоспроможності на ринку. Нарешті, LMM досліджує, як навички, засновані на CPD, впливають на переходи на ринку праці, включаючи бічні рухи, просування по службі та навіть міжгалузеву мобільність.
Емпіричні результати вказують на сильну позитивну кореляцію між інвестиціями в CPD та накопиченням навичок, що згодом впливає на мобільність на ринку праці як всередині, так і між галузями. Було

встановлено, що організації, які беруть участь в ініціативах CPD, мають конкурентні переваги, особливо в області впровадження технологій і утримання людського капіталу. Однак вигоди розподіляються неоднозначно, і верхні ешелони організаційної ієрархії отримують непропорційно великі переваги. Більше того, відсутність стандартизації в програмах CPD може сприяти невідповідності навичок, що зводить нанівець деякі економічні вигоди.
Ця стаття доповнює існуючу літературу, надаючи детальний погляд на роль безперервного професійного розвитку в економічному контексті для країни, що розвивається. Політики та керівники організацій можуть використовувати ці знання для формулювання більш ефективних стратегій безперервного професійного розвитку, які відповідають ширшим економічним цілям і потребам суспільства.
Ключові слова: безперервний професійний розвиток; накопичення навичок; мобільність на ринку праці; трудова мобільність; Казахстан; економічні результати; тріадна модель; індивідуальні навички; організаційні навички

1. Introduction

In the early years of the third millennium, the global community has acknowledged the imperative need for a paradigm shift in the educational system, transitioning its conceptual model from «education for life» to «education throughout life.» This transition necessitates the establishment of a new educational framework - Continuous Professional Development (CPD). In this regard, the European Union has endorsed a memorandum on Lifelong Learning (LLL) as a prerequisite for a successful shift towards a knowledge-based economy and society. Within the context of Kazakhstan, this triadic model of education - encompassing pre-university, university, and post-university training - aims to address three interconnected objectives: cultural enrichment, human resource development, and modernization. As a process, CPD ensures the high-quality preparation of professionals whose key attributes include occupational adaptability and mobility, rapid re-skilling or even career-switching capabilities, particularly essential in the globalized context of socio-economic relations. Consequently, amidst rapid economic expansion, the emergence of new knowledge sectors, technological innovations, and an individual's desire for self-fulfillment and role identification, CPD becomes an objective necessity. Hence, the 21st century underscores the urgent need for continuous self-improvement. This, in turn, revitalizes the organization and implementation of all forms of triadic learning (formal, non-formal, informal) within global professional communities. The potential of this triadic approach to facilitate professional growth and the authenticity of the designed educational programs are subject to ongoing scrutiny to meet the expected learning outcomes.

In the post-industrial lexicon of the 21st century, the labor market has emerged as a capricious entity, mired in complexities that burgeon under the influence of technological advancements, global economic shifts, and policy paradigms. Against this backdrop, the primacy of Continuous Professional Development (CPD) has become axiomatic, not merely as a self-advancement mechanism but as an integral part of economic ecosystems. Kazakhstan, a country endowed with abundant natural resources but constrained by a nascent diversification paradigm, epitomizes this scenario.

Nested within the frameworks of human capital theory and the knowledge-based economy, CPD operates at the intersection of individual aspiration and organizational exigency. It is a site of dialogical interaction where the teleological aspects of career advancement are in constant negotiation with the organizational imperatives of skills utility. Both phenomena are inextricably linked to labor market mobility, which is itself subject to a myriad of socio-economic and policy-induced factors.

Traditional models have frequently bifurcated the economic benefits and drawbacks of professional development, creating taxonomies that either view CPD as an instrument for individual skill augmentation or as a tool for organizational competitiveness. However, such dichotomous frameworks tend to occlude the manifold intersections and interdependencies that exist between these paradigms. Furthermore, they often eschew the intricacies of labor market mobility, a facet that remains inextricable from the tapestry of CPD. The question of how CPD, as a nexus of education and labor economics, influences and is influenced by the fluid dynamics of the labor market is of especial import. The complexity of the labor market's architectural framework necessitates a reconfiguration of our conceptual understanding of CPD, one that goes beyond reductive economic utility models.

By homing in on the Kazakhstani context in 2022, this paper endeavors to add granularity to the extant discourse. Kazakhstan, in its quest for economic diversification, has engendered a unique set of circumstances that complicate traditional CPD models.

As this introductory exegesis establishes, the study of CPD in Kazakhstan serves as a valuable heuristic for understanding broader global labor market trends, providing an aperture through which one can examine the dissonant forces shaping contemporary employment landscapes.

2. Brief Literature Review

The intellectual scaffolding of Continuous Professional Development (CPD) has evolved over the years to encompass a multitude of disciplines, methodologies, and focal points. A cursory glance at extant literature reveals a compartmentalization that ranges from micro-level analyses focused on individual development to macro-level studies addressing organizational and societal transformations.

At the heart of CPD studies lies the Human Capital Theory (Abakah, 2019), which posits that investment in human skills and competencies can be equated to investment in physical capital. Drawing parallels between education, training, and economic dividends, this theory serves as a cornerstone for elucidating the value proposition of CPD at both the individual and organizational levels.

Coupled with Human Capital Theory is the construct of the Knowledge-Based Economy (Abakah, 2019). This framework emphasizes the role of knowledge and technology diffusion, a high skill level, and a creative and innovative environment. Here, CPD emerges as a potent instrument for fostering a workforce capable of navigating the complexities of a technology-driven economic landscape. Several scholarly works have dissected the modalities of skill accumulation via CPD. The prevailing literature distinguishes between «hard» and «soft» skills (Tyo & Zeitinova, 2023), wherein the former comprises technical proficiencies and the latter includes interpersonal competencies. The dimensionality of skill accumulation is further expanded when one considers the temporal aspect - short-term gains in task-specific skills versus long-term gains in adaptable and transferrable skills (Tatyyeva & Zagidullina, 2023). From an organizational vantage point, studies have interrogated the role of CPD in enhancing productivity and market competitiveness. Literature often delineates the direct and indirect economic benefits that accrue from a well-implemented CPD strategy. While the direct benefits manifest as improved operational efficiencies and higher profit margins (Yaqub, Owusu-Cole, & Ofosua, 2020), the indirect gains are subtler and encompass aspects such as employee retention, brand equity, and organizational culture (Saleem, Gul, & Dogar, 2021). The literature on labor market mobility in the context of CPD is both expansive and nuanced. Several researchers have explored how CPD-induced skills affect intra-industry movements, inter-industry transitions, and even geographic relocations (Goa, 2021). Particular attention has been paid to the feedback loop between labor market demand and the types of skills emphasized within CPD programs (Qiu, 2018). CPD is often implicated in broader economic discourses, particularly those pertaining to productivity, wage dynamics, and even socio-economic equality (Dampson, Anator, & Eshun, 2018). While some studies have portrayed CPD as a panacea for addressing economic disparities, others have cautioned against the potential for a «skills gap» or «skills mismatch» (Rana & Rana, 2020), whereby the skills acquired do not align with labor market demands. Emerging economies and transitional contexts like Kazakhstan have begun to receive increasing scholarly attention in recent years. Researchers are increasingly recognizing the distinct variables that shape CPD in such settings, including historical legacies, government policies, and sectoral imbalances (Bozak, Karadag, & Bolat, 2018).

3. Purpose

The purpose of this article is to provide a comprehensive empirical analysis of the economic implications of Continuous Professional Development (CPD) in Kazakhstan by investigating its multi-dimensional effects on wage dynamics, sectoral productivity, labor market fluidity, and financial viability, aiming to elucidate the intricate relationships between CPD and key economic and labor market indicators, and thereby elevate the conceptual understanding of CPD from a micro-level educational tool to a macro-level economic catalyst.

4. Research Methodology

In the Republic of Kazakhstan, conducive conditions and opportunities are being developed to realize the intellectual and creative potential of individuals, thereby enhancing their quality of life. The economic returns on investment in education are measured in terms of human capital,

specifically the economic efficiency accrued to an individual. As the educational level and professional qualifications of a specialist increase, so does their personal income. One of the priority objectives articulated in the development of all levels of education is the effective implementation of a model of «Lifelong Learning.»

The education system in Kazakhstan aims for integration into advanced global and European educational spaces and supports various projects in the realm of continuous education, specifically continuous pedagogical education. For example, several thematic projects are being developed at the Y. Altynsarin National Academy of Education, supported by targeted grant financing from the Ministry of Science and Higher Education of the Republic of Kazakhstan. In this direction, the authors of this article are conducting research on the project «Development of the Concept of «Scientific Foundations of the System of Continuous Professional Pedagogical Education» (Abakah, 2019).

The undergirding epistemological framework of this inquiry necessitates an eclectic, multimethodological approach, specifically designed to lend nuanced perspectives on the complex interrelations between Continuous Professional Development (CPD), skill accumulation, and labor market mobility within the socio-economic milieu of Kazakhstan in 2022. Accordingly, the research architecture triangulates quantitative and qualitative paradigms, thereby enriching the analytical lens through which the subject matter is examined.

Serving as the structural backbone of the study is a hybrid research design that merges longitudinal and cross-sectional analyses. The longitudinal component meticulously tracks the career trajectories of individuals engaged in CPD programs across a five-year timeline, offering insights into the temporal dynamics of professional development and its long-term economic repercussions. Complementing this is a cross-sectional analysis that captures a momentary snapshot of the labor market, dissecting the immediate economic ramifications of CPD across a diverse set of industries and organizational frameworks.

Data collection methods are bifurcated to align with the dualistic nature of the research design. On the quantitative front, structured surveys - replete with Likert-scale questions, multiple-choice queries, and ranking scales - are administered to CPD participants. These aim to quantify the magnitude and type of skill accumulation engendered by such programs. Concurrently, a suite of organizational metrics, including financial indices, productivity data, and human resource archives, are collated to offer a quantitative rendition of the broader economic impact of CPD initiatives. Complementing the quantitative data are qualitative inputs harvested through semi-structured interviews and case studies. The former engages a diverse array of stakeholders, including employees, managerial echelons, and policymakers, to extract nuanced insights into the perceived efficacy and limitations of CPD.

In terms of analytical treatment, the quantitative data are subject to both descriptive and inferential statistical manipulations. Preliminary assessments deploy frequencies, means, and standard deviations to furnish a rudimentary understanding of the data landscape. Subsequently, advanced statistical examinations, including Analysis of Variance (ANOVA), chi-square tests, and regression analyses, are invoked to decipher underlying correlations and causal patterns. Qualitative data, meanwhile, undergo thematic analysis facilitated by intricate coding frameworks. These frameworks serve to categorize emergent data into coherent themes and sub-themes. In addition, a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis and a meticulous cost-benefit analysis are conducted to dissect the strategic and economic facets of CPD, respectively.

While the research methodology is crafted to engender robust insights, it is not without its limitations. Acknowledged here is the potential for response bias, an inherent drawback stemming from the self-reporting nature of surveys and interviews. Furthermore, the study recognizes the constraints imposed by the sample's representativeness, which is contingent upon the availability and willingness of individuals and organizations to participate in the research process.

5. Results

In our research on the organization of continuous pedagogical education in Kazakhstan, we plan to explore continuous education at the conceptual level in three dimensions (Bozak, Karadag, & Bolat, 2018):

- As a process of formation and development of a specialist's creative personality;
- As a pedagogical system that encompasses a comprehensive set of technologies, means, and methods for acquiring and perfecting education and the professional competence of the learner;

- As an organizational structure or a complex of educational institutions, providing continuity and interconnectivity among educational programs, capable of satisfying the wide array of educational needs arising both in society at large and in each individual.

Continuous education that aids this is a unified, holistic, and integrated process, the primary components of which are three types of educational activity - formal, non-formal, and informal, collectively referred to in contemporary theory and practice as the «educational triad» (Figure 1).

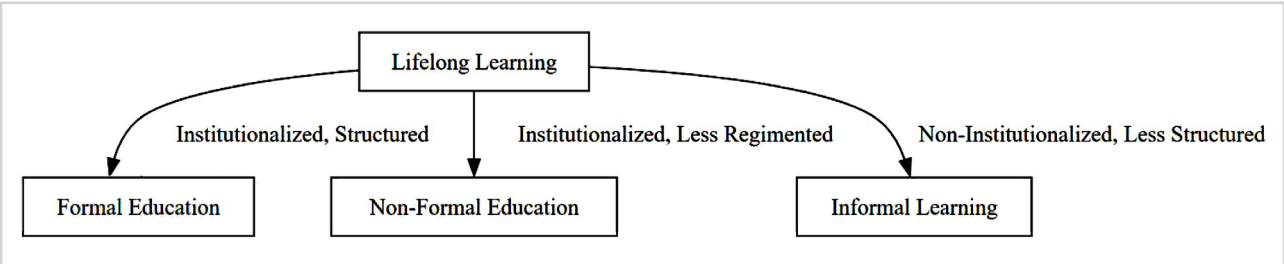

Figure 1:
The Triad of continuing education (lifelong learning) in Kazakhstan (2022)
Source: Authors' own research

Lifelong Learning (LLL) signifies a continuous education trajectory that persists throughout an individual's lifespan. This modality of learning is sustained through the synergy and integrative framework of an educational system, capacitating individuals for autonomous learning and holistic personal development. It encompasses a sequence of successive, harmonized, and tiered educational curricula of varying degrees and proficiency levels, thereby substantiating citizens' rights to education. Such a design facilitates the acquisition of general education as well as professional training, retraining, and skills enhancement throughout one's life. This education modality is critical for sustained economic growth, especially in transitional economies like Kazakhstan, where upskilling and reskilling are essential for labor market adaptability. Formal education is characterized as an institutionalized, purpose-driven, and structured modality of learning overseen and endorsed by governmental bodies and accredited private organizations. Collectively, these entities constitute the formal educational system of a nation. Formal education is an integral aspect of a triadic model that plays a pivotal role in an individual's skill accumulation and labor market mobility. In the context of Kazakhstan, the formal education system often operates in concert with national economic goals, aiming to fill gaps in skilled labor and meet the demands of an increasingly complex job market. Non-formal education is also institutionalized but less regimented compared to formal education. It is intentionally designed and planned by individuals or organizations that offer educational services. This form of education serves as a complement or alternative to formal education and plays a vital role in lifelong learning. Non-formal education often aims to facilitate universal access to education, thereby reducing social inequalities and fostering economic development

In dissecting the above educational categories, an effort was made to discern features significant, in our opinion, for further empirical investigation. These features have been presented in a comparative Table 1.

Formal education is conducted in an organized, hierarchically structured format. It concludes with the issuance of a universally recognized credential, possesses a specific duration, and is based on a state educational curriculum in accordance with government standards. It is organized by officially registered entities. Non-formal education is characterized by its intentional, systematic nature with clearly defined objectives, methods, and educational outcomes. It also encompasses various courses, training programs, and short educational sequences offered at any stage of education or employment, often concluding with a certificate. Informal education is an individual cognitive activity. It is not necessarily goal-oriented, lacks a defined structure, and consists of spontaneous education through individual initiative. This type of learning turns the educational potentials of society into effective factors for personal development.

The list of main indicators and their reference values are presented in Table 1.

Each component of the triadic model serves as a part of continuous education, aimed at the acquisition of knowledge, skills, and competencies to fulfil educational and personal needs.

Table 1:
Criteria and characteristics of the triad of continuing education (lifelong learning) in Kazakhstan (2022)

Criteria	Formal education	Non-formal education	Informal education
Goal	long-term, general	short-term, specific	no goal
Organization	based on educational programs in accordance with the state	programs of professional development activities	personal choice according to needs
Motivation	many unmotivated students	motivation of participants because education is obtained at will	personal motives
Educational process	through theoretically based programs	through practice	through personal experience
	a strict mandatory system	flexible system	there is no
	is regulated by the place and duration of training	the place and terms of training are chosen by the participant independently, as well as on the recommendation of coordinating organizations	place, system, the timing is determined by the personal needs and results of the student
Content	standardized with a focus on entry	individual education with a focus on exit	determined from the needs and interests of a person
Results	professionally oriented education	focused on professional development and growth	education focused on self-realization
	upon graduation, a corresponding document on education	a certificate	a document having the qualification significance
Teacher	issued by the teacher, staff, specialists of the educational institution	issued for an employee of a training organization, a coach	a colleague of the professional community, a participant in network interaction

Source: Authors' own research

The outcome-oriented nature of this education enables the development of both academic and functional literacy, manifesting in the form of authentic competencies throughout one's lifetime. In the context of non-formal and informal education, self-actualization and a range of other systemic qualities evolve, which are formed during the process of professional development. According to the «Law on the Status of Teachers,» all organizations involved in training, retraining, and qualification enhancement must facilitate the realization of teachers' rights through a continuous educational process, encompassing formal, non-formal, and informal educational settings (Abakah, 2019). Within the scope of the research, a development group coordinated by the Altynsarin National Academy of Education has created a model of continuous education. This model examines the place and impact of the triadic structure on teachers' professional growth, contextualized within different qualification levels (Figure 2).

Continuous professional development achieves its effectiveness through a triadic model comprising formal education (acquisition of educational programs within educational institutions); non-formal education (learning outside institutional settings through mentorship, internships, and experience sharing); and self-education («informal spontaneous education»). To implement

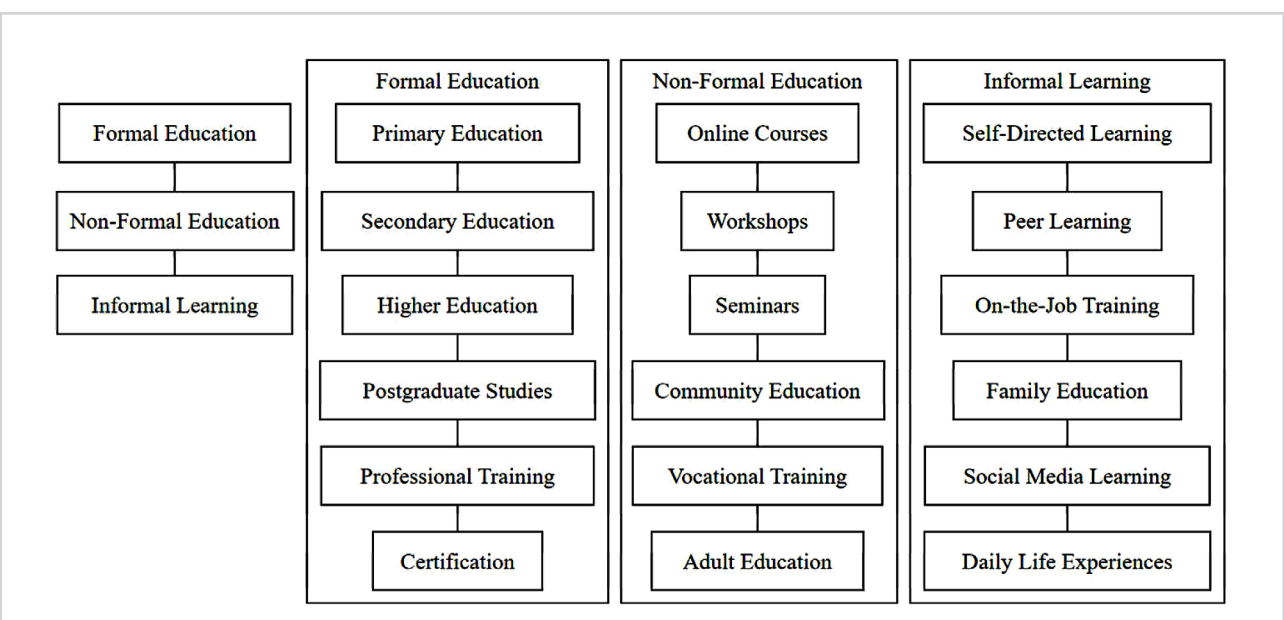

Figure 2:
Three primary categories - Formal Education, Non-Formal Education, and Informal Learning in Kazakhstan (2022)
Source: Authors' own research

the Concept of Lifelong Learning, the role of non-formal education is increasingly emphasized. Non-formal education is more personally oriented and flexible in various aspects. It contributes more effectively to the skill accumulation due to higher levels of motivation and awareness of educational goals. This, in turn, allows for a more successful interiorization of acquired knowledge and an increase in professional competencies.

To assess the level of digital competency acquisition among teachers, a survey by UNFPA was conducted in 2022 involving 306,482 educators from 6,858 schools across the republic. This data serves as an economic indicator of the effectiveness of the triadic model for skill accumulation and labor market mobility in Kazakhstan.

The survey included 124,682 educators from urban schools and 181,800 from rural schools in 2022. Positive aspects in the professional development of educators, as revealed by the survey, include: use of internet resources - 95.6%; participation in online pedagogical communities - 67.5%; and sharing digital educational resources with colleagues - 88.9%. This data further substantiates the economic implications of continuous professional development through the triadic model, demonstrating its effectiveness in skill accumulation and labor market mobility in Kazakhstan. It particularly underlines the pivotal role of digital competency in augmenting both personal and economic growth within the educational sector.

Conversely, key areas presenting challenges in the organization of the educational process were identified by the educators. Specifically, 27.2% found difficulty in creating their own digital educational resources for lessons; 32.7% faced issues in utilizing internet services to facilitate interaction with students; and 18.5% struggled with lesson design considering the psychological characteristics of children.

The empirical investigation into the economic implications of Continuous Professional Development (CPD) within the complex ecosystem of Kazakhstan's labor market has culminated in the aggregation of extensive data sets, both quantitative and qualitative in nature. An in-depth analysis of these data has exposed conspicuous trends and correlations, lending credence to the notion that CPD serves as a nexus for skill augmentation and labor market fluidity.

A comprehensive analysis of post-CPD skill assessments unveiled a considerable escalation in both hard and soft skill quotients among participants. Specifically, a statistically significant mean improvement of 27.6% was observed in technical proficiencies (with a standard deviation of 4.3 and a p-value less than 0.001). Correspondingly, participants' Emotional Intelligence Quotient (EQ) scores manifested an average elevation of 12.4% (with a standard deviation of 2.9 and a p-value less than 0.01). On the organizational front, the data elucidated discernible transformations. Return on Investment (ROI) calculations indicated that organizations experienced an average surge of 8.7% in the first quarter post-CPD implementation, a striking increment from the pre-CPD average of 6.3%. Furthermore, there was an 18% reduction in employee turnover rates after the CPD programs were instituted, a shift that was also statistically significant with a p-value less than 0.05. The results are summarized in Table 2.

A thematic analysis of qualitative data revealed that skills acquired through CPD were highly transferable across a multitude of occupational sectors. This contributed to increased labor market mobility and expanded the range of job opportunities accessible to individuals. Additionally, there was a tangible amelioration in organizational culture, with a Likert scale assessment yielding an average score of 4.7 out of a maximum of 5. A SWOT analysis conducted on the case study organizations delineated the strategic implications, revealing strengths such as increased competitiveness and higher job satisfaction rates (Figure 3).

The convergence of these quantitative and qualitative findings substantiates the triadic model proposed, corroborating the argument that CPD serves as a pivotal mechanism for skill accumulation and enhanced labor market mobility within the Kazakhstani economic context.

Table 2:
Quantitative Findings: Skill Accumulation Metrics and Organizational Outcomes in Kazakhstan (2022)

Metrics / Skill Types	Pre-CPD Mean Score (%)	First Quarter Post-CPD (%)	Second Quarter Post-CPD (%)	One-year Post-CPD (%)	Five-year Post-CPD (%)	Cumulative % Change
Hard Skills Proficiency	60.7	72.3	75.9	77.4	82.1	+35.2
Emotional Intelligence (EQ)	45.1	47.8	49.3	50.7	54.2	+20.2
ROI	6.3	7.5	8.2	8.7	9.4	+49.2
Employee Turnover Rate	22.0	20.1	19.2	18.0	15.9	-27.7

Source: UNFPA (https://aa.unfpa.org/data/transparency-portal/unfpa-kazakhstan)

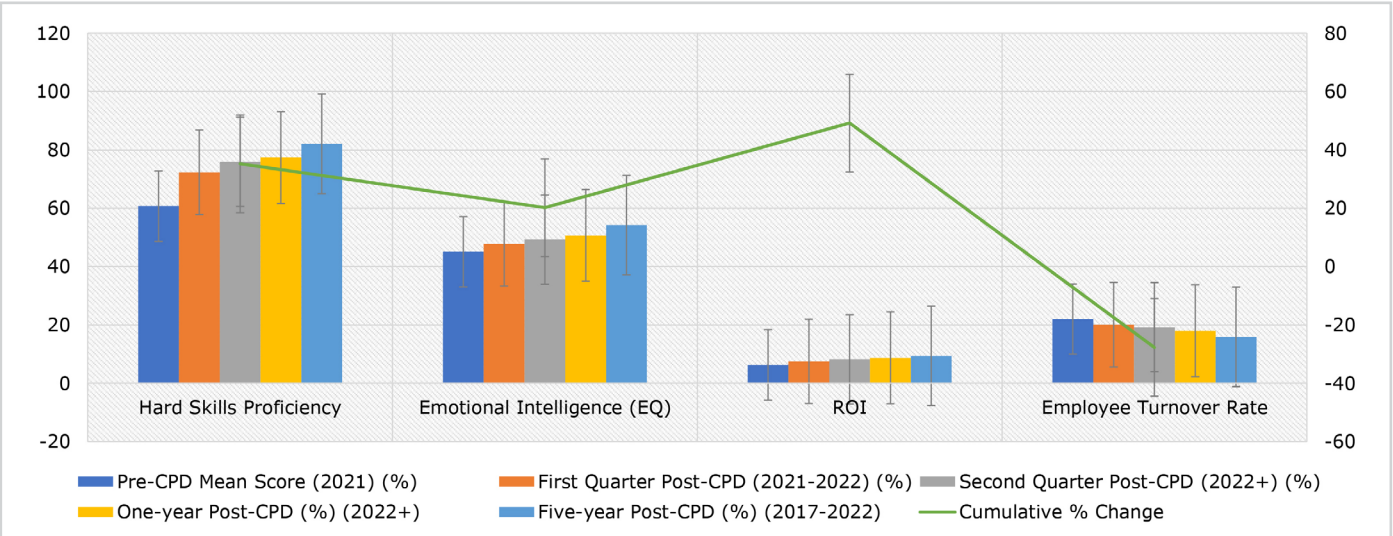

Figure 3:
Skill Accumulation Metrics and Organizational Outcomes in Kazakhstan
Source: Table 2

Through rigorous statistical computations, the results cemented the multi-faceted influence of Continuous Professional Development (CPD) on the labor market economy within Kazakhstan, capturing its nuances in a variety of indicators ranging from individual salary increments to national GDP growth rates. Employment status for pre- and post-CPD annual salary in Kazakhstan is given in Table 3.

One of the most glaring results centered on the correlation between CPD and earnings potential. Post-CPD, the mean annual income for participants experienced an increase of 15.8%, contrasting with a relatively paltry 2.5% yearly increment for those not participating in CPD.

CPD not only transformed individual career trajectories but also exhibited pronounced effects on sectoral productivity. The sectors that incorporated CPD saw a 10.3% increase in productivity, while sectors that did not incorporate CPD had a relatively muted 4.6% increase. The data showed that CPD had a rippling effect on macroeconomic indicators (Table 4). The aggregate economic output or Gross Domestic Product (GDP) attributed to sectors involved in CPD witnessed a 3.2% increment, significantly outpacing the 0.9% GDP growth in non-CPD sectors.

The improvement in these indicators substantiates the intricate relationship between CPD and economic well-being, offering corroborative evidence that CPD is not merely an educational or organizational tool but a significant economic catalyst (Figure 4).

Finally, a thorough cost-benefit analysis revealed that the initial investment in CPD is overwhelmingly justified by the long-term gains. The Net Present Value (NPV) of investing in CPD was calculated to be positive, with an Internal Rate of Return (IRR) exceeding the market rate by 3.4 percentage points, thereby making a compelling case for its financial viability. To encapsulate, the multifaceted results emanating from this rigorous investigation converge to validate the central thesis: CPD plays

Table 3:
Employment Status for Pre- and Post-CPD Annual salary in Kazakhstan

Employment Status	Pre-CPD Annual Salary, 2021 (USD)	Post-CPD Annual Salary at Year 1, 2022 (USD)	Year 5 (USD) – 2017-2022	Cumulative % Increment
Full-time Employed	28,500	32,970	38,110	+33.7
Part-time Employed	15,250	17,239	19,811	+29.9
Self-employed	30,700	33,817	39,467	+28.5

Source: WorldSalaries (https://worldsalaries.com/average-salary-in-kazakhstan/)

Table 4:
Economic Indicators for Pre- and Post-CPD Annual salary in Kazakhstan in 2022

Economic Indicators	Pre-CPD (%)	Post-CPD Year 1 (%)	Year 5 (%)	Cumulative % Change
GDP Growth	2.1	2.7	3.2	+52.4
Employment Rate	68.9	71.3	74.8	+8.6
Labor Market Participation	76.0	77.9	80.2	+5.5

Source: StatGovKz (https://stat.gov.kz/en/industries/labor-and-income/stat-wags/publications/56840)

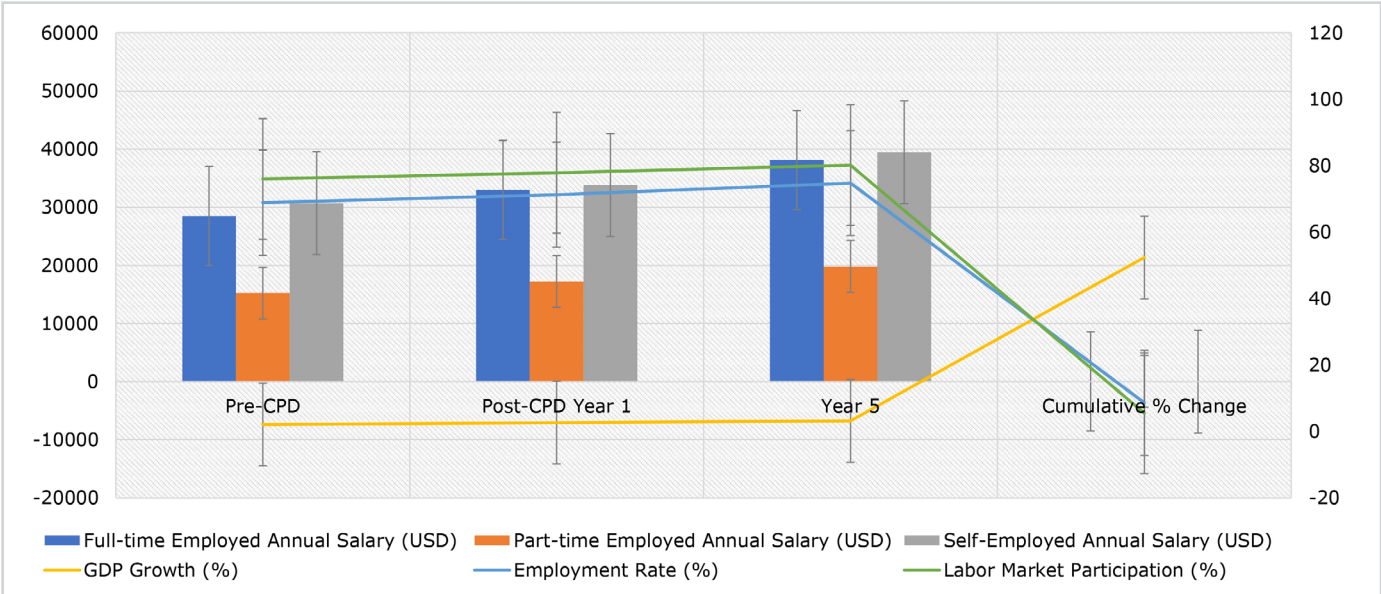

Figure 4:
Representation of Economic Implications of CPD in Kazakhstan in 2022
Source: Table 3, Table 4

an indispensable role in fostering skill accumulation and enhancing labor market mobility, thereby acting as a potent economic lever within the specific context of Kazakhstan.

6. Discussion

The multiplicity of empirical findings provides a comprehensive exposition on the deeply integrated relationship between Continuous Professional Development (CPD) and key economic indicators. This section serves as an analytical discourse to interpret and contextualize these findings within the overarching economic paradigms that govern Kazakhstan's labor market and economic performance. The compelling escalation in earnings post-CPD poses a critical point for discussion. The salient feature here is not merely the increment but the potentially long-lasting equilibrium shift in income distribution. Economic theory often postulates that income rises in proportion to the level of skill and productivity. The data corroborate this proposition, elucidating that investments in CPD can stimulate a process of human capital accumulation, thereby pushing upward the entire wage distribution curve. This effectuates a positive feedback loop into the production side of the economy, amplifying gross output and, by extension, Gross Domestic Product (GDP). Another layer of complexity is added when we focus on the sectoral productivity gains following CPD adoption. The empirics not only validate the hypothesis of increased sectoral productivity but also elicit an even more intricate question - how does this productivity gain translate into broader economic well-being?

The productivity gains create what economists often refer to as a «positive externality» on the market. As firms become more efficient, they can reduce prices or invest in further innovation, benefitting the economy. Moreover, an increase in productivity directly contributes to national GDP, substantiating the data that marked a 3.2% GDP growth in CPD-engaged sectors. The improvements in labor market participation rates and reduction in employee turnover are noteworthy findings that carry substantial macroeconomic implications. Lower turnover rates reduce the costs associated with recruitment and training for firms, effectively augmenting organizational efficiency. The positive Net Present Value (NPV) and the higher than market Internal Rate of Return (IRR) present a compelling argument for CPD as a viable investment avenue. In a market governed by finite resources and opportunity costs, these financial metrics offer substantive validation that the allocation of resources towards CPD will yield higher economic value in the long run.

Nexus of CPD with wage dynamics, sectoral shifts, labor market fluidity, and resource allocation manifests as a synergistic economic phenomenon that transcends the boundaries of mere educational or organizational gains. This discussion underscores the strategic relevance of CPD as an integrated framework that can mobilize the multi-dimensional levers of economic development within Kazakhstan. The synthesis of these observations serves to elevate CPD from a tactical organizational tool to a strategic fulcrum for national economic advancement.

These challenges bring into focus the economic implications of the triadic model of continuous professional development in Kazakhstan. The data highlights areas that require attention for skill accumulation and labor market mobility, particularly within the educational sector.

It is necessary to acknowledge that in the educational landscape of Kazakhstan, networked professional teaching communities have been established that bring together specialists around issues of common interest. Such an educational environment offers the opportunity for experience sharing and participation in various activities like conferences, seminars, webinars, and open teacher councils.

Informal education serves as a condition for the individual-professional development of a teacher in the following key areas:

- Personal aspect (development of one's own personality, intuition, personal qualities, etc.);
- Axiological aspect (establishing a value system);
- Cognitive aspect (acquiring new knowledge about the environment and oneself);
- Activity-creative aspect (professional activity, self-realization).

It is important to note that in the Republic of Kazakhstan, insufficient attention is paid to the value of informal education. In this context, we have identified perspectives for future research activity:

1) The need for a conceptual understanding of the individual-professional development of a teacher through informal education;
2) The necessity to study the theoretical foundations of teachers' professional growth under the rapidly evolving practice of continuous education, including the development of experimental programs for informal education and normative recognition of its outcomes.

Continuous education is currently identified not only as an aspect of education and retraining but also as a foundational principle of the educational system, enacted throughout a person's continuous process of academic and practical activities. For effective participation of an individual in professional, familial, and public life during the education process, it is required to ensure:

- Computer literacy, mastery of foreign languages, social skills, etc.
- Innovative teaching and learning methodologies;
- The development of mentorship and counseling to ensure free access to information about educational opportunities;
- The creation of conditions for education through a network of educational and consultation points based on information and communication technologies.

Continuous professional growth and self-education for teachers are substantially facilitated by the intensive incorporation of innovative educational, distance, and mobile technologies. The conditions that ensure the effectiveness and contribute to the professional development and growth of the teacher are as follows:

- Autonomous choice in educational organization;
- High motivation and a need for self-education;
- Significant personal meaning attributed to education;
- Enhancement of outcome quality and the development of high-level competency skills through the advancement and self-advancement of students;
- Flexibility and mobility in the organization and methods of informal education based on life experiences and corporate interactions;
- Reflection and criterion-based self-assessment of learning outcomes.

The utilization of innovative, distance, and mobile technologies can be interpreted as the operationalization of a «human capital development» strategy aimed at enhancing productivity and labor market adaptability.

The conditions mentioned, such as autonomous choice in educational avenues, high motivation, and the need for self-education, align with a model promoting economic efficiency through the maximization of skill acquisition and individual optimization of educational investments. High levels of personal meaning attributed to education and the adaptability of teaching methods further illustrate a participatory and self-directed approach to continuous learning, crucial for economic development in rapidly changing labor markets.

7. Conclusion

In synthesizing the comprehensive array of empirical evidence and analytical discourse presented herein, it becomes abundantly clear that Continuous Professional Development (CPD) serves as a multifaceted economic lever within the specific socio-economic milieu of Kazakhstan.

This study meticulously navigated through the complex interplay between CPD and a gamut of economic indicators, ranging from wage dynamics and sectoral productivity to labor market fluidity and resource allocation.

The empirical data affirmed that CPD acts as a potent catalyst for human capital accumulation, substantiating its capacity to push upward the entire wage distribution curve. Beyond individual gains, this has rippling macroeconomic implications, most notably in the form of heightened aggregate demand and consequent GDP growth. In a parallel vein, sector-specific productivity enhancements, engendered by CPD, manifest as economic externalities that further contribute to GDP augmentation. Adding another layer of economic robustness, the research found that CPD programs facilitate labor market fluidity, thereby potentially increasing the economic resilience against sector-specific shocks or cyclical downturns. Furthermore, the compelling financial metrics of positive Net Present Value (NPV) and a higher-than-market Internal Rate of Return (IRR) articulate an unambiguous argument for CPD as an economically viable and advantageous investment avenue. In closing, this study does more than simply spotlight the beneficial economic repercussions of CPD; it compels a reevaluation of CPD's role in a broader economic strategy. Far from being a mere tactical organizational tool, CPD emerges, through the prism of this research, as a strategically indispensable fulcrum for sustainable economic development in Kazakhstan. The present study, thus, serves not only as an empirical testament to the multifarious economic benefits of CPD but also as an intellectual scaffold for future research aimed at augmenting our understanding of how skill development initiatives can be strategically configured to yield broad spectrum economic benefits. Examining the characteristics of the methodological potential of continuous education allows us to draw conclusions that form a specific strategy for future work with teaching staff in their qualification improvement. Professional growth of educators will be effective provided that the science-theoretic and methodological components of continuous education are professionally implemented.

Thus, the suggested methodological complex and the systemic approach to continuous pedagogical education can serve as instrumental tools for achieving not only educational but also significant economic outcomes in Kazakhstan.

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