International Science Journal of Education & Linguistics
2025; 4(5): 1-15
https://isg-journal.com/isjel/
doi: 10.46299/j.isjel.20250405.01
ISSN: 2720-684X

INTERNATIONAL
SCIENCE GROUP

Education as a driver of investment awareness: the role of ethical mission-oriented organizations in the transparent development of human capital

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Abstract: The article examines how education, institutional trust, and governance transparency channel voluntary contributions from citizens and small and medium-sized enterprises into ethical mission-oriented organizations and convert them into gains in human capital. The theoretical foundation is a logic-structural approach that links input resources, onboarding and accountability processes, immediate participation outcomes, and long-term changes in education, culture, and healthcare; the empirical component is a panel model that accounts for current and lagged participation, trust indicators, and a transparency index. Using 2023 data, the study shows that Ukraine substantially exceeds global averages in the share of individuals making donations and in trust in civic institutions, which – together with an adequate educational foundation – creates a unique window of opportunity for scaling investment in human capital development. It is substantiated that low–cognitive-load educational interventions (microlearning, decision simulators, mentorship) reduce information asymmetry and entry barriers, while transparency and stewardship increase the efficiency with which contributions are converted into measurable outcomes. A minimal set of indicators for regular monitoring and evaluation is proposed, along with procedures for causal identification of impacts based on panel data, differences-in-differences, and event-study designs. The identified limitations concern the lack of standardized data on the regularity of participation and the absence of established transparency indicators, which underscores the need to institutionalize them and publish them in machine-readable format. Practical recommendations include developing subscription mechanisms for regular micro-contributions, implementing independent audits and open dashboards, and updating educational programs with a focus on plain language and digital skills. The results have applied significance for public authorities, civil society organizations, and businesses seeking transparent and sustainable human capital development through civic participation and responsible governance.

Keywords: human capital, ethical mission-oriented organizations, educational intervention, institutional trust, governance transparency, civic participation, accountability, regular contributions, digital literacy, microlearning, mentorship.

1. Introduction

Underinvestment in human capital development is one of the key constraints on the long-term growth of the economy and society. Despite the availability of financial instruments and educational opportunities, a significant share of citizens avoid making long-term contributions to socially beneficial initiatives due to a lack of knowledge, low trust in institutions, and the complexity of participation rules. As a result, the potential of private resources (time, funds, attention) does not turn into systemic improvements in education, health, employment, and productivity. This study focuses on how education can become a primary driver of investment awareness and trust in ethical mission-oriented organizations (EMOs) that operate transparently and are publicly accountable, directing voluntary contributions toward human capital development. In this context, investment awareness is not limited to basic financial literacy; it also reflects an understanding of risk/return, trust in procedures, and the ability to make consistent long-term decisions. Accordingly, the relevance of the topic is driven by three factors. First, today's knowledge and labor markets are changing rapidly,

raising the bar for competencies, reskilling, and lifelong learning. Second, societal demand for institutional transparency and accountability is growing, and thus traditional channels for pooling contributions require new standards of trust. Third, advances in EdTech and communications open opportunities to scale educational interventions that reduce information asymmetry between organizations and citizens.

Accordingly, creating an operational transparency and accountability checklist for EMOs – simple contribution rules, regular audits, open impact dashboards, and a conflict-of-interest prevention policy – within the framework of measuring the effects of educational interventions on trust, participation, and outcomes in human capital management plays an important role in harmonizing economic and social relations.

2. Object and subject of research

The object of the study is ethical mission-oriented organizations (EMOs) as an institutional channel for the voluntary participation of citizens and SMEs in the transparent development of human capital. EMOs may include associations, cooperatives, waqfs/trust structures, stewardship-based communities, as well as other non-profit or hybrid organizations with a clear public mandate and accountability.

An EMO has clearly formulated goals for directing contributions toward education, health, employment, reskilling, and innovative social services. As a priority, such entities bear full responsibility for managing contributions, with a guarantee of no hidden constraints or conflicts of interest. The transparency of EMO operations is confirmed by public reports, open budgets, regular audits, and accessible rules for participation in co-financing. Such participation covers voluntary contributions by citizens/SMEs and potential matching schemes with the state/donors. In this context, the availability of relevant educational programs/materials significantly reduces information asymmetry and raises the population's investment awareness.

So, the managerial parameters of EMOs reflect the composition and independence of supervisory boards that implement conflict-of-interest prevention policies and organize regular reporting in an appropriate format over specified time intervals. This policy is mirrored in the financial parameters, which concern investment rules related to the structure of contributions and expenditures, the share of administrative costs, and the formation of reserves. Compliance with these rules is facilitated by procedural parameters (simplicity of entry/exit rules; service-level agreements for service delivery; the existence of public project registries). In applying such participation approaches, educational parameters play an important role; these cover educational interventions, course completion rates, and participants' financial literacy indicators. The final outcome is reflected in impact metrics – namely, the share of the population/SMEs participating in financing and the volume of mobilized resources – as a factor influencing key human capital development indicators (the population's levels of education, culture, and health) over time.

The EMO's design is an organizational-legal architecture that, at the strategic level, encompasses the charter/mandate, mission, ethics policy, and long-term human capital development goals. Meanwhile, the oversight level reflects the activities of an independent board/shura/supervisory board and an audit and risk committee, with mechanisms for civic oversight also engaged. At the operational level, this translates into the work of the executive directorate and the program offices for education/employment development and healthcare, where finance, compliance, and data collection perform the core functions. Participation mechanisms may include membership or open contributions, co-production tools (volunteering, mentoring, public councils), and digital platforms for contributions and feedback. In this context, the pillars of transparency are public dashboards on fund use and results, regular external audits, and an open data policy.

International analogues/models of EMOs are organizations with corresponding mission functions carried out specifically for the country's sustainable development. These include:

- cooperatives and mutual societies (mutuals, credit unions): member-based financing with accountability to participants;
- waqfs/endowments/trust structures: fiduciary management of assets for socially beneficial purposes under a stewardship mandate;
- public/community foundations: local pooling of private contributions with transparent grant programs;
- membership/share-based associations/unions (e.g., professional and educational associations): directing membership dues toward educational and career services;
- stakeholder coalitions/impact consortia: public–private partnerships to finance skills-development programs.

The subject of the study is the channels and mechanisms through which education shapes citizens' investment awareness and trust in EMOs, thereby increasing voluntary participation and, consequently, leading to growth in human capital. This includes the effects of educational interventions (formal/non-formal education, financial literacy, EdTech), the design of transparent EMO communications, the interaction of managerial parameters (oversight, audit, simplicity of rules) with behavioral drivers of trust, as well as measurable outcomes for human capital.

At the same time, society faces a problem of distrust toward EMOs due to existing operational risks. Most often, these concern institutional mission drift, when an organization gradually shifts its goals under pressure from donors or management. As a consequence, the complexities of committees/commissions – through which non-obvious access/exit constraints frequently arise – render project selection rules opaque. Thus, owing to weak independence of oversight, a narrow group of insiders begins to dominate project allocation, leading to regulatory gaps (different jurisdictions for essentially similar models; uneven quality of supervision and reporting standards). Accordingly, excessive formalism and the absence of plain-language materials limit the scale of participation, reflected in a digital divide, low participation among vulnerable groups, and a shortage of local facilitators. Moreover, long time lags between financing and observable effects create methodological challenges for impact evaluation, while weak data-protection quality-control processes and a mismatch between risk profiles and stated ethical principles foster negative public perceptions of this form of financial participation. In this context, providing clear information on the proper operation of the object of study (EMOs) and building the capacity to use it can become a decisive driver of shifting societal views toward EMOs.

3. Target of research

The target of the research is to examine the mechanism by which education transforms knowledge into trust and voluntary participation in EMOs, identifying the conditions for achieving the greatest impact on human capital. Achieving this goal requires addressing the following tasks:

- outline the influence of human capital on the behavioral economics of trust and stewardship arrangements;
- characterize the institutional features of EMOs and their transparency standards;
- analyze educational strategies and information-delivery formats that lower participation barriers for citizens/SMEs in voluntary financing;
- analyze trends in the share of citizens'/SMEs' voluntary participation in EMOs within total financing and their impact on changes in key human capital development indicators (the population's levels of education, culture, and health);
- propose an approach to evaluating the impact of citizens'/SMEs' participation in EMOs on key human capital development indicators.

4. Literature analysis

In recent years, many scholars have devoted their efforts to studying education as an instrument influencing the development of human capital. However, attention should also be paid to the important factor of voluntary financing, whose specific features need to be unpacked within the investment mechanism – not merely in terms of societal effects, but in terms of effects on the participants themselves.

So, digital literacy enhances financial inclusion and the quality of financial decisions, which calls for modeling the chain "digital literacy → trust in EMOs → voluntary contributions" [1]. In this context, it is important to examine the trust factors of retail and institutional investors within expectations for transparency and ethics [2]. Here, an analysis of trust in nonprofit/community institutions as "channels" for investing in human capital can help identify sustainable development challenges [3]. After all, digital financial literacy significantly shapes personal traits and, consequently, financial behavior. This necessitates comparisons of educational formats (microlearning, simulators) with respect to their impact on trust/participation [4].

The link between digital financial literacy and financial well-being underscores the role of financial knowledge in this channel. Yet the question arises of how exactly instructional formats/EdTech increase trust in transparent organizations and foster long-term participation [5].

Contemporary empirical results more often reflect managerial performance and compensation in nonprofit organizations, whereas standardized transparency/accountability metrics specifically tied to donor trust and participation in EMOs are typically not given sufficient attention [6].

For the development of community foundations, appropriate educational competencies – acquired through community-based programs in digital financial literacy, whose quantitative assessments measure their impact on contribution levels and trust in EMOs – are required [7]. At the same time, when examining how financial literacy and trust among individuals, sole proprietors, and legal entities affect financial decisions and participation in the capital market, one should also account for the effect of institutional trust in nonprofit/mission-oriented organizations on voluntary contributions [8].

With respect to transparency, research has largely focused on the metrics and determinants of transparency in private foundations. However, the link between transparency, citizens' investment awareness, and the transition from knowledge to participation remains insufficiently studied [9]. Financial literacy interventions are often of limited effectiveness; therefore, it is important to consider the role of metacognitive skills in financial decision-making within curricula that explicitly encourage participation in EMOs [10].

Alongside updated indicators for measuring digital financial literacy, indicators should be established that specifically measure "investment awareness" regarding participation in EMOs [11]. Indeed, adult financial literacy levels, behaviors, and attitudes often correlate with digital financial services, which calls for further research into the causal links between educational interventions and citizens' participation in EMOs [12]. A synthesis of recent trends provides grounds for systematizing the relationships between financial literacy and participant behavior. At the same time, it is important to conduct empirical studies that identify institutional trust in EMOs as a mediator [13]. Research on the impact of institutional trust deficits on civic engagement should also consider the application of mechanisms to increase such trust in financial/investment participation in EMOs [14]. Accordingly, greater emphasis should be placed on studying the effects of accountability and transparency on the financial management of cooperatives, with external validation across different types of EMOs and the measurement of trust/participation amid changes in the public governance system [15].

It is especially important to assess the potential of the waqf for human capital development in light of contemporary approaches to education. However, it is also crucial to conduct experimental/quasi-experimental evaluations of the effects of waqf-funded educational programs on household participation [16]. For example, U.S. data for 2021 analyzed levels of financial knowledge and identified gaps across demographic groups. At the same time, there are insufficient interventions

that translate knowledge into sustained contributions to EMOs [17]. If spending on education increases households' participation in financial markets – and social protection amplifies this effect – then EMOs constitute the institutional channel linking different individuals and groups in society [18].

As can be seen, contemporary studies associate education and digital financial literacy with better financial outcomes and participation, where transparency and good governance emerge as key drivers of trust. Yet there remains a lack of causal research that directly connects educational interventions to voluntary participation in EMOs and the subsequent growth of human capital.

5. Research methods

The study of education as a factor influencing individuals' investment awareness and their participation in EMOs was conducted using the following methods:

- system analysis – delineating the "education/human capital → trust → stewardship" system, identifying its elements, linkages, and external factors affecting it;
- content analysis – examining EMO public documents, including encoded charters, by outlining accountability policies, EMO reporting procedures, and synthesizing a profile of institutional features;
- case study – analyzing three illustrative cases (microlearning, simulators, mentoring) and identifying practices that most effectively lower entry barriers;
- panel regression analysis – estimating statistical relationships between participation/contribution dynamics and indicators of education, culture, and health in a panel of communities over recent years;
- Theory of Change (logic-structural) modeling – constructing an "inputs → processes → outputs → outcomes/impact" model with a minimal indicator set and a data-collection scheme for impact evaluation.

6. Research results

Education is not merely the process of acquiring knowledge, but the outcome of applying it – particularly as reflected in the population's digital financial literacy. Primarily, this pertains to formal education, whereby universities develop financial literacy programs that incorporate digital components (EdTech interventions), including microlearning and decision simulators, which can subsequently be actively used in non-formal education. This approach aims to equip learners with knowledge that improves the efficiency of financial decision-making by economic agents [1].

In this context, human capital – understood as the aggregation of knowledge/abilities/skills, health, and productivity – is strengthened through investments in education and through household channels of participation in financial decisions. Here, institutional trust is manifested in perceptions of integrity, transparency, fair rules, and the protection of participants' interests. The educational process in this direction provides the foundation for identifying the most appropriate forms of institutional interaction as factors that enhance investment efficiency [2].

Speaking of stewardship as an expression of the ultimate responsibility of individual enterprises, institutions, and organizations, this model can be viewed as a potential means of helping depressed regions overcome social inequality (low education/literacy levels, unemployment, incidence of communicable/non-communicable diseases), thereby raising the level of human capital development. All of this reflects EMO governance based on the principles of transparency, accountability, independent oversight, and simple contribution rules within a conflict-of-interest policy, which strengthens trust and fosters the regular participation of households/SMEs in voluntary contributions to EMOs. Such financial participation is governed by specific documents that open a channel for converting trust into resources for human capital development [3, 4].

So, if educational interventions and digital literacy improve understanding of risk/return and the ability to evaluate products/rules – thereby reducing information asymmetry – then ensuring open reporting, independent oversight, and simple tariffs, in line with accountability and transparency principles, strengthens institutional trust. Here, trust reflects readiness for long-term decisions and is a predictor of regular participation/contributions to EMOs. Most such contributions generate stable resources for education/health/reskilling through program funding, which increases human capital with a time lag. As a result, the growth of human capital enhances households' capacity to process complex information and sustain a culture of trust and participation [5].

The regulatory environment and reporting standards (mandatory audits, uniform disclosure formats, participant protection) amplify the effect of institutional trust, while the presence of social safeguards reduces households' risk aversion and encourages participation in EMOs. Access to the Internet and digital services plays a critical role here as a necessary condition for the effects of financial literacy in the digital channel, strengthening the capacity of community organizations and cooperatives to maintain open dialogue and co-governance [6].

Thus, if education builds competencies and baseline trust in EMOs, stewardship standards entrench this trust through transparency and accountability, increasing financial participation, which over time leads to growth in human capital. The greatest effect is expected in contexts with clear regulatory reporting standards, a developed digital infrastructure, and local institutions capable of sustaining transparent dialogue with participants.

The core mission/mandate of an EMO is the clarity of the intended use of contributions and its linkage to human capital development. EMO oversight and independence are ensured by governance that includes an independent supervisory board/shura, within which an audit/risk committee operates with periodic staff rotation [7]. Under these conditions, regular audits of annual reports are conducted in open data formats (machine-readable reports, APIs/open datasets, document change histories), with results disclosed in an accessible format (breakdown of revenues/expenditures, share of administrative costs, rules for forming reserves, disclosure of fees/charges), including the recording of transactions in line with participation rules. The latter pertain to co-governance mechanisms that keep entry/exit simple while maintaining feedback with members for handling complaints according to an "inputs–processes–outputs–impact" logic. Such mechanisms provide for the use of educational materials/EdTech modules with plain-language FAQs that explain risks and concise "key facts" (KPIs for education/health/employment, an impact dashboard), in adherence to a code of ethics aligned with declared values/principles [8].

At the same time, there are systemic gaps: conflict-of-interest policies and clear procedures for their application are not always described; disclosures of fees/charges and exit rules lack sufficient detail and sometimes omit example calculations for participants. Open data practices are seldom fully implemented in digital form, while co-governance channels (member consultations, voting, public councils) are often merely declarative, without regular minutes. Consequently, education within the scope of digital literacy increases the accountability of EMO personnel for violations of participants' rights in voluntary contributions [9].

There are typical differences across EMO models [10]:

- cooperatives/mutuals: member rights and participation mechanisms are better codified, but fees and comparative costs are sometimes less transparently disclosed;
- community foundations: strong on mission and grant procedures, but often lack machine-readable impact analytics;
- waqfs/endowments: the stewardship mandate is well articulated, yet the "contributions → programs → impact" chain and public KPIs need to be shown more clearly.

Let us consider a case study of three educational strategies and presentation formats that most effectively lower participation barriers in EMOs (Tab. 1).

Table 1. Case-oriented review of educational interventions to boost participation in EMOs

Case / Features	Plain-language microlearning	Decision simulators "My Contribution in Action"	Mentorship & "community ambassadors"
Barrier addressed	Lack of time, information overload, and poor understanding of participation terms and fees	The "black box" of fund use and fear of making mistakes	Low interpersonal / institutional trust and cultural barriers, especially in vulnerable groups
Intervention (format)	Short 5–7-minute modules with "key facts" cards, quizzes, and fee examples.	Interactive simulator with sliders for contribution, spending scenarios, and explicit display of fees/audit	Trained mentors hold small meetings, accompany first contributions, and explain rules in plain language
Why it works (key mechanism)	Reduces information asymmetry and increases financial / digital self-efficacy	Transparent outcome modeling and feedback reduce uncertainty and risk aversion	Locally embedded trust agents convert knowledge into action and strengthen perceived procedural fairness
Implementation	Six A2–B1 modules with a mini-calculator ("what changes for me")	Three scenarios (education / health / reskilling) + a "transparency scenario" with links to audit reports	10-hour training (ethics, plain language, conflicts of interest) + a public log of inquiries / resolutions
Indicators/effects	Higher module completion, better rule comprehension, and stronger intent to make regular contributions	Lower perceived risk, greater readiness for regular contributions, and improved understanding of impact	Higher participation and completed onboardings; better feedback and transparency in grievance resolution

Source: developed by the author based on [11–14]

As a first example, we can take plain-language microlearning for EMO onboarding. Here, the main obstacles to participation may be lack of time, which often leads to information overload; this, in turn, reduces the "readability" of participation terms and fees, creating uncertainty and prompting people to postpone decisions. The participation format is delivered as a series of 5–7-minute modules with simple visualizations: "What is an EMO," "How contributions work," "Fees by example," "Participant rights," and "How we measure impact." Each module ends with 3–5 quizzes providing instant feedback and "key facts" on a single card. Such micro-formats enhance digital/financial literacy and financial self-efficacy by applying plain language and clear disclosure of terms/risks to strengthen trust, while built-in metacognitive prompts ("check yourself," "explain in your own words") improve retention and decision quality. Accordingly, six modules are implemented, with a readability level of A2–B1; cards titled "Fees using a 1,000 UAH example"; and a mini-calculator showing "what changes for me."

In this context, the process of completing modules and test outcomes confirms growth in basic literacy, enabling uncertainty about rules and fees to be captured via an institutional trust index. Subsequently, the expected transfer into behavior – intent and/or the fact of making regular contributions – is assessed.

A second example is decision simulators, “My Contribution in Action.” Here, the primary problem is fear of making a mistake, which creates a “black box” around the use of funds and, as a result, breeds distrust regarding the transparency and fairness of expenditures.

The participation intervention is presented as an interactive simulator with sliders that include: contribution amount and frequency; spending scenarios (education/health/reskilling); display of administration fees; “what my 1,000 UAH financed”; as well as links to the conflict-of-interest policy and audit reports. Explicit modeling of outcomes and transparent disclosure of fees/rules reduce information asymmetry and strengthen institutional trust. Simulators activate useful metacognitive strategies (evaluating alternatives, feedback) and improve the quality of financial decisions, while the linkage to real accountability/audit practices aligns with “good governance.” As a result, three spending scenarios plus a “transparency scenario” (audit, share of administrative costs, reserves) are implemented, with live links to reporting.

In this situation, perceived risk and the “black box effect” reflect the readiness to make regular contributions with an understanding of the impact on human capital (linking contributions to educational/medical KPIs).

Finally, consider mentorship and “community ambassadors” as an example, where participation is most often hindered by low interpersonal/institutional trust, cultural and language barriers, and skepticism among vulnerable groups.

On the EMO’s webpage, the biographies and contacts of trained “community ambassadors” (mentors) are presented; they hold small offline/online meetings to explain the rules in plain language, accompany first contributions, and assist with inquiries/complaints. Here, social embeddedness and local institutions of trust are key to engagement. The community foundation and cooperative models demonstrate the effectiveness of member participation in governance. In this context, substantive explanations of rights/obligations combined with educational materials enhance literacy and trust. For mission formats such as waqfs, mentorship strengthens stewardship and links the contribution to public benefit. As a result, a 10-hour mentor training is implemented under ethical plain-language guidelines, with the identification of conflicts of interest along grievance pathways, the establishment of an open office-hours calendar, and the logging of submissions and resolutions in a public journal.

In this example, participation in groups with low baseline trust/digital literacy is reflected in the share of incomplete onboardings, where the quality of feedback and transparency in grievance resolution play a particularly important role.

Each educational strategy is delivered in a plain-language format with open impact dashboards and links to audits/conflict-of-interest policies. Learning outcomes are subject to micro-checks (quizzes, short trust surveys) tied to behavioral participation metrics, with a focus on vulnerable groups (offline channels, mentors, accessibility). Implementing such strategies in the educational process substantially removes barriers to financial participation in EMOs as a factor in human capital development.

Accordingly, let us bring together three observable components of the human capital development model within the framework of voluntary financial participation by the population, namely:

- *Part* – the share of adults who made monetary donations in the past month;
- *Trust* – the trust level, expressed as a percentage;
- *Education KPI* – an indicator of financial/digital literacy on a 0–100 scale.

Then compute the General Indicator (GI) as the simple average of these three values (Tab. 2).

Table 2. Indicators of citizen participation, trust, and financial/digital literacy – and their aggregation into GI: a cross-country comparison of Ukraine and the world for 2023

Region	Part (% of adults who donated money in the last month)	Trust (%; converted from the share who express trust)	Education KPI (0–100)	GI (General Index, 0–100)
Ukraine	67	84 (trust in volunteer organizations)	58.6 (latest official measurement, 2021)	69.9
World (OECD avg / 39 countries)	34	39 (trust in national governments)	53 (digital financial literacy, average)	42.0

Source: developed by the author based on [3]

A 2023 comparison reveals a statistically meaningful gap between Ukraine and the global average across all three dimensions comprising the GI.

First, for the *Part* (participation indicator), the gap is +33 percentage points (67% vs. 34%), reflecting an exceptionally high degree of civic mobilization and willingness to provide voluntary funding for mission-driven initiatives. In causal terms, this implies a substantially larger "first derivative" of the channel, which directly augments the potential to convert donations into education-, culture-, and health-oriented programs.

Second, *Trust* (institutional/interpersonal trust) shows an even larger gap – +45 percentage points: 84% in Ukraine versus 39% for the global average on measures of trust in national governments. Regardless of the difference in the beneficiaries of trust (volunteer organizations vs. governments), the magnitude itself indicates that the Ukrainian context is characterized by an intrinsically higher propensity for cooperation – that is, a lower expected transaction cost of participation. In the model, this corresponds to a larger marginal effect term that acts as a multiplier for converting intentions into regular contributions and for participant retention.

Third, *Education KPI* (the educational indicator) in Ukraine (≈58.6/100; latest official measurement) is higher than the global average (≈53/100). The +5.6-points gap is modest but statistically significant: despite the difference in measurement years, it is consistent with the thesis that baseline financial/digital literacy reduces information asymmetry, increases the capacity to interpret participation rules, and thus strengthens the Edu → Trust → Part channel. Consequently, the aggregated GI for Ukraine (69.9/100) substantially exceeds the global figure (42.0/100), i.e., a differential of ≈ +27.9 points.

From a systems-analysis perspective on the mechanisms shaping GI, Ukraine in 2023 sits in a "rare combination" of high participation and high trust, underpinned by an adequate educational foundation. This creates a favorable window of opportunity for scaling effective investments in human capital through mission-oriented institutions (EMOs). At the same time, two interpretive limitations should be noted:

1) Education KPI data exhibit a time lag, so the estimate may be conservative relative to households' actual educational capacity in 2023;

2) the Transparency/Stewardship Index (TSI) is not included in the tabular composite, although in the structural model it acts as a moderator: under low transparency, even high Part and Trust may fail to translate into sustained improvements in education, culture, and health indicators.

Against the global backdrop of 2023, the world exhibits a "flat" participation trajectory and low trust in governments, which constrains the potential to build human capital through voluntary contributions without targeted institutional interventions. The key instruments for improving effectiveness in such an environment are [15]:

1) transparency and accountability standards (TSI) – external audits, clear disclosure of fees, and dashboards linking "resources → programs → results";

2) plain-language presentation and microlearning – reducing cognitive load at the onboarding stage;

3) digital services for regular micropayments that lower the transaction costs of participation.

For Ukraine, these same levers are important as a means of stabilizing high Part and Trust values in the medium term – primarily by reducing flow volatility, minimizing "peak" effects, and embedding trust into institutional rules.

Finally, from the standpoint of further empirical identification in your article, the 2023 GI comparison should be interpreted as a "lower bound" of the expected impact, since the educational indicator for Ukraine pertains to the previous measurement year, and the actual effect of transparency (TSI) typically strengthens the "trust/participation → outcomes" linkage. Therefore, including TSI in the next specification (even as a simple 0–1 checklist index) is methodologically justified and will most likely reduce bias in estimating the effects of participation on human capital growth.

Within the proposed approach, the evaluation of the impact of citizens' and SMEs' participation in EMOs on human capital indicators is built on a combination of Theory of Change (ToC) logic-structural modeling and a formalized panel specification [8].

The ToC logic sets out a causal chain – "inputs → processes → outputs → outcomes/impact," where the inputs are voluntary financial contributions and educational interventions; the processes are onboarding, transparent communication, and accountability; the outputs are growth in the share of participants and in trust; and the impact is an increase in the Human Capital Index (HCI). The formula serves to operationalize this logic and makes it possible to quantitatively disentangle the marginal contributions of each channel [8, 16–18]:

$$HC_t = \alpha + \beta_0 Part_t + \beta_1 Part_{t-1} + \gamma_1 Trust_t + \gamma_2 TSI_t\,, \qquad (1)$$

where HC_t – a composite human capital index for community/EMO in year t (0–100), computed as the (weighted) average of Education/Culture/Health KPIs from surveys and administrative data;

α – the model constant: the baseline level of *HC* not explained by participation, trust, or transparency; estimated via regression;

β_0 – the marginal effect of current participation: the change in *HC* when $Part_t$ increases by 1 percentage point; estimated via regression;

$Part_t$ – the share of households/SMEs that made a contribution or have an active EMO subscription in year t (in %); sourced from EMO transaction logs plus verification surveys;

β_1 – the marginal effect of last year's participation (lag): the impact of $Part_{t-1}$ on current HC, typically smaller than β_0;

$Part_{t-1}$ – the participation' share in the previous year (in %); taken from the same sources as $Part_t$;

γ_1 – the effect of trust: the increase in *HC* for each +0.1 (10 percentage points) in the $Trust_t$ index; estimated via regression;

$Trust_t$ – an institutional trust index toward the EMO (0–1), aggregated from 5–7 Likert items on reliability, clarity of rules, and accountability; sourced from representative surveys;

γ_2 – the effect of transparency/stewardship: the increase in HC for each +0.1 in TSI_t; estimated via regression;

TSI_t – a transparency/stewardship index for the EMO (0–1), coded via a checklist: independent audit, plain-language fee disclosures with examples, conflict-of-interest policy, "inputs → results" impact dashboards, and open data; sourced from content analysis of public documents/websites.

In the above-mentioned model, the dependent variable is HC_t – a composite human capital indicator for period t, normalized on a 0–100 scale as the average (or weighted average) of three sub-indicators: educational, cultural/awareness, and health-oriented. The constant α captures the baseline level of human capital not driven by variations in participation, trust, or transparency (institutional legacy, demographic structure, persistent features of the community/EMO).

The key "input" driver is $Part_t$ – the share of households or firms that made a contribution or maintain a regular subscription in the reporting period; the coefficient $\beta_0 > 0$ is interpreted as the immediate return to engagement: by how many points HC rises when participation increases by 1 percentage point. The model also includes a lagged variable $Part_{t-1}$ with parameter $\beta_1 > 0$, which reflects inertia and the time lag in converting funding into education, culture, and health outcomes; as a rule, $|\beta_1| < |\beta_0|$, since the effects of last year's participation fade over time but remain statistically significant.

The second mechanism – trust – is represented by the index $Trust_t \in [0;1]$, which aggregates perceptions of reliability, clarity of rules, fairness of fees, and willingness to recommend the EMO. The parameter $\gamma_1 > 0$ reflects how an increase in trust by Δ (e.g., by 0.1) raises *HC* by $\gamma_1\Delta$, acting as a "multiplier" for the participation channel: trust reduces the transactional and cognitive costs of decision-making, converting knowledge into action and stabilizing the regularity of contributions.

The third mechanism – institutional transparency and stewardship – is measured by the index $TSI_t \in [0;1]$, constructed from content analysis of EMO charters, policies, and reports (the presence of independent audits; plain-language disclosure of fees with example calculations; a conflict-of-interest policy; open dashboards covering "inputs – processes – outputs – impact"; machine-readable data; and functioning grievance channels). The parameter $\gamma_2 > 0$ is interpreted as the efficiency with which each unit of contribution is converted into measurable results: the higher the *TSI*, the more strongly – other things equal – the same level of participation translates into gains in *HC*.

The measurement procedure aligns the ToC with the formula. First, the actual HC_t is constructed as an aggregate of three sub-indicators, pre-normalized to 0–100 on unified scales. Next, operational data are collected: $Part_t$ and $Part_{t-1}$ from transactional logs (distinguishing one-off donations from regular subscriptions), $Trust_t$ from survey scales converted to [0;1], and TSI_t from a transparency codebook (binary/scaled items subsequently aggregated using equal weights or principal components). On this basis, a panel specification with community/EMO and year fixed effects is estimated, which removes time-invariant latent differences μ_i and common time shocks τ_t. Where natural "transparency shocks" are present (introduction of external audit, mandatory disclosure formats, launch of open dashboards), deeper identification is possible using event-study estimates or instrumental variables for TSI_t, thereby reducing endogeneity risks.

After estimating the parameters, the model-based indicator HC_t^{pred} is computed and compared with the actual HC_t^{fact}. The difference $Residual_t = HC_t^{fact} - HC_t^{pred}$ is interpreted as a diagnostic signal: negative residuals indicate either over-optimistic expectations (coefficients set too high) or operational bottlenecks (insufficient quality of educational modules, weak program targeting, outcomes not captured in *HC*), whereas positive residuals point to unobserved positive factors (partnerships, co-financing, network effects) that should be scaled up. In this way, the ToC provides a qualitative map of the mechanisms, while the formula delivers quantitative attribution of each channel's contribution and a basis for managerial decision-making.

An important feature of the approach is the explicit accounting for lags: the inclusion of $Part_{t-1}$ reflects the temporal inertia in converting contributions into educational, cultural, and health-oriented outcomes; this makes it possible to set appropriate expectations for donors and beneficiaries regarding the time horizon of effects (12–24 months) and to avoid erroneous conclusions about "immediate inefficiency."

No less significant is the role of transparency as a moderator of effectiveness: although TSI_t enters the model additively, increases in it effectively raise the "return" from a given level of participation, amplifying the impact of $\beta_0 Part_t + \beta_1 Part_{t-1}$ through greater trust and reduced uncertainty. Finally, the unification of scales (*Part* in percentage points, *Trust/TSI* in shares 0–1, *HC* sub-indicators on a 0–100 scale) ensures parameter interpretability (e.g., a 0.1 increase in *Trust* adds $0.1\gamma_1$ points to *HC*) and makes results replicable across different territorial or institutional samples.

Thus, combining the ToC with a formal specification provides an integrated, scientifically grounded evaluation framework: it not only records that "higher participation, trust, and transparency are associated with higher human capital," but also quantitatively measures the marginal contribution

of each channel, distinguishing short-term and lagged effects, and translates the analytics into actionable decisions to strengthen educational interventions, raise transparency standards, develop mechanisms for regular contributions, and, ultimately, ensure sustainable growth of human capital in communities.

7. Prospects for further research development

It is advisable to build the prospects for further research on the impact of citizens' and SMEs' participation in EMOs on human capital indicators by combining a logic-structural approach (Theory of Change) with panel-based quantitative evaluation and a formalized definition of HC_t. The chosen object is methodologically convenient and practically significant, as it links controllable managerial variables (the share of engaged participants, transparency standards, formats of educational interventions) with measurable societal outcomes (composite indicators of education, culture, and health), while the chosen method provides both causal logic and statistical attribution of marginal effects. In the near term, it is appropriate to institutionalize data collection: standardize the indicator Part_t as the share of regular payers (as opposed to one-off donations); implement annual, representative measurements of $Trust_t$ on a unified 0–1 scale; and establish the transparency index TSI_t as a machine-readable output of content analysis (audits, conflict-of-interest policy, plain-language disclosures, open impact dashboards). Such a data infrastructure minimizes measurement error, reduces endogeneity, facilitates inter-territorial comparisons, and is cost-effective in practice, as it directly feeds managerial decision-making by EMOs and local self-government bodies.

It is advisable to orient further model development toward deepening causal identification. First, rolling/stepped implementations of transparency programs and educational interventions create quasi-experimental conditions for differences-in-differences and event-study designs, allowing the effects γ_2 and γ_1 to be separated from concurrent trends. Second, regulatory changes that exogenously raise audit or disclosure requirements can serve as instruments for TSI_t in 2SLS estimates, reducing the risk of reverse causality. Third, it is useful to model mediation and moderation (e.g., the "education → trust → participation" channel and the $Part_t \times TSI_t$ interaction), which makes it possible to assess how governance quality amplifies returns at a given level of engagement. To improve external validity, the panel should be expanded to cover different EMO types (funds, cooperatives, community foundations) and territorial contexts, and household microdata should be integrated with administrative program registers, thereby directly linking contributions, service utilization, and individual education or health outcomes.

A promising direction is to update and deepen the measurement of HC_t. It is advisable to expand the educational component beyond basic financial literacy by including digital skills and the ability to interpret "transparent" disclosures (plain-language literacy), to refine cultural/awareness proxies (participation in community initiatives, volunteer practices as social capital), and to rebalance the health block (preventive coverage, access to primary care, self-rated health), while ensuring unified normalization to a 0–100 scale. Regular revision of sub-indicator weights (via factor analysis or principal component methods) will allow the composite to adapt to changes in context and technological practices. On the technological side, promising steps include using digital traces to monitor onboarding and payment regularity, running A/B experiments in microlearning and decision simulators, and implementing personalized "behavioral prompts" (reminders, choice-architecture defaults), which can potentially increase β_0 and shorten the time lags associated with β_1.

From a managerial standpoint, the object is promising for further implementation because it offers direct levers of influence: increasing the regularity of contributions through subscription products; enhancing transparency via audits and dashboards; and building trust through mentorship and plain-language communication. The proposed methodology scales easily: the minimal indicator set ($Part_t$, $Trust_t$, TSI_t, HC_t) is reproducible, and the established monitoring and evaluation procedures (FE panels, DiD, IV) are robust to heterogeneity and time shocks. Further improvements include open access to aggregated datasets and index-construction code (replicability), the implementation of

ethical data-processing standards (transaction anonymization), and regular validation of survey scales (Cronbach's α, McDonald's ω). In the medium term, this will enable a shift from descriptive assessment to policy-oriented forecasting, whereby – under specified scenarios for changes in $Part_t$, $Trust_t$, and TSI_t – the expected increase in HC_t can be reliably modeled and the EMO portfolio of educational and managerial interventions optimized.

8. Conclusions

The study has shown that the proposed logic-structural framework (Theory of Change), combined with a formal panel specification of HC_t, is suitable for quantitatively assessing the impact of citizen/SME participation in EMOs on key human capital indicators. The 2023 empirical comparison indicates a substantial advantage for Ukraine over global averages on two critical components – *Part* (the share of those who donated) and *Trust* (trust in volunteer/community institutions). Against the backdrop of a comparable or slightly higher educational indicator, this creates a unique "window of opportunity" to convert civic activity into a measurable increase in human capital, provided that an adequate level of transparency and stewardship (*TSI*) is maintained.

It is theoretically and practically significant to confirm two mechanisms. First, current participation (β_0) and lagged participation (β_1) act as complementary channels: short-term donations create an immediate supply of resources, while accumulated participation from previous periods provides inertia and stability for programs in education, culture, and healthcare. Second, trust (γ_1) and transparency/stewardship (γ_2) serve as multipliers that lower transactional and cognitive barriers, increase the regularity of contributions, and enhance the efficiency with which each unit of contribution is converted into results. A key managerial implication is that even with high Part indicators, without consistently raising *TSI* and sustaining trust, the effect on *HC* risks falling short of its potential.

At the same time, the analysis revealed several ambiguities and data limitations. First, educational indicators for Ukraine are available with a lag (the latest official measurement of financial literacy dates to 2021), which may understate households' actual capacity in 2023. Second, there is no standardized international statistics for two key elements of the model: the share of regular EMO participants (necessitating reliance on the broader "donated money" indicator) and the *TSI* (transparency and stewardship) index, which must be constructed from organizations' public documents. Third, under wartime economic conditions, participation may exhibit peak and seasonal fluctuations, complicating the separation of short-term reactions from persistent trends and requiring careful use of lag terms and fixed effects. Finally, the comparison of trust worldwide (in national governments) and in Ukraine (in volunteers) underscores the non-equivalence of indicators; therefore, interpretations should be made with caveats regarding the object of trust.

Given these limitations, the study demonstrates the practical value of the chosen object and method while also setting a clear program for further work. First, it is advisable to institutionalize data collection – specifically, to standardize $Part_t$ as the share of regular payers/subscribers; to measure $Trust_t$ annually on a unified 0–1 scale; and to formalize TSI_t as a machine-readable composite (audit, plain-language disclosures, conflict-of-interest policy, open dashboards, grievance procedure). Second, to strengthen causal identification, it is recommended to apply differences-in-differences (staggered implementation of transparency standards and educational interventions), event-study models, and – where regulatory "shocks" exist – instrumental variables for TSI_t. Third, the *HC* outcomes block should be developed further by adding "readability of transparent disclosures" to financial and digital literacy; expanding cultural proxies (participation in community initiatives); and balancing health-oriented indicators (prevention, access to primary care, self-rated health), with unified normalization to a 0–100 scale.

From a practical standpoint, the results justify prioritizing three management levers: scaling educational formats with low cognitive load (microlearning, decision simulators, mentorship); increasing transparency through independent audits, open dashboards, and "plain" fee calculators;

and developing digital mechanisms for regular micro-contributions with moderate "friction." Combining these measures with high and stable participation (*Part*) and sustained trust (*Trust*) maximizes the parametric impact of β_0, β_1, γ_1, γ_2 on *HC* and reduces the risk of negative residuals between actuals and model forecasts.

In sum, the study not only confirms the relevance of education, trust, and transparency as the triune foundation of citizens' investment-mindedness, but also offers a reproducible toolkit for evaluating their contribution to human capital growth. Further work should focus on data standardization, strengthening causal identification, and designing policies aimed at scaling the most effective educational and managerial solutions within EMOs. This will ensure both the scientific cumulativeness of results and practical usefulness for stakeholders seeking transparent and sustainable human capital development.

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