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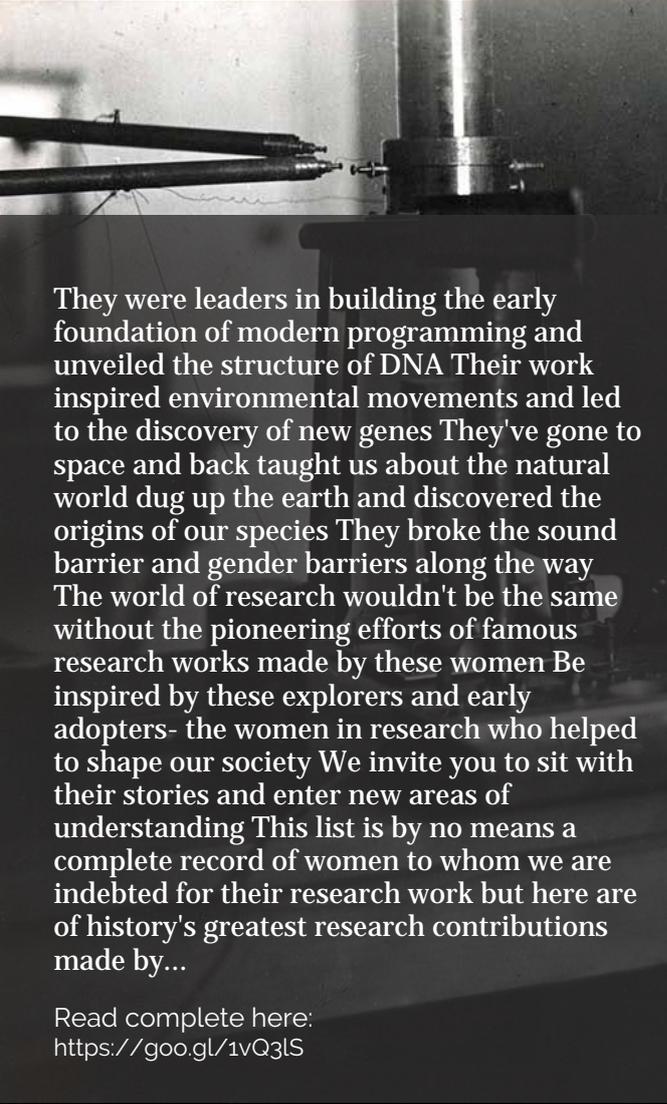
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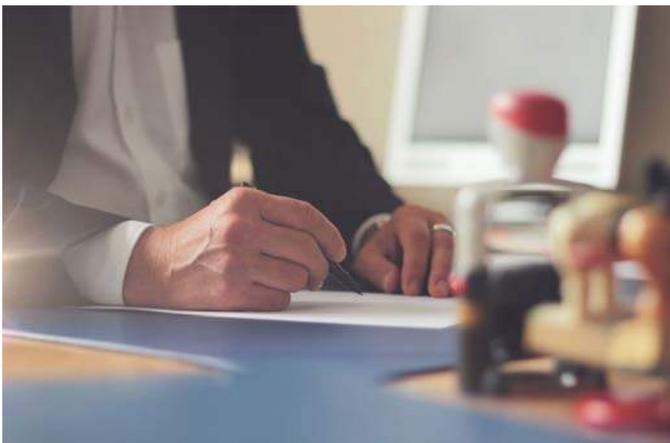
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They were leaders in building the early foundation of modern programming and unveiled the structure of DNA Their work inspired environmental movements and led to the discovery of new genes They've gone to space and back taught us about the natural world dug up the earth and discovered the origins of our species They broke the sound barrier and gender barriers along the way The world of research wouldn't be the same without the pioneering efforts of famous research works made by these women Be inspired by these explorers and early adopters- the women in research who helped to shape our society We invite you to sit with their stories and enter new areas of understanding This list is by no means a complete record of women to whom we are indebted for their research work but here are of history's greatest research contributions made by...

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Modeling the Management Metaphor of Projects Deep Learning using Artificial Intelligence

Volodymyr Manako & Dmytro Manako

ABSTRACT

The acceleration and spread of digital transformations and artificial intelligence creates unprecedented opportunities, problems and challenges for everyone. Our research is the targeted development of arrow theory, innovative models, projects, AI, Big data, behavior analysis, analytics. Goal, problem: How to better define and support the sustainable development of an evolutionary decision-making system, the project "Virtual Laboratory of Exemplary Deep Learning Using Artificial Intelligence" in the context of multilingualism and cultural diversity, the impact of increasingly rapid change? The key subsystems are "Virtual Research Laboratories", Master classes learning and trainings using situation and context simulators, as well as a Big database of unique personal projects. Hypothesis: The status quo of system, the project has a basic arrow metaphor. Conceptual idea: to identify existing and imagined exemplary digital transformations and ensure their exchange to promote sustainable development. Our systematic approach, defined in the development of arrow templates, ideas for improving the understanding and use of the "best first search" method and problem-solving strategies. Various possible solutions are evaluated of the status quo, under which they are likely to be successful, and the path, trajectory, which is considered the most promising, is tested first.

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Volodymyr Manako^α & Dmytro Manako^σ

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The acceleration and spread of digital transformations and artificial intelligence creates unprecedented opportunities, problems and challenges for everyone. Our research is the targeted development of arrow theory, innovative models, projects, AI, Big data, behavior analysis, analytics. Goal, problem: How to better define and support the sustainable development of an evolutionary decision-making system, the project "Virtual Laboratory of Exemplary Deep Learning Using Artificial Intelligence" in the context of multilingualism and cultural diversity, the impact of increasingly rapid change? The key subsystems are "Virtual Research Laboratories", Master classes learning and trainings using situation and context simulators, as well as a Big database of unique personal projects. Hypothesis: The status quo of system, the project has a basic arrow metaphor. Conceptual idea: to identify existing and imagined exemplary digital transformations and ensure their exchange to promote sustainable development. Our systematic approach, defined in the development of arrow templates, ideas for improving the understanding and use of the "best first search" method and problem-solving strategies. Various possible solutions are evaluated of the status quo, under which they are likely to be successful, and the path, trajectory, which is considered the most promising, is tested first. The decision is made by a person, taking into account reliable recommendations of artificial intelligence and evaluation according to given criteria. The main principle of the system, project: People should not "run" after samples, but on the contrary, samples should "run" after people. All arrow templates, samples are made as human-oriented as possible, metaphorical, known, practical and move in a

timely manner, taking into account the best practices of a person. The content of the main principle is revealed and interpreted by the following principles of the constructive arrow: MiniMax, Person-centricity, Best first search based on best practices, Duality, Partial understanding. Project scope indicators for the next 3-5 years are determined. The main outcome of the project will be people armed with digital literacy and 21st century competencies.

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I. INTRODUCTION

Modeling the targeted development of massive deep learning in the era of digital transformation, AI and unprecedented acceleration of changes at all levels in the digital and traditional worlds requires solving many complex scientific and practical problems, tasks, such as understanding and explanation, management, forecasting, control, evaluation, leadership, evolution or revolution, variability, complexity, scalability, property protection and confidentiality, reliability, elimination of uncertainty, compatibility, harmonization with existing official and actual standards, laws. In the conditions of the "shift of understanding" in the era of digital transformation, the current scientific and practical problem is the change of thinking and understanding and explanation based on the integration of scientific and technical achievements of various disciplines in various fields of application, territories, etc. The priority areas, the goal of our many years of scientific and applied research and development are the

targeted development of our turnout theory, innovative models, online project management systems, AI systems, large databases, behavior analysis, analytics of all kinds in real time in the field of distance education, lifelong e-learning and applied linguistics. For example, a large multi-year state project for the targeted development of the National Dictionary Base of Ukraine (Shirokov, 2001) and the project of virtual laboratories of the normative explanatory dictionary of the Ukrainian language in 20 volumes, with over 200 thousand dictionary articles, 300 million linguistic corpus units, tens of millions of users from all over the world (Shirokov, 2009), (Shirokov, 2018). The first steps of our Strategy, long-term action plan for solving the above problems and sustainable development of our arrow theory (Manako, 2024), (Manako^{1,2}, 2025): 1. “Data analysis models of the subject's learning throughout life” consisting of: a general model, inheritance models and a Task Register in order to improve the understanding of the properties and qualities of combinations, patterns and making informed decisions by individuals based on the toolkit of data analysis of the subject's learning using an available management system; 2. Paradigmatic model of understanding and using artificial intelligence in learning” consisting of a model of learning metaphors and artificial intelligence, a model of paradigms of academician V.M. Glushkov and psychology (Behaviorism (Body, Mind); Information processing and cognitive psychology; Individual constructivism; Social constructivism and situational learning), “Action. Task Register”; 3. One of the ways, methods, and means of promoting sustainable development of persons is our Virtual Laboratory for the exchange of exemplary digital transformations and artificial intelligence means (VLE). The best strategy, long-term plan is the balanced implementation of personally-centric projects with the support of a powerful ecosystem and scientific and educational infrastructure of online management systems, including: the Evolutionary Big Data Base on the sustainable development of personally-centric projects, patterns, insights, regularities; Online laboratories with online schools, master classes

and smart simulators of environments, situations, scenarios, procedures, which are sustainably improved on the basis of existing packages of international and national guidance documents, laws, and standards. Table of Contents. II. OBJECTIVES: Knowledge gap, Goal, problem,, About concepts from our learning-oriented Glossary, III. MODELING APPROACH: 3.1 Hypothesis formulation, 3.2 The conceptual idea, 3.3 Categories of arrow criteria for the evaluation models, 3.4 The general statement of the problem, 3.5 Arrow Strategy for Problem Solving, 3.6 Arrow principles. 3.7 Escalator Task Register model 3.8 Indicators of Project Scope;; IV. RESULTS AND DISCUSSION, V. CONCLUSION; REFERENCES: 49.

II. OBJECTIVES

Table of Contents: 2.1 Knowledge gap, 2.2 Goal, problem,, 2.3 About concepts from our learning-oriented Glossary, Approach . II. (1) a move toward something (e.g., a stimulus, a goal); a particular method or strategy used to achieve a goal or purpose (2) taking preliminary steps towards a certain goal; a particular way of taking such steps (<https://dictionary.apa.org/approach>); a particular method or strategy used to achieve a goal or objective, ([https://www.merriamwebster.com/dictionary/a pproach](https://www.merriamwebster.com/dictionary/a%20pproach)) Arrow. The notation $X \rightarrow Y$, where X, Y denote the ends of the arrow, expresses the relative presence of the properties of object X in the properties of object Y. In particular, that in the relations “form-content”, “subject-object” from the old, progressive, successful has passed into the new or, conversely, during the life of the subject or from standards, etc. Examples of visual forms of the arrow object: straight, arc, dash-dotted, thick, colored, with sound. Examples of other interpretations of the arrow object: relation, reflection, Cartesian product, function, functor, operator, procedure, algorithm, process, event, activity. The arrow \leftrightarrow denotes the transition from one description (state) to another at a given level of abstraction (intention, design) or its implementation (expression of design), manifestation (the implementation of the design becomes available to users) and instances of manifestation - just like a unique personal

project. The arrow \updownarrow denotes the transition between these descriptions in the direction Abstraction-Implementation and vice versa Arrow approach: a systematic approach defined in the constructs of arrow patterns, , insights to improve understanding and use of the best first search (BFS) method, problemsolving strategies; an analytical practice tool approach in the form of arrow patterns for understanding and using BFS and problem-solving strategies. Different possible solutions are evaluated in terms of the state in which they are likely to be successful, and the path, trajectory, that is considered most promising is tried first. Different possible solutions are made by a person taking into account reliable recommendations of the AI system and are evaluated according to established criteria. Our arrow approach is based on determinism as a fundamental assumption, empiricism as a basic directive, experimentation as a basic strategy, repetition, the necessary requirement of reliability, parsimony as its conservative value, and philosophical doubt as its guiding conscience. It is implemented step by step, combining adaptation and digital transformation of scientific and technical solutions with sustainable value addition using an adapted Agile approach. Agile: is a way of thinking and philosophy, which corresponds to a set of approaches (Scrum, Kanban, XP, Lean) and management methods. Agile methodology is a project management framework that breaks projects down into several dynamic phases, commonly known as sprints. The Agile framework is an iterative methodology. After every sprint, teams reflect and look back to see if there was anything that could be improved so they can adjust their strategy for the next sprint (Agile. 2025) The arrow \leftrightarrow \updownarrow denotes proposed method of horizontal and vertical reduction procedures. These procedures are performed as a Defined processes in the constructions of our theory. Reduction: rewriting an abstraction (intention, design) or its implementation (expression) into a simpler form; (complexity), transforming one problem into another; simplifying data to facilitate analysis; a technique for reducing the size of the state space that a model checking algorithm needs to search;

reduction strategy, the use of rewriting systems to eliminate condensed expressions. Process, project area: a set of related practices , entities that, when implemented together, satisfy a set of goals that are considered essential for improving and optimizing a process, project. Where practice: an activity (functions, work, operations) that contributes to the goals or outputs of a process, project or increases its capabilities; acquired experience, a set of skills, specific knowledge in a certain field of activity. A process, project area is also a means of grouping activities (inputs-outputs, works, activities, functions, operations, etc.) according to their contribution to the possibility, potential, maturity of the process, project. A area is a basic construct of the description $\langle Y \rangle$: a set of related entities, events, practices that, when carried out together, satisfy a set of goals, tasks that are considered essential for improving something. An example of a practice: an activity (function, work, operation) that contributes to the goals (outputs, results) of a process or increases its capabilities; acquired experience, a set of skills, specific knowledge in a certain context. A area is a means of grouping and focusing activities, scenarios of events, options for arrow trajectories, inputs and outputs, works, activities, functions, operations, etc., in order to improve something and increase potential; this basic construct is an effective mechanism for focusing on improving the process, increasing the quality level of specific products, services. Task: goal-oriented activity undertaken by an individual or a group. When such an activity is the subject of observation in an experimental setting (e.g., in problem-solving and decision-making studies), the researcher may set particular objectives and control and manipulate those objectives, stimuli, or possible responses, thus changing task parameters to observe behavioral adjustments. See also search (APA, 2018). Project: A unique process consisting of a set of coordinated and controlled activities with start and end dates, performed to achieve a goal that meets specific requirements and that has limitations in terms of time, cost, and resources (Agile. 2025). An example of understanding the impact of change and the challenges for everyone. During the Athens Innovation Summit 2025, Google's Chief

Scientist and 2024 Nobel Prize laureate Hassabis emphasized (Gassabis. 2025): “In normal cases, it is very difficult to predict the future, for example, 10 years ahead. Today it is even more difficult, given how quickly AI is changing, changes are happening even week after week. The only thing that can be said for sure is that huge changes are coming... The key skill for the new generation will be the ability to “learn to learn”, that is, not just to absorb information, but to be able to independently search for knowledge and adapt to change.”

2.1 Knowledge gap

Merafopa knowledge gap: “In order for a person to be able to grasp mentally; understand even a single word (=Virtual Laboratory of Exemplary Deep Learning using AI), VLEDL), the entire language as a whole (=descriptions of models VLEDLverbal- ↔ ↓ VLEDLmathematical; ↔ ↓ arrow procedure, method of horizontal and vertical reduction and implements the principle of unity of near and far goals) and in all its relationships must already be embedded in him” (Wilhelm von Humboldt).

Common, fashionable concepts and objects in the era of rapid digital transformations and advanced AI systems have many different definitions, meanings and explanations that dynamically change in different contexts, in particular, for civil servants of Ukraine. Currently, there is no generally accepted definition, understanding and explanation of many concepts and objects. Moreover, this is a complex problem. For example, modern linguistics, having realized that the object of its research — language — is evolutionary, has an informational nature, and in the objective sense is a carrier of intelligence, faced a cardinal problem for itself: to realize and understand at the fundamental level the nature of the emergence and formation of connections between language and the natural and AI and vice versa (Shirokov, 2022). One way people communicate with each other about their separate and different experiences in the world is by using figurative language to describe or understand one thing in terms of another. The three most common metaphorical systems that

students use to describe their learning experiences are: “learning is construction,” “learning is growth,” and “learning is movement.” In psychology, metaphor: a figure of speech (figurative language) in which a word or phrase is applied to an object, person, or action that it does not literally denote (e.g., a life path) in order to create a strong, energetic, and powerful (forceful) analogy. Conceptual metaphor: a cognitive process that expresses and shapes new concepts, and without which new knowledge is impossible; iceberg metaphor: the notion that conscious events, like the proverbial tip of the iceberg, represent only a small and accessible aspect of a larger domain of unconscious psychological functioning. Although this metaphor is commonly attributed to Sigmund Freud, it appears nowhere in his published works (APA, 2018).

An example of the semantic interpretation of the project management metaphor in the form of two scenarios of the functioning of sets of individual or group trajectories of the Escalator movement of individuals and their unique projects of life, lifelong learning, work, socialization: 1. A person can move up the steps of his Escalator path (vertical reduction) or move sideways (horizontal reduction), having the necessary types of literacy and competence. This movement (arrow trajectories) determines and realizes their choice by the person himself or not, someone or AI; 2. The escalator suddenly and uncontrollably begins to move in incomprehensible directions with unpredictable accelerations, jerks under the control of AI, possibly to a catastrophe, failure or to the ideal, achievement of planned goals and results, victory. Exercise, task. If everything is clear to you, then please outline your questions and comment, explain possible personal or group scenarios or cases in different contexts.

2.2 Goal, problem

How to better define and support the sustainable development of an evolutionary decision-making system, the project "Virtual Laboratory of Exemplary Deep Learning Using AI" in the context of multilingualism and cultural diversity, the impact of increasingly rapid change? In this study was to identify a general arrow metaphor

"Escalator of sustainable development of unique personally-centric projects". Within our overall model, it is a partial model and represents the evolution of personal project trajectories relative to established planned outcomes. The Escalator aims to achieve the best first search for an exemplary solution based on best practice in the face of increasingly rapid change. The Escalator provides individuals with the opportunity to timely understand the status quo and adapt to the future of learning, work and social life.

2.3 About concepts from our learning-oriented

Examples of detailed descriptions of concepts: arrow theory (Manako, 2006); artificial intelligence; best first search, BFS (Koenig, 2004); consciousness, intelligence (Cleeremans, 2025), (Futurepedia, 2025) (Wrike, 2025), (Vieriu, 2025); best practice (Howard, 2019), (Lopes, 2024); deep learning (Mehta, 2024); digital transformation (Farrell, 2024); lifelong learning (SEC, 2000), (Manako, 2003), (Nygren, 2019), (Webb, 2019); literacy and competencies (Council, 2018), (OECD, 2022), (Vuorikari, 2022); mathematical object (Sharma, 2024); metaphor (Cakhnyuk, 2019), (Pappas; 2023); modeling (EML, 2007), (Kritz, 2023), (Vieira, 2023); project, program (ISO, 2021), (Dawood, 2017), (Endres 2019); project-based learning (Condliffe, 2017), (Hart, 2019), (Howard, 2019), (PBLWork, 2025); psychological object (Brock, 2015); status <https://dictionary.apa.org/>; quo (Haas, 2023). (Zuurmond, 2024). (See also <https://leadschool.in/school-owner/edtech-glossary/>; <https://glossary.sil.org/term/l/>; <https://dictionary.cambridge.org/ru/plus/>; <https://www.britannica.com/Science-Tech>; <https://uis.unesco.org/en/glossary>).

III. MODELING APPROACH

3.1 Hypothesis formulation, 3.2 The conceptual idea, 3.3 Categories of arrow criteria for the evaluation models, 3.4 The general statement of the problem, 3.5 Arrow Strategy for Problem Solving, 3.6 Arrow principles. 3.7 Escalator Task Register model 3.8 Indicators of Project Scope.

3.1 Hypothesis formulation

The status quo has a basic arrow metaphor. The mathematical metaphor we have developed is simple – it is the “Escalator of sustainable development of unique human-centric projects”, which represents the individual trajectories of project participants relative to the established planned results and tasks. It is defined in the mathematical constructs of our arrow theory (Cartesian square, commutative arrow triangle) and ensures the implementation of the BFS exemplary solution in practice. An example of a fundamental fact is the Löwenheim-Skolem theorem: any consistent first-order theory that has an uncountable model also has a countable model. This is a statement from model theory: if the set of propositions in a countable first-order language has an infinite model, then it has a countable model. This means that the possible infinite description $\langle\langle X \rangle \leftrightarrow \uparrow \langle Y \rangle$ has a countable description (model) that contains all the information (Kolmogorov, 1987) about the infinite object. An example of understanding concepts. Information, in its most general sense, is a measure of the heterogeneity and distribution of matter and energy in space and time, a measure of the changes that accompany all processes occurring in the world (Glushkov, 1964). Information available to a computing machine consists of some data about reality – such data that are considered relevant to the task at hand and from which, as is assumed, the desired result can be obtained (Virt, 1985), information: 1. knowledge about facts or ideas gained through investigation, experience, or practice; 2. in information theory, a message that reduces uncertainty; that is, information tells us something we do not already know. The bit is the common unit of information in information theory (APA, 2018); metadata: data about data or information that describes other information; the difference between data and metadata is not absolute and arises mainly from their application - the same resource can be interpreted as both data and metadata (Norris, 2003), (IEEE, 2020). The basic constructs of the $\langle Y \rangle$ description are: triangle, Δ description in the form of triangles with arrows between the vertices, for example, with the vertices $\langle \text{Student} \rangle$, $\langle \text{Task} \rangle$,

<Metaphor>, and ideally all Δ are commutative., i.e., any result of traversing the vertices will be the same; square, \square with arrows between the vertices, for example, with the vertices <Student>, <Task>, <Metaphor>, <AI>, and if any result of traversing the vertices will be the same, then this is a Cartesian square. Ideal case: all squares are Cartesian. Catastrophe: valuable squares are missing or not identified or not taken into account. If the Student makes a decision without AI, then this is described in the Escalator by a triangle, and if with AI, then by a square. The VLE, DLS projects are managed in the form of a defined process with Indicators of Sustainable Improvement of Results using the digital and AI Toolkits. It is defined with mathematized constructs and reference models and metadata sets. Instances of manifestations are Demonstrators. The following definitions are proposed in our models. Defined Process (DP): a process that can be used step by step to achieve a defined aggregation of objects of the igt-content (igt-content: <<i-content>, <g-content>, <t-content>>); i-content: content in which one or more ideas are defined; g-content: [content in which one or more goals are defined; task: goal in a defined context; t-content: content in which one or more tasks are defined; step: activity structure that is defined for the aggregation of objects of the igt-content.

3.2 The Conceptual Idea of the VLE is Simple

To identify existing and imagined exemplary digital transformations, AI and best practices of their application and to ensure their exchange over a long period of time to promote, sustainable development. A basic mathematized Model has been developed with target areas of the Consolidated Register, Defined processes, Toolkit, Demonstrators of the results of human-centric projects. The exchange covers many different processes such as lifelong learning, joint sensing, measurement, collection, cleaning, processing, storage, evaluation, visualization of information, providing feedback of all kinds of analytics. Of particular importance is the exchange of questions and answers in order to improve the search for valuable information samples, patterns, insights, regularities. This idea

is based on the ideas of V. M. Glushkov a new understanding of cybernetics, who back in 1957 defined the main direction of its development mathematization of computing technology and its applications (Glushkov, 1964). He defined the paradigm AI is an additional means of human survival, the content of which is revealed in his 27 conceptual ideas (Kapitonova, 2011).

Metaphor of explanation of the conceptual idea of VLE (naive definition)- The WORKROOM of the famous science fiction writer H.G. Wells (1940): "A vast, ever-growing wealth of knowledge is scattered throughout the world today. This knowledge would probably be enough to solve all the enormous difficulties of our days but it is scattered and disorganized. We need a purification of thinking in a kind of WORKROOM where knowledge and ideas can be received, sorted, summarized, assimilated, clarified and compared"

3.3 Categories of Arrow Criteria for the Evaluation Models

Accurate, Valuable, Simple, Practical. Accurate (Definite) – means systematically aimed at predicting results with a high degree of accuracy based on the analysis of an evolutionary database to increase the reliability of information, taking into account assumptions, uncertainties and errors. Valuable – means systematically providing people with valuable information, predictions and recommendations to help them make the right decision, make the best choice. Simple – means systematically aimed, on the one hand, at building an intuitively understandable semantic structure that every user (from novice to expert) can adapt to their needs, expectations, easily change, explain and interpret. On the other hand, simple means systematically aimed at reducing the intrinsic complexity of the problem; implicit: mathematical developments are often valued for providing shorter proofs, easier calculations, or streamlined solutions to problems. It seems to have more to do with streamlining our thought processes and modes of expression than simplifying models and reducing the number of parameters (Avigad, 2010) or complexity of information. The complexity of a problem is a

measure of how much time, space or other resources are spent. necessary to solve a problem or perform a task. Information complexity is a measure of the total number of properties transmitted by an object and detected by an observer. Practical - means systematic and timely consideration of factors, changes affecting the simulated real situation, in order to provide useful information and forecasts, recommendations, feedback that are relevant and important for making a better decision.

3.4 The General Statement of the Problem

Of developing basic models at the highest level of abstraction is written in the form of combinations of arrows constructs in angle brackets:

$$\langle X \rangle \leftrightarrow \uparrow \langle Y \rangle .$$

X i Y – a verbal i mathematical description of the object “Virtual Laboratory for the Exchange of exemplary digital transformations and artificial intelligence means (VLE)” або DLS. У загальному випадку цей обект описується різними природними мовами, у термінах різних дисциплін та у різних культурних середовищах.. VLE є a scienceintensive means with reliable digital Toolkit, AI Toolki in the form of integrated online laboratories (decision-making systems): Online Laboratory for the Exchange of exemplary digital transformations and artificial intelligence means. Evolutionary database of Big data OBD on the sustainable development of personalicentric projects, samples, insights into patterns; Online school with master classes for beginners, trainees and experts with smart Simulators of environments, situations, scenarios, procedures, which are sustainably improved on the basis of current packages of international and national guidance documents, laws, standards, technical notes, standard procedures, protocols and scenarios, etc. Types of Simulators: Virtual Reality (VR); Augmented Reality (AR); Haptic Feedback; Digital Twin. this is a simulator that simulates situations, scenarios of sustainable development with measurable accuracy in a generated virtual environment. and the corresponding reactions of imitators; Accuracy is one of the 4 mathematized criteria for critical

assessment of the state of the problem-online space. The idea of project is simple: to identify existing and imagined exemplary digital transformations and AI tools for sustainable development and to ensure their convenient exchange over time. The exchange covers many different processes such as lifelong learning, joint sensing, measurement, collection, cleaning, processing, storage, evaluation, visualization of information, providing feedback of all kinds of analytics. Of particular importance is the exchange of questions and answers in order to improve the search for valuable information samples, patterns, insights, regularities. A mathematical description, the status quo question model, is given in). Status Quo: the current state of affairs.

The notation $X \rightarrow Y$, where X, Y denote the ends of the arrow, expresses the relative presence of the properties of object X in the properties of object Y, in particular, that in the relations “form-content”, “subject-object” from the old, progressive, successful has passed into the new or, conversely, during the life of the subject or from standards, etc. Examples of visual forms of the arrow object: straight, arc, dash-dotted, thick, colored, with sound. Examples of other interpretations of the arrow object: relation, reflection, Cartesian product, function, functor, operator, procedure, algorithm, process, event, activity. Student: a subject who learns throughout life. Examples of information description of a student: e-portfolio, language, preferences, eye movement, emotion, window, information panel on the screen, mental schema, roles. Roles (functions) of a lifelong learner: (general role) the main engine, the factor of movement towards the world of innovations; digital client, partner, newcomer, expert, pioneer, leader, dreamer (one who sees something about the future)-. “Imagination is more important than knowledge. Knowledge is limited, while imagination encompasses the whole world, stimulating progress, generating evolution” (A. Einstein).

The arrow \leftrightarrow denotes the transition from one description (state) to another at a given level of abstraction (intention, design) or its

implementation (expression of design), manifestation (the implementation of the design becomes available to users) and instances of manifestation - just like a unique personal project. The arrow \updownarrow denotes the transition between these descriptions in the opposite direction. In other words, $\leftrightarrow \updownarrow$ denotes the application of horizontal and vertical reduction procedures. These procedures are performed as a certain process in the constructions of our theory. Reduction: rewriting an abstraction (intention, design) or its implementation (expression) into a simpler form; (complexity), transforming one problem into another; simplifying data to facilitate analysis; a technique for reducing the size of the state space that a model checking algorithm needs to search; reduction strategy, the use of rewriting systems to eliminate condensed expressions.

3.5 Arrow Strategy for Problem Solving

In the “Understanding Shift” Era of AI defines, based on basic models, the evolution of the exchange of large amounts of information about the status quo to predict the most likely scenarios of sustainable development of events, making informed decisions, approaches and improving processes and results, progress in general. The goal of this process is to determine where we are, why we are here and what will happen in the future if this happens. The principles of sustainable development of the are defined and described in verbal and mathematized forms. Verbal descriptions are based on relevant best practices.

3.6 Arrow Principles

The main principle of VLE, DLS is formulated in verbal form: It is not the subject that “runs after exemplary DT and AI systems” but on the contrary – they should run after the client, the user”. The content of the main principle is revealed and interpreted by the following mathematized principles.

The “MiniMax” principle. This is the principle of unity of close and distant goals of the TR. It is practically implemented by the method of integrating the results of combinations of horizontal and vertical reduction according to

rules such as “Minimal options are implemented top-down, starting from the maximum. And vice versa - “Maximum options are implemented bottom-up, starting from the minimum”. Given the acceleration of digital transformations and their impact on change, it is advisable to update unique projects every three years.

The principle of "Personal-centricity": The minimum unit of projects is a unique personal project of each participant in a joint project; AI is an additional reliable means of survival and sustainable development. The decision is made by a person. All arrow patterns are timely made as personally-centric, metaphorical, known, practical as possible and timely "run" after individuals with best practices, samples.

The principle of "BFS based on best practices".. An example of a verbal definition of BFS (Best First Search): a search algorithm that works according to a certain rule and uses a priority queue and heuristic search. It is ideally suited for computers to estimate the appropriate and shortest path through a maze of possibilities. An example of a verbal definition of BFS: a search algorithm that works according to a certain rule and uses a priority queue and heuristic search. It is ideally suited for computers to estimate the appropriate and shortest path through a maze of possibilities. An example of a mathematized definition of BFS in constructs of arrow theory: a search algorithm on a graph whose edges are arrows.

The principle of "Duality". This is the famous mathematical principle of Duality ([https://en.wikipedia.org/wiki/Duality_\(mathematics\)](https://en.wikipedia.org/wiki/Duality_(mathematics))): If there is an entity, then there is usually its double (and vice versa), which is represented in convenient forms. The construct Double is defined in a formalized dictionary with the meanings Contextual Double, Psychological, Mathematical Double, Metaphorical Double.

Digital Double, Artificial Double.

The principle of "Partial understanding". If something is not defined, then it refers to something more generalized.

The main principle of sustainable development of VLE, DLS in natural language: People should not “run” after samples but vice versa, samples should “run” after people. Or in other words, all arrow patterns are made as person-centered, metaphorical, known, practical as possible, and move in a timely manner with the best practices of the person. Mathematized principles of sustainable development of VLE.

3.7 Escalator Task Register Model Y in the Constructs of the Basic Task Register Model

$\langle Y \rangle = \langle \langle Y \rangle \langle IY \rangle \langle PROC \rangle \langle PY \rangle \langle CR \rangle \rangle$. IY is a description associated with Y ; PY — description of the statement associated with Y , IY ; $PROC$ — description of the procedure (operator, algorithm, process, etc.) that calculates the value of PY and can be performed (calculated) by a person or automatically by a device; CR — criterion associated with the task. Solving the task means determining the procedure $PROC$ that calculates PY and satisfies the criterion CR . If a set of $PROC$ procedures is created, it turns into a task of selecting a $PROC$ or a set of procedures with $\langle PROC \rangle$ according to the criteria CR . Example CR : selection of an algorithm for calculating the extremum of a certain objective function or quality function. According to the system methodology, the definition and use of additional structures for PIO objects and their elements provides many opportunities to define and describe various classes of tasks in the Register, as well as to interpret them in an appropriate way.

Example. CR , Levels of assessment of sets of sections: experimental set; controlled set; exemplary set (proven, optimized, best practice); changes (innovations) of the process are managed; the process is optimized. Process improvement indicator (IND): a discrete measure (degree) of process improvement in a predefined set of process areas, in which all goals from the set are achieved. To determine the IND, it is necessary to establish the appropriate CR criteria and sets of areas. Let the following IND gradations and names be established: IND1 - experimental. IND2 - controlled, IND3 - typified, IND4 - predicted; IND5 - exemplary (proven,

optimized). Criteria for determining the IND for a set of process areas: experimental set - has the following characteristics: implemented; goals (outputs, results) are systematically not achieved or partially achieved; controlled set - has the characteristics: implemented; goals are achieved; there is planning, monitoring and regulation; work products are appropriately established, controlled and maintained; typified set - has the characteristics: managed; uses measured information and methods of analysis and control to improve the process; built on the basis of reference (base) models of parameter aggregations, basic procedures; predicted set - has the characteristics: typified; is managed on the basis of quantitatively measured information; variability limits are set for normal implementation. If necessary, they are set again after appropriate corrective actions, i.e. variations are controlled within the established limits; exemplary set (proven, optimized) - has the following characteristics: predicted; there is evidence (evidence) of compliance with rules and requirements; is constantly improved to achieve current and planned goals (results); changes (innovations) of the process are managed; process optimization is carried out.

Example. Categories of behavior assessment analysis (signals): Conceptually systematic, Applied, Analytical, Technological, Effective assessment. Dimensions of behavior assessment analysis. Conceptually systematic assessment signals that changes in behavior of the person and interpretations of how and why the procedures and scenarios used were effective should be described in terms of relevant standards and recommendations. Applied assessment signals the effects on improving behavior of the person. Analytical assessment signals that the person experimenting should be able to control the occurrence and non occurrence of the behavior. Technological assessment signals when all operational procedures are defined and described with sufficient detail and clarity. Effective assessment signals that the person is effectively using the techniques of behavior and improving it. conceptual internal external.

Model of description of the task Register as an input-output, a decision-making system". <TR> = <Δ> = << BDcon><BDint> < BDext>> (conceptual, internal, external): <<data generator>↔↑ <Δ> ↔↑ <data receiver >> Sets of sections <data generator>: <<process> <object> <consumer> <non-consumer>>.

Types of data origin: <role: consumer>, <role: non-consumer>, <object>, <process>, <system>, <environment>; <data receiver>: process of communications with the subject with interested subjects in order to report their results; <Δ> (commutative triangles): process section of cycles:

<<transformation>↔↑ <visualization> ↔↑ <evaluation>>;

<transformation> - a set of workflows for organizing data to store it in a consistent form that matches the semantics of the data set and its storage method; narrowing down observational, monitoring data sets; creating new variables, functions from existing variables, or computing a set of summary statistics; <visualization> - the process of providing answers (reactions) to questions posed or new questions about the data. in diferent visial forms, Constructive widget: a Pyth programming language object containing many events that have a representation in a browser; <evaluation> - the action or event of making a judgment about something; the act of evaluating something; assessment. threat assessment. assessment of achievements and progress.

Explanation of the construct <visualization> is an interactive analytical dashboard: "a user interface based on predefined measured data flows and data exchange, to which the end user can apply filters and graphical display methods to improve (understand, optimize) activities (functions, works, operations) to achieve set goals (results, outputs) and which is suitable for regular use with minimal training". Explanation of analytical dashboards in a virtual laboratory: this is a user interface of a specific process <monitoring>

designed for long-term tracking by users of various indicators related to distributed processing of registry units and their structural elements; the user interface of the process <communications> designed for documenting interactions between users, in particular, provides for adding, processing, storing, filtering comments (explanations) to register entries, creating and providing messages (corrective actions). Examples of explaining the essence of <visualization>, the use of which contributes to the definition and assessment of sustainable development, the impact of changes, since various images, animations, videos are easier and better to understand intuitively or logically by end users than verbal or mathematical descriptions in the context of basic disciplines.

The metaphor of the Escalator in the form of an Euler spiral (Levien, 2008), various visualizations that present and explain the impact of rapid change for an individual, a group of individuals, and in general in various status quo, from different points of view and perspectives.

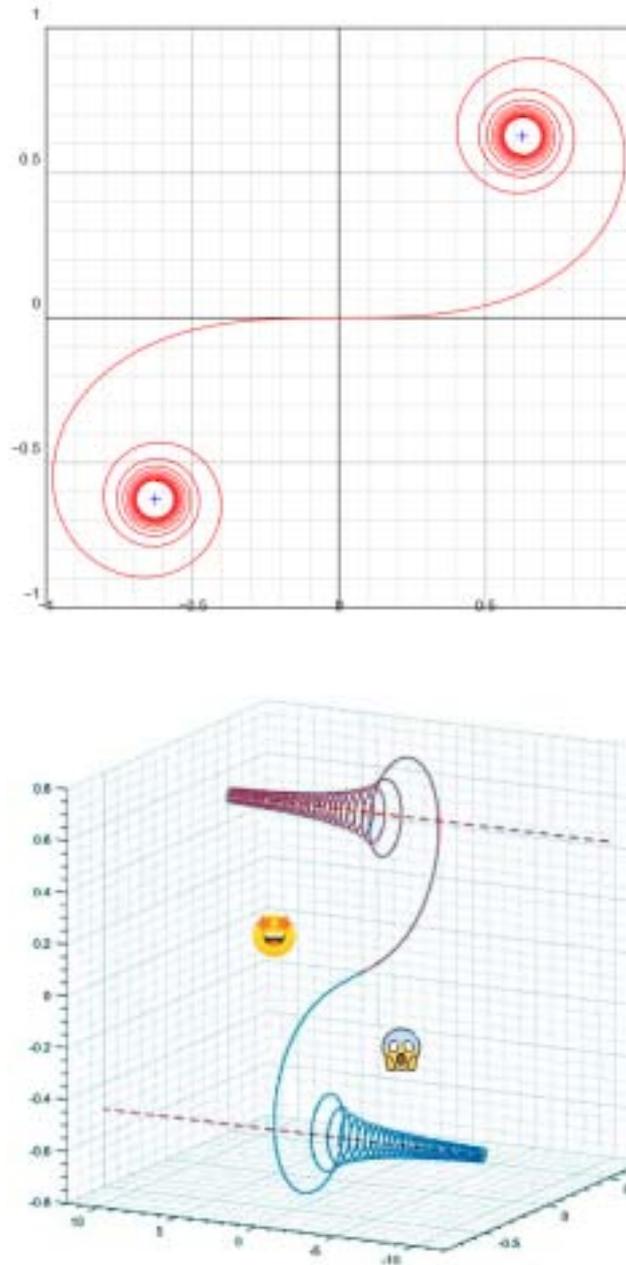


Fig. Euler spiral visualizations

See more complex examples of visualizations in the form of Chinese dragons, images of which have been part of Chinese culture since ancient times. The skins of various dragons represent the evolution of the Escalator and consist of basic constructs, i.e., triangles, squares. (https://en.wikipedia.org/wiki/Chinese_dragon).

The modeling problem $\langle TR \rangle = \langle \Delta \rangle$ can be solved by: building integrated partial models and their implementations; immediately developing a set of visualization templates, which requires determining a set of parameters and systematic

experiments taking into account the comments of all stakeholders over a long period of time. Therefore, a relevant new problem is the development and maintenance of a Big Data database of comments. Example of Escalator visualization parameters: author, visualization adder people, system, AI or together; observation points (arrow, eyes, head, finger, etc.) with sets of metadata about their status quo, history; zoom visualizations; variability of Escalator representations with equivalent mathematical descriptions, for example, line-ribbon, layer-torus; adding sounds, gestures.

Mathematized Model of functional structure and digital content <DLS> is proposed: <<event> <unit of learning>>. Description of the model <event>: <<prerequisite> <metadata> <annotation> <comment> <explanation> <attitude> <communication (interaction)> <search> <download> <view> <learn> <test> <question> <assessment: answers> ...>>.

Example of the model

<unit of learning>: <<prerequisite> <metadata: keywords> <task> <fact> <concept> <idea> <question> <principle>, <problem> <procedure> <process> <role> <example> <non-example> <correspondence> ...>.

Example. Formalized description of the Register: <<context: lifelong learning > <event > <area> >, <event>: <<metadata> <annotation> <comment> <search> <view> <question> <load more> <record > ...>;<area>: <<prerequisite> <metadata> <role> <action plan> <didactic method> <concept>> <illustration> <not illustration> <test> ...>.

Our arrow approach is based on determinism as a fundamental assumption, empiricism as a basic directive, experimentation as a basic strategy, repetition, the necessary requirement of reliability, parsimony as its conservative value, and philosophical doubt as its guiding conscience. It is implemented step by step, combining adaptation and digital transformation of scientific and technical solutions with sustainable value addition using an adapted Agile approach. Agile: is a way of thinking and philosophy, which corresponds to a set of approaches (Scrum, Kanban, XP, Lean) and management methods. Agile methodology is a project management framework that breaks projects down into several dynamic phases, commonly known as sprints. The Agile framework is an iterative methodology. After every sprint, teams reflect and look back to see if there was anything that could be improved so they can adjust their strategy for the next sprint (Agile. 2025).

3.8 Indicators of Project Scope

Register of entries and learning units: over 2,500 concepts, 3,000 AI tools, over 5,500 learning units associated with concepts and tools.; Virtual website of the virtual organization of Project at least 2 million. visits quarterly by servants (Given the social significance and number of people, the Community of Civil Servants was selected for our project);.Evolutionary information base of Big data with current good practices, templates, patterns, samples, recommendations, revealed patterns and insights; Specialized online laboratories with projects of exemplary solutions of individuals in various contexts, situations and conditions. Registers of samples with reference sets of metadata; Strategy (plan) of further digital transformation determined on the basis of our Mathematical inheritance model (Manako, 2024) Register of BFS tasks.

IV. RESULTS AND DISCUSSION

The main result of our research and development, in our opinion, is the mathematization of an evolutionary science-based object, a long-term project, a tool for "Massive Deep Learning Throughout the Lifetime of Civil Servants" (from the point of view of basic disciplines such as mathematics, psychology, digital pedagogy, lifelong learning, linguistics, computer science, project management) in the form of an arrow approach and basic arrow models starting from the highest level of abstraction to the level of engineering implementations. See details II. OBJECTIVES: 2.1 About the objects of our research; 2.2 Problems; 2.3 Model of a learning-oriented Glossary;2.4 Knowledge gap; 2.5 This study aim. III. Modeling Approach:3.1 The conceptual idea; 3.2 Arrow criteria of evaluation; Common problem; 3.4 Hypothesis; 3.5 The Escalator Task Register model; 3.6 Arrow Strategy; 3.7 The arrow principles 3.8 Indicators of Project Scope IV. Results And Discussion: V. Conclusion.

Indicators of Project Scope: Register of entries and learning units: over 2,500 concepts, 3,000 AI tools, over 5,500 learning units associated with concepts and tools.; Virtual website of the virtual

organization of Project at least 2 million. visits quarterly by servants (Given the social significance and number of people, the Community of Civil Servants was selected for our project); Evolutionary information base of big data with current good practices, templates, patterns, samples, recommendations, revealed patterns and insights; Specialized online laboratories with projects of exemplary solutions of individuals in various contexts, situations and conditions. Registers of samples with reference sets of metadata; Strategy (plan) of further digital transformation determined on the basis of our Mathematical inheritance model (Manako, 2024) Register of BFS tasks.

Questions for open commenting

A metaphor to improve understanding and explanation контексту питань: "We can allow the future to happen or make an effort to imagine it. We can imagine it as dark or light - it depends on what it will be like" (David Gelertner, 2000).

a). <Consciousness>. Question, problem. Consciousness science: where are we, where are we going, and what if we get there? Understanding consciousness is one of the most substantial challenges of 21st-century science and is urgent due to advances in AI and other technologies (Cleeremans, 2025).

b). How to define and visualize a set of single arrows of an evolutionary entity object $\langle \Delta \rangle = \langle \langle \text{BDcon} \rangle \langle \text{BDint} \rangle \langle \text{BDext} \rangle \rangle$? How do we define and visualize a set of single arrows <metaphor>? For example, the basic metaphor is the evolutionary object < Memo of the subject's vital way>. Are Escalator and Memo equivalent, congruent?

c). In arrow theories, abstract mathematical entities are considered real, and others are their meaningful interpretations. Do they exist independently, are they real, independent of us, or are they created by our brain for practice? How to prove the identity between X and Y - a description of X?. Examples of answers regarding understanding the difference: prove that X is an ideal analogue of Y and vice versa; catastrophe metaphor: the subject evaluates something and does not understand that his literacy and

competencies are not enough to see the "White Crow" in X and Y. There are many research questions regarding the communication model. How to determine the context? How to determine and use the main language of the subject? How to determine and use the methods and tools of the subject? Is there no difference between X and Y if there is an algorithm that proves that all known information about X and Y is the same. Who, when, why, how best to define human-centric lifelong learning projects for target groups of individuals: AI; model, solution; patterns, samples from the system's Big Data database; external best practices? Other examples of natural language description of definitions of an object from different points of view. A mathematical object see definition and questions in (Sharma, 2024). The LTSC IEEE standard Metadata of an educational object defines (IEEE, 2020): an educational object, LO: Any entity, digital and non-digital, that can be used for learning, education or training. Psychological objects (Brock, 2015,): these are the things that psychologists study. Some examples can be found by reviewing the contents of an introductory psychology textbook. These include perception, memory, learning, intelligence, personality, attitudes and motivation, and attitudes. The four main goals of psychology are to describe, explain, predict, and change or control the minds and behavior of others. As an interdisciplinary and multifaceted science, psychology includes a wide range of subfields, such as social behavior, human development, and cognitive functions. See more in the article History of Psychological Subjects. The eight different types of psychology include abnormal, biopsychology, cognitive, developmental, forensic, industrial-organizational, personality, and social psychology. Each field offers unique perspectives and practical applications in the real world.

As before, we believe in the power of our arrow theory....

V. CONCLUSION

In the era of digital transformation and AI, the relevance of solving the complex problem of the shift of "thinking and understanding" based on

the integration of scientific achievements from various disciplines, in particular, in our scientific and practical arrow theory, which has been developing since the beginning of the 21st century, is increasing. The complex problem of understanding, explaining, predicting and controlling digital transformations an AI systems in order to promote the sustainable development of entities in conditions of increasingly rapid changes can be considered from different points of view, perspectives, goals, scientific and technological paradigms, theories, approaches, methods, using various information processing tools, procedures, tools, services, taking into account relevant international and national guiding documents.

The overall goal, the problem of our long-term research: How to better define and support the sustainable development of evolutionary science-based complex decision-making systems and the project “Virtual Laboratory of Exemplary Mass Deep Learning using AI in conditions of multilingualism, multiculturalism and the influence of increasingly rapid changes” (VLEDL1)? Integrated subsystems: Online research laboratories, training, training with simulators of situations and context, evolutionary database of Big Data on unique projects of persons. Each participant of VLEDL1 is a consumer and contributor, co-author of the entire project. We are interested in current research and projects with the participation of international and Ukrainian parties with the our Scientific Council of experts - individuals, legal entities.

The goal of this research was achieved on the basis of our arrow theory and the basic models. A model of metaphor management was built. sustainable development of unique personcentered projects in order to improve understanding and explanation of the essence of a complex system and project. Metaphors represent interactive visualizations of the evolution of personal project trajectories relative to planned results and measurable goals. Conceptual idea of building a model: to identify existing and imagined exemplary digital transformations and AI, practices of their application and to ensure their exchange over a long period of time to

promote sustainable development. The exchange covers various processes: lifelong learning, joint sensing, measurement, collection, cleaning, processing, storage, evaluation, information visualization, feedback, real-time analytics. Research methodology covers: status quo, conceptual idea, mathematized models, problem statements. principles, arrow approach, evaluation criteria, main research method. Project volume indicators for the next 3-5 years are determined.

The strategy for further digital transformation of VLEDL1 is determined on the basis of our Mathematized inheritance model and BFS Task Register. The strategy aims to: systematically and sustainably improve value, understanding, progress, accessibility, reliability, safety, efficiency, certainty and exemplary decision-making; assessed on the basis of a critical analysis of the status quo of the project, i.e., What and why it happened and what will happen and do in the future.

The main steps, goals of carent research: completion of the building of user interface models, commenting, testing, the Metadata Register; Creation and testing of the project website Demonstrator for civil servants' communities (vledl1.org).

The main outcome of the project will be people armed with digital literacy and 21st century competencies.

REFERENCES

1. Agile. (2025) What is the Agile methodology? a.<https://asana.com/resources/agile-methodology>
2. APA. (2018). APA Dictionary of Psychology. <https://dictionary.apa.org>.
3. Avigad, (2010). Avigad J. Mathematical Simplicity. Carnegie MellonUniversity. <https://www.andrew.cmu.edu/user/avigad/Talks/simplicity.pdf>
4. Brock, A. C. (2015). The history of psychological objects. In J. Martin, J. Sugarman, & K. L. Slaney (Eds.), *The Wiley handbook of theoretical and philosophical psychology: Methods, approaches, and new*

- directions for social sciences* (pp. 151– 165). Wiley Blackwell. <https://awspntest.apa.org/record/2015-56271-010>.
5. Cakhnyuk O.S. (2019). Theories of metaphor. *Scientific notes of the National University «Ostroh Academy»: series «Philology»*. Publication of NaUOA, Ostrog, 2019, Vol. 6 (74), 30–33.
 6. Cleeremans A, Mudrik L and Seth AK. (2025) Consciousness science: where are we, where are we going, and what if we get there? *Front Sci* (2025) 3:1546279. doi: 10.3389/fsci.2025.1546279
 7. Condliffe B. (2017). Project-Based Learning: A Literature Review. Working Paper. <https://files.eric.ed.gov/fulltext/ED578933.pdf>.
 8. Council of the European union recommendation. (2018). Key competences for lifelong learning. *Journal of the European Union*. Text with EEA relevance (2018/C 189/01).
 9. Dawood, Farouk, Ahmed. (2022). The possibility of applying the international standard (ISO 10006:2017) To manage the quality of the project in the Directorate of the municipality of Dhuluiya *Journal for Educators, Teachers and Trainers*, Vol. 13(5). 514-530. <https://doi10.47750/jett.2022.13.05.047>
 10. Farrell. R. (2024). What is digital transformation? <https://www.digitaltransformationinstitute.ie/what-is-digital-transformation>
 11. Gassabis. (2025). Athens Innovation Summit by Endeavor <https://www.youtube.com/watch?v=RmZlMYmWlJU&t=2946s>.
 12. Glushkov, V. M. (1964). About cybernetics as a science.” In: *Cybernetics, Thinking, Life*. Moscow: Nauka, 1964. 53 p.
 13. Kapitonova, Yu. V., and Letichevsky, A. A. (2011). “Paradigms V.M. Glushkova.” 2011. URL: <http://ogas.kiev.ua/en/glushkov/paradygmy-glushkova>
 14. Haas. (2010). The Power of Questioning the Status Quo How the first of the four Berkeley Haas Defining Leadership Principles gets to the heart of changemaking.. <https://executive.berkeley.edu/thought-leadership/blog/power-questioningstatusquo>
 15. Hart. (2019). Interdisciplinary project-based learning as a means of developing employability skills in undergraduate science degree programs. *Journal of Teaching and Learning for Graduate Employability*, vol. 10, no. 2, pp. 50-66, 2019. <https://doi.org/10.21153/jtlge2019vol10no2art827>.
 16. Howard N. R. (2019). EdTech Leaders' Beliefs: How are K-5 Teachers Supported with the Integration of Computer Science in K-5 Classrooms? *Technology, Knowledge and Learning*, v. 24, n. 2, p. 203-217, 2019. <https://doi.org/10.1007/s10758-018-9371-2> . <https://edtech-class.com/projectbased-learning/>
 17. Endres, H., Huesig, S., Pesch, R. (2022). Digital innovation management for entrepreneurial ecosystems: services and functionalities as drivers of innovation management software adoption. *Rev Manag Sci* 16, 135–156. <https://doi.org/10.1007/s11846-021-00441-4>.
 18. EML. (2007). Educational Modeling Languages: A Conceptual Introduction and a High-Level Classification /I.L Martinez Ortiz, P. Moreno-Ger, J.L. Sierra. *Computers and Education* 2007, pp. 27–40.
 19. IEEE. (2020). Standard for Learning Object Metadata,» in *IEEE Std 1484.12.1- 2020*, vol., no., pp.1–50, 16 Nov. 2020, doi: 10.1109/IEEESTD.2020.9262118
 20. ISO. (2021). ISO 21500:2021. Project, programme and portfolio management — Context and concepts. <https://www.iso.org/ru/standard/75704.html>
 21. Kapitonova, Yu. V., and Letichevsky, A. A. (2011). “Paradigms V.M. Glushkova.” 2011. URL: <http://ogas.kiev.ua/en/glushkov/paradygmy-glushkova>
 22. Koenig, S. (2004). A Comparison of Fast Search Methods for Real-Time Situated Agents. Proceedings of the Third International Joint Conference on Autonomous Agents and Multiagent Systems - Volume 2 (pp. 862-871). Washington, DC: IEEE Computer Society.
 23. Kolmogorov, A. N. (1987). “Three approaches to defining the concept of «amount of

- information». *Information theory and algorithm theory*, pp. 213–223.
24. Kritz M (2023). Modelling as a process. *Computational and Applied Mathematics*, 2023 [Accessed 15 Dec. 2023]. <https://doi.org/10.1007/s40314-023-02308-8>
 25. Levien R. (2008) The Euler spiral: a mathematical history. Electrical Engineering and Computer Sciences. University of California at Berkeley. Technical Report No. UCB/EECS-2008-111. <http://www.eecs.berkeley.edu/Pubs/TechRpts/s/2008/EECS2008-111.htm>
 26. Lopes Y. M. (2024). What are edtechs? A systematic literature review *READ. Rev. eletrôn. adm. (Porto Alegre)* 30 (2). <https://doi.org/10.1590/1413-2311.405.135580>.
 27. Manako A.F., Manako V.V. (20003). Electronic learning and educational objects. *Kazhan Plus, Kyiv*, 2003, 334 p.
 28. Manako A. F. (2006). Framework for building MANOK systems // *Bionics of the intellect*. – 2006. – № 2 (65). – C. 77–82.
 29. Manako A.F. (2022) Systematic Investigation of Continuous E-Learning as a Complex Information System. *Control Systems and Computers*, 2022, Issue 3, 53– 62. <https://doi.org/10.15407/csc.2022.03.053>
 30. Manako A. F., Manako V. V. (2024). Models of data analysis of the subject's learning throughout life. *Control systems and computers*. № 2. 48-64. <https://doi.org/10.15407/csc.2024.02.048> (in Ukr.).
 31. Manako¹ A. F., Manako V. V. (2025). Paradigmatic model of understanding and using artificial intelligence in education. *Information Technologies and Systems*. 1(1). 59–76. <https://doi.org/10.15407/intechsys.2025.01.059> (in Ukr.).
 32. Manako², V., & Manako , D. V. (2025). A online laboratory for exchange exemplary digital transformations and artificial intelligence means. *Isagoge - Journal of Humanities and Social Sciences*, 5(1), 453–478. <https://doi.org/10.59079/isagoge.v5i1.273>
 33. Mehta. (2024). Commentary: Leading for deeper learning: why a human vision of schooling demands a human vision of leadership. *Journal of Educational Administration*. January 2024. 62(1):173-177. <https://doi.org/10.1108/JEA-01-2024-276>.
 34. Norris, D., Mason, J., & Lefrere, P. (2003). Transforming e-Knowledge, *Society for College and University Planning*: Ann Arbor, USA. 168 p.
 35. OECD. (2022) New AI Literacy Framework to Equip Youth in an Age of AI a. <https://oecdutoday.com/new-ai-literacy-framework-to-equip-youth-in-an-age-of-ai/>
 36. Pacala F. A. (2025). “Enhancing science teachers’ science process skills using technology-driven interdisciplinary project-based learning”, *ITLT*, vol. 107, no. 3, pp. 207–221, Jun. 2025, <https://doi.org/10.33407/itlt.v107i3.5903>.
 37. Pappas C. (2023). 7 Tips To Use Visual Metaphors In eLearning. URL: <https://elearningindustry.com/7-tips-use-visual-metaphors-in-elearning>.
 38. PBLWorks. (2025). Research & Evidence Strategic Priority Plan 2025. https://www.pblworks.org/sites/default/files/2025-08/R%26E%20Strategic%20Priority%20Plan_2025_Public%20%281%29.pdf
 39. Sharma, Kaushal, Maheshwari, Aditya, Kulkarni. (2024). A note on mathematical objects. *Texas*, <https://dx.doi.org/10.2139/ssrn.5068798>.
 40. Shirokov V., Manako V. (2001). Organization of resources of the national dictionary base. – *Movoznavstvo*, 2001, No. 5. (in Ukr.).
 41. Shirokov V. A., Manako V. V. (2009). Mathematical constructions for the formal description of the fundamental academic lexicographic system "Dictionary of the Ukrainian language" // *Illustrative linguistics and linguistic technologies: MegaLing'2008: Collection. of science pr. - K.: Trust. – 2009. – P. 161–167* Shirokov V. et al. (2018). Vol. 3: Interpretive lexicography. Kyiv. *Ukrainian Language and Information Fund of the NAS of Ukraine*. 2018. <https://doi.org/10.33190/978-966-02-8683-2/8687>. (in Ukr.)-
 42. Shirokov V. A. (2022). Changing the paradigmatic vector of modern linguistics: some methodological considerations/ *SSN 0027-2833. Linguistics*, 2022, 6. <https://doi.org/10.33190/-2833-327-2022-6-001>.

43. SEC. (2000) .*A memorandum on life-long learning* (2000). Commission staff working paper. Brussels, SEC, No 1832, 36 p.
44. Vieriu A. M., Petrea. G. (2025) The Impact of Artificial Intelligence (AI) on Students' *Academic Development Educ. Sci.* 15(3), 343; <https://doi.org/10.3390/educsci15030343>.
45. Virt, N. (1985). *Algorithms + data structures = programs. M.: Mir*, 1985. 406 p.
46. Vuorikari, R., Kluzer, S., Punie, Y. (2022). DigComp 2.2, The Digital Competence framework for citizens – With new examples of knowledge, skills and attitudes, *Publications Office of the European Union*, <https://doi/10.2760/115376>.
47. UNESCO. (2024). Understanding the impact of artificial intelligence on skills. https://unevoc.unesco.org/pub/understanding_the_impact_of_ai_on_skills_development.pdf
48. Webb S., Holford J., Hodge S., Milana M., Waller R. (2019). Conceptualising lifelong learning for sustainable development and education 2030. *International Journal of Lifelong Education*, 2019, Vol. 38 (3), 237–240. <https://doi.org/10.1080/02601370.2019.1635353>.
49. Wrike, (2025). Discover the future of work with Wrike AI. <https://trial.wrike.com/lproject-management/>
50. Zuurmond A. (2024). Learning to question the status quo. Critical thinking, citizenship education and *Bildung* in vocational education. *Journal of Vocational Education & Training* Volume 76, 2024. Issue 5. Pages 1185-1204. <https://doi.org/10.1080/13636820.2023.2166573>.

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ABSTRACT

Public awareness campaigns are a strategic tool to inform, educate, and influence behavioural outcomes within targeted populations. University students represent a valuable demographic for such campaigns because they represent a critical stage of cognitive, social, and identity development.

This paper provides a study of the effectiveness of public awareness campaigns in shaping attitudes and behaviours of students in “Aleksander Moisiu” University of Durres, in Albania. Referring to behavioural science theories, recent empirical research, communication studies, and primary analysis deriving from students’ participation in an online questionnaire, the paper discusses factors that influence campaign success. These factors include credibility, message framing, delivery channels, and engagement strategies.

The study highlights that public awareness campaigns can significantly influence university students’ attitudes and behaviours when addressing issues perceived as immediate or personally meaningful and designed with intentionality, relevance, and student engagement in mind.

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The study highlights that public awareness campaigns can significantly influence university students' attitudes and behaviours when addressing issues perceived as immediate or personally meaningful and designed with intentionality, relevance, and student engagement in mind.

Recommendations for designing effective campaigns tailored to university contexts are also synthesized.

Keywords: public awareness, campaign, students, behaviour, albania.

Author: Lecturer at Aleksander Moisiu University of Durres.

I. INTRODUCTION

Public awareness campaigns are essential communication strategies used to address large-scale social, health, or environmental issues. These campaigns aim to increase public knowledge, shift attitudes, and ultimately influence individual and collective behaviour. University students made up a unique audience: they are technologically connected, socially engaged, and highly exposed to information flows, yet often sceptical of institutional messaging. Is this duality that makes them both promising and challenging targets for awareness initiatives.

The purpose of this paper is to explore the extent to which public awareness campaigns influence university students' attitudes and behaviours in Aleksander Moisiu University of Durres. Which sources do students trust mostly and how do they react to information presented through these platforms. It examines theoretical frameworks that explain behaviour change, evaluates empirical findings from previous studies, and evaluates as well primary sources that include opinions and suggestions that come from university students of Bachelor and Master's Programmes in University Aleksander Moisiu. It aims to identify critical elements that contribute to campaign success in university settings.

II. LITERATURE REVIEW

2.1 Theoretical Approaches to Behaviour Change

Public awareness campaigns use strategic communication to educate the public and motivate change. In order to understand how campaigns shape behaviour this study refers firstly to previously established psychological and communication theories. The following theories

explain about campaign impact and how social environments influence behaviour, how people learn and adapt new behaviours, or factors that may make it easier or harder for people to adopt healthier or safer behaviours.

- a. The Theory of Planned Behaviour (Ajzen, 1985) implies that behavioural intention that is shaped by attitudes, subjective norms, and perceived behavioural control, predicts actual behaviour. This theory is frequently applied in campus campaigns promoting health and sustainability behaviours. As a general rule, the stronger the intention to engage in a behaviour, the more likely should be its performance” (Ajzen, 1991, p. 181).
- b. Social Cognitive Theory (Bandura, 1986), as one of the most frequently applied theories of health behaviour emphasizes observational learning, social influence, and self-efficacy. Peer-led initiatives based on SCT have proven effective among university populations because students tend to model behaviours demonstrated by relatable peers.
- c. While Health Belief Model of Hochbaum explains behavioural choices through perceived susceptibility, severity, benefits, and barriers. Campaigns targeting mental health or substance use often apply HBM to highlight risks and promote help-seeking.
- d. The Elaboration Likelihood Model was developed by Richard E. Petty and John T. Cacioppo in the 1980s. It’s a theory of persuasion that explains how people process messages through the central route (deep, thoughtful processing) and peripheral route (surface-level cues). According to the theory, students are more persuaded by messages that they find relevant and credible, particularly when processed through the central route.

Based on these theories, other characteristics of students and the way they approach to latest internet -based platforms, a connection may be found that gives a better understanding of how to organise public awareness campaigns that increase students’ engagement.

2.2 Characteristics of University Students as an Audience

University students have distinct traits that impact how they respond to campaigns. These characteristics require campaigns to be relatable, evidence-based, and interactive.

It is a fact that the young generation has a high digital exposure, and they rely on digital platforms for information gathering. Gen Z uses online platforms deeply for learning, health, and social interaction.

A 2023 study published in JMIR looked at Gen Z and their exposure to and use of digital media for self-relevant health topics. Participants age varied from 18 to 26 and the study found that, compared to previous generations they rely more on the internet for information related to health. The same study found that digital health literacy predicts their information-seeking behaviour, but that higher use of digital media does not always lead to more health empowerment for them (Jiao et al. 2023).

Another global survey found that Gen Z and Millennials heavily favour social media platforms like YouTube, Instagram, or TikTok for health-related or scientific information (Blandi Lorenzo et al. 2022). According to (West et al, 2024) adolescent social media use (including high exposure) plays a strong role in shaping their digital competence or their ability to navigate, assess, and interact with digital content. While, in the study “The Moderating Effects of Young Adults’ Personality Traits on Social Media Immersion,” researchers found that personality traits influence how deeply young people get immersed in social media (Yu et al. 2020). In addition, according to West et al. (2024b) reveal as well that social media use during adolescence can boost digital competence like communication or information seeking but may also displace other developmental activities.

Also, according to Schwarze (2025), Gen Z young adults are very attuned to social groups, inclusion, and diversity. This suggests how deeply matter peer group norms and identities. Adolescent development research notes as well that during

teenage years, key areas of the brain (like those for self-regulation) are still developing, which makes them more sensitive to emotional or peer-driven decisions (Carolin Falcon et al. 2023).

Social media is more than entertainment. It is a space where young people try out identities, evaluate their values, and clarify who they are. A coherent review (Avci et al. 2024) in Adolescent Research Review found that active participation on social media (not just passive scrolling) is strongly tied to identity exploration. The authors also note that authenticity in online self-presentation (vs. idealized “perfect” selves) correlates with greater self-concept clarity.

Another study (2024) specifically looked at how social media affects adolescents’ self-esteem and self-presentation, supporting the idea that as Gen Z uses these platforms, they are forming and assessing their values, identity, and peer relationships (Agarwal, 2024). This explains how the developmental stage of exploration and value formation is very much supported by social media as a space where identity is shaped.

One other student’s trait is that their trust in information and their identity is strongly shaped by peer networks and social contexts. There’s strong peer network influence on how they interpret information, and their trust, including scepticism, is formed in social contexts.

A 2023 / 2024 design-oriented study on how young adults assess online information highlighted that trust decisions are socially motivated. People consult peers, rely on group norms, and their assessments are “social and collaborative.” (Vlachokyriakos et al. 2024)

Relatedly, a 2023 arXiv study found that Gen Z does not just evaluate online info individually, rather they interpret it in social groups. Their “information sensibility” is socially embedded (Hassoun et al. 2023)

Last but not least, this generation tends to have a feeling of scepticism in institutions. Research on Gen Z and civic engagement points to vulnerability to fake news and a somewhat detached relationship with traditional institutions. They often rely on social feedback

(likes, shares) and peer networks to assess credibility (Alexandra – Niculina et al. 2025)

Distrust in higher education or other formal institutions is backed by survey data, and their social information practices reflect that scepticism. They lean toward peers or social cues rather than top-down messaging.

These findings tie into the assumption that there’s measurable distrust in institutional sources among Gen Z, especially in academic settings, and social media plays a role in how they form their beliefs and attitudes.

A 2022 survey by Inside Higher Ed found that a considerable percentage of Gen Z aged 18 to 25 years does not trust higher education institutions (Knott, 2022).

Another study found that Gen Z students lean heavily on digital platforms (social media) for news and school-related information, and many of them consider themselves “social activists.” (A. Buzzetto et al. 2024). More broadly, a 2023 review of social media’s impact on adolescents noted that social media use is linked to both positive and negative developmental outcomes (mental health, identity), which can feed scepticism about traditional institutions, especially if those institutions don’t reflect or address what youth experience online (Carolina Falcon Linares et al. 2023)

While Perez-Escoda et al. in 2021 found that young people aged 18 to 22 years show low trust in politicians, media, and journalists and many of them associate misinformation with manipulation, distrust, and danger.

Table 1: Summary of tendencies of students to respond to campaigns

They have a high exposure to digital and social media content
The influence from peer networks and campus culture is strong
They experience a developmental stage marked by exploration and value formation
They show a tendency toward scepticism of institutional or government messaging

Source: Jiao et al. 2023, Blandi Lorenzo et al. 2022, West et al 2024, Carolin Falcon et al. 2023, Avci et al. 2024, Agarwal, 2024, Knott, 2022, A. Buzzetto et al. 2024 and more.

In conclusion, previous studies on campaign effectiveness across multiple domains, such as mental health awareness, environmental sustainability, sexual health, and substance use, highlight several findings:

- Campaigns using interactive digital content (videos, gamified challenges, social media influencers) show higher engagement.
- Peer-led interventions increase trust and message acceptance.
- Campaigns that integrate on-campus events, workshops, or student ambassador programs achieve stronger behavioural outcomes compared to purely digital campaigns.
- Repetition and cross-platform messaging strengthen retention.

However, limitations such as message fatigue, scepticism about sponsorship motives, and the gap between attitude formation and actual behaviour may be noted as well.

III. METHODOLOGY

This chapter delineates the research design and methods used to investigate the influence of public awareness campaigns on Students' Attitudes and Behaviours. The study employs a mixed-methods approach, combining secondary research with primary data collection conducted through a structured survey targeting students at the University of Durres. The use of both data types allows for a more comprehensive understanding of the research problem, enabling cross-validation of findings and the identification of patterns that may not be visible through a single method.

3.1 Survey design

The research adopts a mixed design. Secondary research was used to establish the theoretical framework, review existing literature, and position the study within current academic and professional discussions. Primary research was conducted to obtain first-hand insights from UAMD students, capturing their perspectives, experiences, and attitudes related to public awareness campaigns. This dual approach ensures that the study is grounded in established knowledge while also reflecting the specific context of the student population.

3.2 Sampling and participants

Primary data was collected using an online survey administered to students enrolled at UAMD. The survey aimed to gather quantifiable information on the topic of this paper. The questionnaire consisted of closed-ended questions (Likert scales, multiple choice) and open-ended items. The survey was designed based on insights from the secondary research to ensure content validity. A convenience sampling method was used. Students from various departments and study levels were invited to participate. In total, 67 responses were collected.

3.3 Data Collection Procedure and Analysis

The survey was distributed via email and social media. Participation was voluntary, anonymous, and in accordance with ethical research guidelines. Quantitative responses were analysed using Excel to identify trends and frequencies.

3.4 Ethical Considerations and Limitations

The research adhered to ethical standards, ensuring confidentiality, informed consent, and

voluntary participation. No personal identifying information was collected. Limitations include the use of a non-probability sample and the potential for respondent bias. Additionally, the findings based on UAMD students may not be generalizable to other populations.

IV. RESULTS

4.1 Results of the quantitative analysis

Two groups of Bachelor's and Master's students participated in the questionnaire. The answers were collected from "Google Forms". The questionnaire structure and its main pillars include Demographics, Campaign Exposure,

Students' Perception and personal involvement, Engagement and Behaviour, Motivation and Barriers and Open-Ended reflection.

Overall, 67 students participated in the survey "How do public awareness campaigns influence university students' attitudes and behaviours".

There was a significant overrepresentation of women in the sample, comprising 62.5 % of the respondents. This is also related to the fact that in the Programs offered by the Public Administration Department, the majority of students are female. Age distribution and education level are presented as follows:

Table 2a: Age of participants

Age	
18-25	62.50%
25-35	21.90%
over 35	15.60%

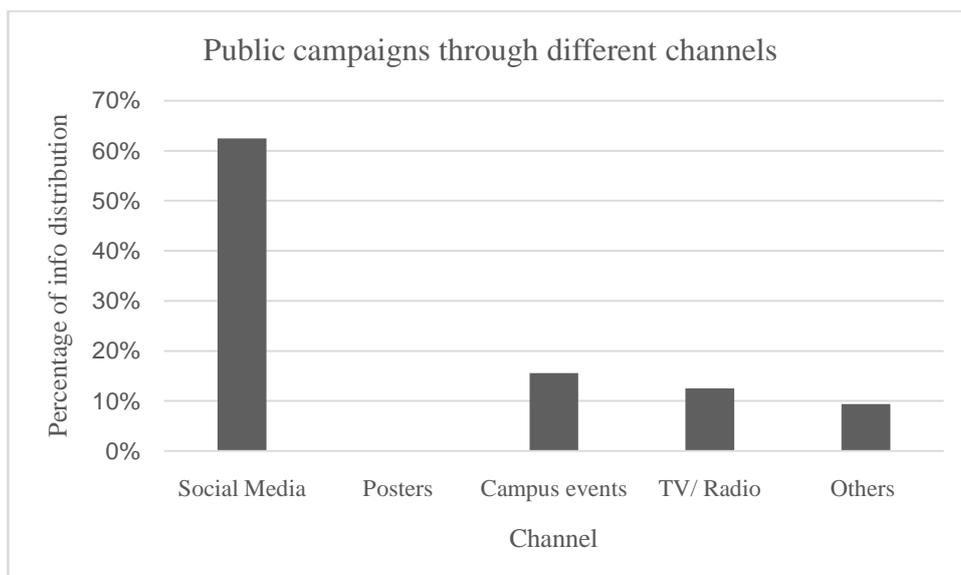
Table 2b: Education level of participants

Education	
Bachelor	84.40%
High school	15.60%

Source: author's analysis, 2025

Responses from the questionnaire reveal that public campaigns watched by students were mostly about civic participation. In second place are education and health with an equal percentage of 21.9%.

As explained in Figure 1, most students have watched the latest public campaigns through social media.

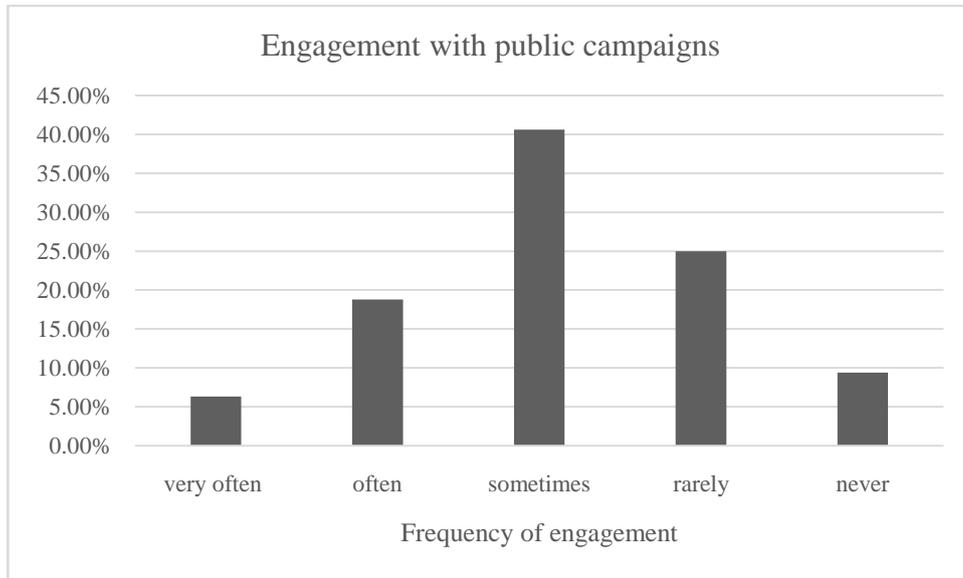


Source: author's analysis, 2025

Figure 1: Channels where students encounter public campaigns

In addition, students consider public campaigns as an important part of their lives. What they seem to be a little more confused and insecure about is the clarity of the message of these campaigns and the level of trust in public institutions. About 60% of participants declare to be neutral regarding these issues.

According to the responses presented in Figure 2, their engagement with public campaigns seems to be good enough and promising for the future. If better-organised campaigns are to be presented to them, their engagement may as well increase.



Source: author's analysis, 2025

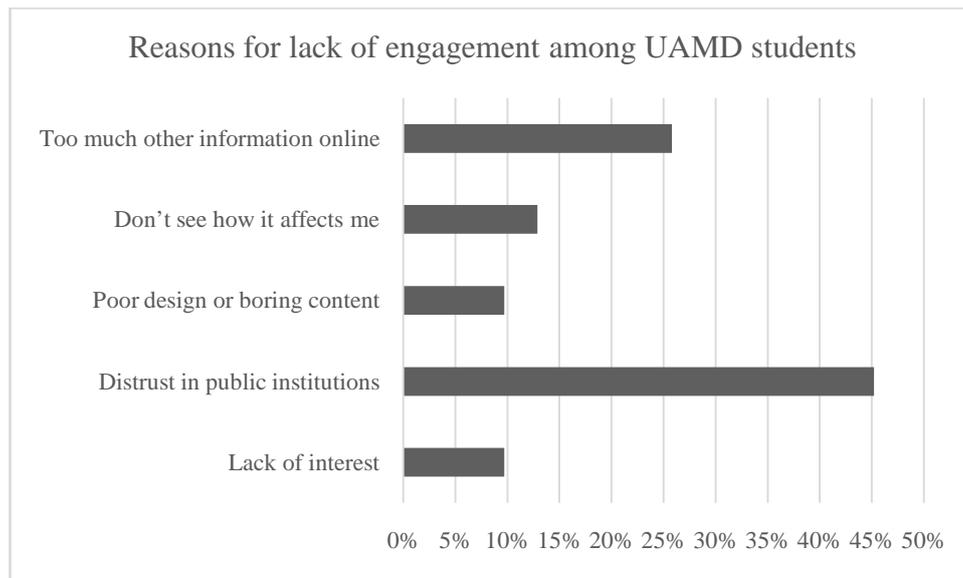
Figure 2: Students' engagement with public campaigns

There is a higher tendency among students to believe more in campaigns that are shared by peers or influencers. About 40 % of participants agree and strongly agree with that.

After watching a public campaign, 6.3 % of participants always try to apply its message in their daily life (e.g., recycling, safe driving, voting, etc.)

While 34.4 % do this very often, 46.9% show a medium engagement initiative, 9.4% do it rarely, and 3.1% declare to never take engagement. However, a considerable proportion of participants, exactly 34.4% are interested or very interested in helping design or promote public campaigns for students.

In reference to the main reasons that usually stop students from engaging with such campaigns, the following Figure 3 has been generated.



Source: author's analysis, 2025

Figure 3: Reasons that influence students not to engage with public campaigns

Questionnaire results contribute to the analysis in terms of awareness and exposure, revealing how well public campaigns reach student audiences. They also show the lack of trust in public institutions or messages that come from public campaigns. Students' engagement and action show behavioural or attitudinal influence from these campaigns. Additionally, students' qualitative insights offer creative input for improving youth-targeted public communication.

4.2 Main Findings from the Quantitative Analysis Show That

Students are aware of public campaigns, but they selectively engage, mostly through social media.

Campaigns perceived as authentic and relatable, not overly formal are more effective.

Visual storytelling and peer involvement increase engagement.

There's room for co-creation between students and public institutions.

V. DISCUSSION

Evidence from previous studies and from primary data from the questionnaire suggests that awareness campaigns are most successful when they incorporate the following:

Relevance and Personalisation: Tailoring messages to the lived experiences of students improves cognitive engagement.

Credible Sources: Peers, student leaders, and academic experts are perceived as more trustworthy than corporate or governmental sources.

Interactive and Multimedia Formats: Videos, infographics, live events, and social media challenges increase message retention and appeal.

Opportunities for Participation: Allowing students to co-create content or lead initiatives fosters ownership and behavioural commitment.

In Table 3 are presented some main factors that have an influence on students, according to studies and primary research as well.

Table 3: Summary of factors influencing campaign effectiveness

Factor	Description
Message Relevance	Tailored messages resonate more with students
Credible Source	Peer-led or expert messaging improves persuasion
Multimedia Use	Videos/interactive tools increase engagement
Repetition	Repeated exposure reinforces attitudes
Participation	Student involvement boosts ownership

5.1 Ongoing Challenges

Despite their potential, public awareness campaigns face several obstacles:

- Information overload weakens attention and engagement.
- Message fatigue occurs when campaigns lack novelty or appear redundant.
- Credibility concerns, particularly for campaigns tied to government or corporate sponsors.
- Behaviour-attitude gaps persist, meaning students may express positive attitudes without adopting new behaviours.
- Digital scepticism, where students question the authenticity and motives of widely circulated online messages.

VI. CONCLUSION

Public awareness campaigns can significantly influence university students' attitudes and behaviours when addressing issues perceived as immediate or personally meaningful and designed with intentionality, relevance, and student engagement in mind.

Campaign components such as message framing, source credibility, and delivery channels interact with students' beliefs, social influences, and perceived control, as explained by the Theory of Planned Behaviour and Social Cognitive Theory and as revealed by current students of Aleksander Moisiu University in the city of Durres.

The most effective campaigns utilise credible sources, resonant message framing, and multi-channel communication strategies. Digital platforms that align with student media habits would contribute to better engagement. To maximise impact, future campaigns must

embrace co-creation, digital interactivity, and continuous evaluation. Doing so will help educators, policymakers, and campus organisations foster meaningful behavioural change among students.

REFERENCES

1. A. Buzzetto-Hollywood, N., Banks, T., & J. Hill, A. (2024). Informing Academia Through Understanding of the Technology Use, Information Gathering Behaviors, and Social Concerns of Gen Z. *Informing Science: The International Journal of an Emerging Transdiscipline*, 27, 012. <https://doi.org/10.28945/5388>
2. Agarwal, A. (2024). The Effect of Social Media in Identity Formation in Adolescence. *World Journal of Advanced Research and Reviews*, 23(3), 775–779. <https://doi.org/10.30574/wjarr.2024.23.3.2685>
3. Ajzen, I. (1991). *The Theory of Planned Behavior*. ResearchGate. https://www.researchgate.net/publication/272790646_The_Theory_of_Planned_Behavior
4. Alexandra-Niculina Gherguț-Babii, Poleac, G., & Daniel-Rareș Obadă. (2025). Challenges for NGO Communication Practitioners in the Disinformation Era: A Qualitative Study Exploring Generation Z's Perception of Civic Engagement and Their Vulnerability to Online Fake News. *Journalism and Media*, 6(3), 136–136. <https://doi.org/10.3390/journalmedi6030136>
5. Avci, H., Baams, L., & Kretschmer, T. (2024). A Systematic Review of Social Media Use and Adolescent Identity Development. *Adolescent Research Review*, 10(2), 219–236. <https://doi.org/10.1007/s40894-024-00251-1>
6. Bandura, A. (1986). *Social Foundations of Thought and Action*. Prentice Hall.

7. Blandi, L., Sabbatucci, M., Dallagiacom, G., Alberti, F., Bertuccio, P., & Odone, A. (2022). Digital Information Approach through Social Media among Gen Z and Millennials: the Global Scenario during the COVID-19 Pandemic. *Vaccines*, *10*(11), 1822. <https://doi.org/10.3390/vaccines10111822>
8. Carolina Falcón Linares, González-Yubero, S., Mauri-Medrano, M., & Mari´a Jesús Cardoso. (2023a). Impact of Social Media on Adolescence: Mapping Emerging Needs to Build Resilient Skills. *Societies*, *13*(11), 238–238. <https://doi.org/10.3390/soc13110238>
9. Carolina Falcón Linares, González-Yubero, S., Mauri-Medrano, M., & Mari´a Jesús Cardoso. (2023b). Impact of Social Media on Adolescence: Mapping Emerging Needs to Build Resilient Skills. *Societies*, *13*(11), 238–238. <https://doi.org/10.3390/soc13110238>
10. Hassoun, A., Beacock, I., Consolvo, S., Goldberg, B., Kelley, P. G., & Russell, D. (2023). Practicing Information Sensibility: How Gen Z Engages with Online Information. *Cornell University*. <https://doi.org/10.48550/arxiv.2301.07184>
11. Jiao, W., Chang, A., Ho, M., Lu, Q., Liu, M. T., & Schulz, P. J. (2023). Predicting and Empowering Health for Generation Z by Comparing Health Information Seeking and Digital Health Literacy: Cross-Sectional Questionnaire Study. *Journal of Medical Internet Research*, *25*(1), e47595. <https://doi.org/10.2196/47595>
12. Knott, K. (2022, August 11). *Survey highlights Gen Z's distrust in higher ed*. [www.insidehighered.com](https://www.insidehighered.com/news/2022/08/12/survey-highlights-gen-zs-distrust-higher-ed). <https://www.insidehighered.com/news/2022/08/12/survey-highlights-gen-zs-distrust-higher-ed>
13. Pérez-Escoda, A., Pedrero-Esteban, L. M., Rubio-Romero, J., & Jiménez-Narros, C. (2021). Fake News Reaching Young People on Social Networks: Distrust Challenging Media Literacy. *Publications*, *9*(2), 24. <https://doi.org/10.3390/publications9020024>
14. Petty, R. E., Cacioppo, J. T., & Abraham, C. (1986). *The Elaboration Likelihood Model of Persuasion*.
15. Schwarze, V., Börsting, J., & Eimler, S. C. (2025). Facing a Fast-Paced, Digital World: Gen Z's Perception of Social (Media) Groups. *Journal of Adult Development*. <https://doi.org/10.1007/s10804-025-09536-8>
16. Vlachokyriakos, V., Johnson, I. G., Anderson, R., Claisse, C., Zhang, V., & Briggs, P. (2024). Design Implications for a Social and Collaborative Understanding of online Information Assessment Practices, Challenges and Heuristics. *ArXiv (Cornell University)*. https://doi.org/10.48340/ecscw2024_n04
17. West, M., Rice, S., & Vella-Brodrick, D. (2024a). Adolescent Social Media Use through a Self-Determination Theory Lens: A Systematic Scoping Review. *International Journal of Environmental Research and Public Health*, *21*(7), 862–862. <https://doi.org/10.3390/ijerph21070862>
18. West, M., Rice, S., & Vella-Brodrick, D. (2024b). Adolescent Social Media Use through a Self-Determination Theory Lens: A Systematic Scoping Review. *International Journal of Environmental Research and Public Health*, *21*(7), 862–862. <https://doi.org/10.3390/ijerph21070862>
19. Yu, T.-K., Lee, N.-H., & Chao, C.-M. (2020). The Moderating Effects of Young Adults' Personality Traits on Social Media Immersion. *Frontiers in Psychology*, *11*. <https://doi.org/10.3389/fpsyg.2020.554106>

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Comparative Analysis of Income Tax Planning under the New and Old Tax Regimes in India for Financial Year 2025–26: An Empirical and Behavioural Perspective

Dr. Neha Gupta

ABSTRACT

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Keywords: income tax planning, new tax regime, old tax regime, taxpayer behavior, financial literacy.

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I. INTRODUCTION

Taxation is widely acknowledged as a fundamental mechanism for mobilizing resources and sustaining public expenditure in modern economies (Bora, 2024). In India, income tax serves as a primary source of revenue, financing critical functions such as infrastructure development, education, health services, and social welfare (Government of India, 2025). Effective tax planning enables individuals to

optimize their liabilities within legal frameworks, thereby fostering financial stability and encouraging long-term savings (Kaushik & Mahato, 2021).

The Indian income tax system is governed by the Income Tax Act, 1961, which provides for a progressive structure of tax rates and deductions. Historically, the Old Tax Regime allowed taxpayers to reduce taxable income through a variety of exemptions and deductions, including contributions to provident funds, life insurance premiums, home loan interest, and health insurance under Sections 80C, 80D, and 24(b). While this system incentivized disciplined savings, it often required complex documentation and planning.

To simplify compliance and widen the tax base, the Government of India introduced an optional New Tax Regime via the Union Budget 2020, later enhanced by amendments in the Budget 2025–26 (Government of India, 2025). The New Regime offers reduced tax rates across multiple slabs, along with a standard deduction of ₹75,000 for salaried individuals, but eliminates most exemptions and deductions. Consequently, taxpayers must weigh the trade-off between simplicity and potential tax savings.

Recent research highlights that regime selection is not solely a matter of arithmetic but is influenced by behavioural factors such as financial literacy, risk perception, and preference for liquidity versus long-term investment (Deshpande & Rakshe, 2025). High-income taxpayers with substantial eligible deductions often favour the Old Regime, whereas middle-income earners and self-employed individuals are more inclined

towards the New Regime due to its transparency and lower compliance burden (Bora, 2024; Deshpande & Rakshe, 2025).

This study seeks to provide a comprehensive understanding of tax planning under India's dual-regime framework for Financial Year 2025–26. By integrating a comparative analysis of tax liabilities across income brackets with behavioural insights from prior literature, the paper aims to guide policymakers, practitioners, and taxpayers in making informed decisions that align with both fiscal objectives and individual financial goals.

The remainder of this paper is organized as follows. Section 2 presents a comprehensive review of the literature on income tax regimes and taxpayer behavior. Section 3 describes the data sources and methodological framework employed in the study. Section 4 offers a detailed analysis, integrating tax liability computations with qualitative insights into taxpayers' decision-making processes. Section 5 concludes with key findings and discusses implications for policymakers, practitioners, and taxpayers.

II. REVIEW OF LITERATURE

A growing body of literature has examined the implications of India's dual income tax framework and its impact on taxpayer behavior. Deshpande and Rakshe (2025) employed a case study approach to investigate how individuals choose between the Old and New Tax Regimes. Their findings suggest that high-income earners with substantial deductions—such as contributions under Section 80C, housing loan interest, and health insurance—prefer the Old Regime, while middle-income earners and self-employed taxpayers gravitate towards the New Regime due to its simplicity and favorable rates.

Prasad Patil & Sanket Gharat (2025) Explored awareness and taxpayer preference between the regimes using a primary survey of over 100 respondents. found that taxpayer choices depend on income level, investment habits, and the ease of compliance, rather than slab rates alone. Recommended better decision-support tools and

educational campaigns to address gaps in financial literacy and enhance compliance.

(Rao et al., 2025) Found that the old regime is advantageous for taxpayers with substantial deductions under 80C, 80D, HRA, while middle-income earners or those with few deductions benefit more from the new regime because of lower tax rates with fewer deductions. This behaviour not only lowers tax liability but also indirectly contributes to national savings and capital formation. Conversely, the New Regime's simplified structure, with reduced emphasis on tax-linked investments, was found to encourage liquidity and discretionary spending rather than compulsory savings.

Bora (2024) compared the two regimes from the perspective of salaried individuals and highlighted that the Old Regime promotes long-term investment habits through deductions, whereas the New Regime enhances liquidity by offering lower tax rates without requiring savings-based compliance. Ranka (n.d.) further argued that taxpayers' reluctance to transition to the New Regime often stems from familiarity with traditional deductions, indicating a behavioural bias in tax decision-making.

Singh and Kaur (2023) have argued that the behavioural shift introduced by the New Regime could alter household saving patterns in the long run. While simplification reduces compliance costs, the absence of incentives may discourage individuals from investing in secure financial products, particularly among middle-income groups.

G., Balaji et. al. (2023) analysed the impact of changes made to the new tax regime under the Union Budget 2023. Emphasized that the new regime is now the "default" option for taxpayers, yet the old regime remains unaltered. The paper weighs which regime is more advantageous for taxpayers' post-reforms and is based on secondary data from various credible sources.

Kaushik and Mahato (2021) explored efficient tax-saving management strategies, emphasizing that optimal planning under the Old Regime depends on timely investments in eligible

instruments. Their analysis demonstrated that taxpayers who systematically utilize deductions achieve higher effective savings compared to those who adopt an ad hoc approach.

Policy-oriented literature, including reports by the Government of India (2025), underscores the rationale for introducing the New Regime: simplifying compliance, reducing administrative burdens, and encouraging voluntary participation. However, these studies also caution that the absence of deductions in the New Regime may discourage long-term savings, potentially affecting capital formation in the economy.

Overall, the existing research highlights a trade-off between simplicity and incentives in India's income tax design. While the New Regime aligns with global trends favoring streamlined tax systems, the Old Regime continues to be relevant for individuals seeking to combine tax efficiency with structured savings. The present study builds on this discourse by combining updated tax computations for Financial Year 2025–26 with behavioral insights, offering a holistic perspective on income tax planning.

III. DATA AND METHODOLOGY

This study adopts a mixed-method research design to provide an integrated understanding of income tax planning under the Old and New Tax Regimes in India for the Financial Year 2025–26. The principal aim is to investigate how taxpayers evaluate their liabilities under the two systems and how behavioral considerations shape their choices. Specifically, the research seeks to: (i) analyze the tax liabilities of salaried, self-employed, and business taxpayers across different income levels; (ii) explore behavioral drivers, such as awareness, saving preferences, and risk attitudes, that influence regime selection; and (iii) synthesize empirical and qualitative evidence to formulate practical guidance for taxpayers and policymakers.

The data set for this analysis was compiled from both documentary and secondary sources. Tax slabs, rebates, and deductions applicable to Financial Year 2025–26 were drawn from the

Union Budget and the Income Tax Act, 1961 (Government of India, 2025). To capture behavioral dimensions, the study utilized findings from published literature, including Deshpande and Rakshe (2025), Bora (2024) and Kaushik and Mahato (2021), which provide insights into investor awareness, regime preferences, and planning strategies. These references were complemented by structured tax computations prepared by the authors, reflecting the most recent statutory provisions on exemptions and standard deductions.

Methodologically, the research combines quantitative and qualitative approaches. Quantitative analysis involves the computation of tax liability for seven representative income categories ranging from ₹5 lakh to ₹25 lakh. Under the Old Regime, calculations incorporate deductions typically available to taxpayers, such as investments under Section 80C, house rent allowance (HRA), home loan interest, and health insurance premiums under Section 80D. The New Regime calculations consider applicable rebates and the enhanced standard deduction of ₹75,000 for salaried individuals. Qualitative analysis draws on behavioral studies to interpret how financial literacy, investment culture, and compliance attitudes affect regime choice. The integration of these strands allows for a nuanced understanding of tax planning decisions.

Table 1: presents an overview of the data inputs and methodological focus employed in this study.

Component	Description	Source
Income tax slabs, rebates, and deductions	Official provisions under Union Budget 2025–26 and Income Tax Act, 1961	Government of India (2025)
Comparative tax computations	Structured calculations for incomes between ₹5 lakh and ₹25 lakh under Old and New Regimes	Authors' analysis
Behavioral insights	Evidence on awareness, preferences, and planning from prior research	Deshpande & Rakshe (2025); Bora (2024); Kaushik & Mahato (2021)
Analytical approach	Mixed-method design combining liability estimation with interpretation of behavioral evidence	Present study

By embedding tax computations within a behavioral framework, this methodology captures both the fiscal and psychological determinants of taxpayers' decisions. Such an approach is consistent with emerging research in fiscal policy, which argues that policy outcomes are enhanced when quantitative modelling is integrated with evidence on taxpayer attitudes and incentives (Deshpande & Rakshe, 2025).

IV. ANALYSIS

This section presents an integrated assessment of the Old and New Tax Regimes for Financial Year 2025–26, combining tax computations with insights from the literature on taxpayer behavior. The objective is to determine the relative advantages of each regime across income

categories and to interpret how individual preferences, awareness, and saving habits influence regime selection.

The quantitative component involved calculating tax liabilities for seven representative income levels: ₹5 lakh, ₹7 lakh, ₹10 lakh, ₹12 lakh, ₹15 lakh, ₹20 lakh, and ₹25 lakh. Under the Old Tax Regime, deductions were incorporated for investments and allowances such as Section 80C contributions, house rent allowance, housing loan interest, and health insurance premiums. For the New Regime, the calculations reflected the enhanced standard deduction of ₹75,000 for salaried individuals and the applicable rebates announced in the Union Budget 2025–26. These numerical results were interpreted in the light of behavioral findings reported by Deshpande and Rakshe (2025), Bora (2024), and related studies.

Table 2: presents the comparative tax liability across the selected income brackets, including gross tax under both regimes, the maximum deductions assumed for the Old Regime, and the resulting net tax payable

Income (₹)	Tax under New Regime	Gross Tax under Old Regime	Maximum Deductions (Old)	Net Tax after Deductions (Old)	Preferred Regime
5,00,000	0	12,500	1,50,000	0	New (zero-tax threshold)
7,00,000	0	25,000	1,50,000	0	Either (New simpler)
10,00,000	0	78,000	2,50,000	28,000	New (lower burden)

12,00,000	0	1,17,000	3,00,000	42,000	New (tax-free)
15,00,000	45,000	1,87,500	4,00,000	87,500	Depends on deductions
20,00,000	1,20,000	3,37,500	5,00,000	1,87,500	Old (high deductions)
25,00,000	2,25,000	4,87,500	6,00,000	2,87,500	Old (max deductions)

(Source: Author's representation)

The analysis indicates a clear segmentation of taxpayers based on income and capacity to claim deductions. For incomes up to ₹12 lakh, the New Regime provides a complete tax exemption, making it the optimal choice for low- and middle-income groups, particularly for those who do not actively invest in tax-saving instruments. For incomes between ₹12 lakh and ₹20 lakh, the selection depends on whether the taxpayer maximizes deductions. Taxpayers with substantial contributions to provident funds, insurance, or housing loan repayments often achieve greater savings under the Old Regime, while others benefit from the lower rates and administrative simplicity of the New Regime. At income levels above ₹20 lakh, the Old Regime remains advantageous if the individual can fully utilize the available exemptions and deductions.

While quantitative calculations offer an objective comparison of tax liabilities, understanding why taxpayers choose between the Old and New Tax Regimes requires an examination of behavioral and contextual factors. The qualitative dimension of this study draws upon evidence from prior research (Deshpande & Rakshe, 2025; Bora, 2024) and interprets the patterns revealed in tax liability computations through the lens of financial literacy, savings orientation, and compliance preferences.

A prominent theme in the literature is the role of financial literacy in shaping regime selection. Taxpayers with higher awareness of rebate provisions, deduction limits, and the long-term implications of tax planning demonstrate a greater ability to align their choices with financial goals. Deshpande and Rakshe (2025) observed that financially literate individuals were more likely to evaluate the total cost–benefit trade-off between regimes, considering not only immediate

tax savings but also the incentive structures embedded in deductions such as Section 80C, health insurance premiums, and housing loan interest. By contrast, individuals with limited tax knowledge often adopted a default position—either remaining in the Old Regime out of habit or switching to the New Regime based solely on lower nominal rates—without fully exploring the implications for net savings.

Another significant determinant is investment behavior and savings culture. The Old Regime historically encouraged disciplined savings through instruments like PPF, ELSS, National Pension Scheme, and insurance policies. For taxpayers who prioritize long-term wealth accumulation and retirement planning, these deductions remain attractive despite the higher headline rates. Bora (2024) highlighted that such taxpayers view deductions not merely as tax-reducing tools but as mechanisms that foster structured financial security. Conversely, the New Regime appeals to individuals who value liquidity and flexibility in their cash flows, particularly younger earners or those engaged in entrepreneurial activities who prefer to deploy surplus funds in business expansion or market-linked investments rather than in tax-sheltered schemes.

Compliance burden and administrative simplicity further influence choices. Business owners and self-employed professionals frequently cite the reduced record-keeping and documentation under the New Regime as a compelling reason for adoption (Deshpande & Rakshe, 2025). Salaried employees, on the other hand, often have ready access to employer-facilitated investment declarations and payroll deductions, making the Old Regime more manageable for those with structured benefit packages. However, the

literature also suggests that procrastination in submitting investment proofs or deciding on a regime leads to hurried and sometimes inefficient selections close to the filing deadline.

Behavioral economics concepts such as status quo bias and loss aversion provide additional insight into taxpayers' hesitancy to transition to the New Regime. Ranka (n.d.) notes that individuals accustomed to availing deductions perceive a shift to a regime without exemptions as a potential loss, even if the net liability may be lower. This psychological attachment to deductions underscores the importance of clear communication from policymakers and tax advisors regarding the real monetary benefits of each option.

Finally, qualitative evidence points to differentiation by income group and occupational category. Salaried professionals in the ₹7–15 lakh range often opt for the New Regime due to the enhanced standard deduction and rebate provisions, especially when their portfolios of deductible investments are modest. In contrast, high-income earners and those with significant commitments such as home loans or insurance portfolios maintain a preference for the Old Regime, which rewards comprehensive tax planning. Among entrepreneurs and professionals, the New Regime is seen as aligned with modern business practices, allowing them to focus on operational efficiency rather than extensive compliance formalities.

Taken together, these insights suggest that regime selection is a multidimensional decision that intertwines statutory incentives with personal finance strategies and cognitive tendencies. Encouraging informed decision-making therefore requires not only transparent tax structures but also targeted educational initiatives that enhance taxpayers' understanding of how their income profile, savings objectives, and administrative preferences interact with the available tax regimes.

V. CONCLUSION AND IMPLICATIONS

The qualitative exploration of taxpayer behavior, when combined with evidence from comparative

tax computations, underscores that the choice between India's Old and New Tax Regimes in Financial Year 2025–26 is not purely an arithmetical exercise but a complex decision shaped by literacy, habits, and attitudes toward risk and savings. Taxpayers with disciplined investment practices and significant deductible expenditures derive tangible benefits from the Old Regime, which rewards long-term financial commitments through targeted exemptions. Conversely, individuals seeking simplicity, flexibility, and reduced documentation costs—particularly young earners, entrepreneurs, and professionals with modest deductible investments—find the New Regime more compatible with their economic priorities.

From a policy standpoint, these findings highlight several implications. First, improving financial literacy is essential to enable taxpayers to weigh the true costs and benefits of each regime. Awareness programs should emphasize not only current liability calculations but also the broader financial outcomes of deductions and exemptions. Second, there is a need to design communication strategies that reduce the cognitive biases associated with regime choice, such as status quo bias and loss aversion. Simplified tools, illustrative case studies, and digital calculators could empower taxpayers to make timely, evidence-based decisions. Third, policymakers should periodically review deduction structures and standard deduction thresholds to ensure that both regimes remain aligned with broader economic goals—encouraging savings and investment while fostering voluntary compliance.

For practitioners and tax advisors, the study underscores the importance of tailoring guidance to individual profiles. Effective advisory support should integrate quantitative calculations with an assessment of behavioral preferences, occupational circumstances, and liquidity requirements. By adopting a client-centered approach, advisors can help taxpayers optimize their post-tax income while sustaining prudent savings habits.

Overall, the evidence affirms that a balanced tax system requires not only clear and equitable

statutory provisions but also an appreciation of the behavioral realities faced by taxpayers. Aligning fiscal design with the diverse needs and cognitive tendencies of the population will strengthen compliance, promote informed decision-making, and support the twin objectives of revenue generation and financial well-being.

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REFERENCES

1. Balaji, G., et al. (2023). Impact of changes in the new tax regime under Union Budget 2023: A comparative analysis. *Journal of Tax Research and Policy*, 12(3), 45-62.
2. Bora, S. (2024). Comparative analysis of old and new income tax regimes for salaried individuals in India. *Indian Journal of Taxation and Finance*, 18(2), 112-128.
3. Deshpande, A., & Rakshe, P. (2025). Taxpayer preferences between old and new tax regimes: A case study approach. *Journal of Financial Planning and Compliance*, 21(1), 34-51.
4. Government of India. (2025). *Union Budget 2025-26: Economic Survey and Tax Proposals*. Ministry of Finance, Department of Revenue.
5. Income Tax Act, 1961. Government of India.
6. Kaushik, R., & Mahato, S. (2021). Tax-saving management strategies under the Income Tax Act: An analysis of efficient planning approaches. *Asian Journal of Accounting and Finance*, 15(4), 289-305.
7. Prasad Patil, V., & Sanket Gharat, M. (2025). Awareness and preference analysis of taxpayers towards old and new tax regimes in India. *International Journal of Tax and Financial Studies*, 9(1), 78-94.
8. Ranka, S. (n.d.). Behavioral dimensions of tax regime selection in India: Understanding taxpayer reluctance and decision-making biases. *Working Paper Series on Fiscal Policy*.
9. Rao, K., Sharma, V., & Gupta, M. (2025). Deduction-based tax planning versus simplified taxation: An empirical assessment of regime selection patterns. *Indian Tax Review*, 23(2), 156-173.
10. Singh, A., & Kaur, J. (2023). Impact of new tax regime on household saving patterns in India: A behavioral economics perspective.

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Dr. Summaya Sikander

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Keywords: financial inclusion; traditional financial inclusion (tfi); digital financial inclusion (dfi); socio-economic development; threshold regression.

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ABSTRACT

This paper examines the corresponding roles of Traditional Financial Inclusion (TFI) and Digital Financial Inclusion (DFI) in driving socio-economic development across 97 developed and developing countries in 2014, 2017, and 2021. Most of the previous studies seem to deal only with the linear and non-linear relationships between financial inclusion and economic growth. In contrast, this study takes a multilayered approach by incorporating a Socio-Economic Development Index (SEDI). It analyzes the components of financial inclusivity, such as income, employment, and political stability, and how these factors contribute to social progress. The study ascertains how various dimensions of financial inclusion influence economic development by creating unique indices for TFII, DFII, and a combined Financial Inclusion Index (FII). Moreover, the paper utilizes a threshold estimation model to identify the key points where financial inclusion yields optimal socio-economic benefits. The results demonstrate that, thereby increasing savings and credit access as an agent of economic participation, the TFI is pivotal in countries with weaker financial systems. Meanwhile, DFI emerges as a powerful growth engine in economies with a strong digital infrastructure supporting mobile banking, fintech, and digital payment platforms for universal financial inclusion. Thus, the study advocates for an inclusive, multi-stakeholder approach to achieve sustainable financial inclusion. It underscores the requirement for investment in digital infrastructure to deepen financial inclusion and increasing focus on a progressive regulation that balances innovation

with risk mitigation. This research offers crucial insights into how financial inclusion, in its traditional and digital forms, can serve as a prominent tool for equitable socio-economic development.

Keywords: financial inclusion; traditional financial inclusion (tfi); digital financial inclusion (dfi); socio-economic development; threshold regression.

I. INTRODUCTION

Financial inclusion, which generally means having access to and using formal financial services, has become an area of research interest among researchers/policy makers/other stakeholders. It is also crucial to achieving economic targets and ensuring that individuals and businesses can access and effectively use formal financial services (Sarma, 2012). It fosters broader opportunities for participation, especially for those at risk of exclusion, and drives growth and development. Thus, formal financial services have recently become a key factor for economic development, which can be further understood through two complementary forms: Traditional Financial Inclusion (TFI) and Digital Financial Inclusion (DFI).

Formal financial services have financed the economy well in the form of savings accounts, credit, and insurance provided through banks and credit unions. According to Sarma and Pais, 2011, the direct provision of formal financial services for the masses is necessary to improve economic participation, especially among low-income people. Financial services like saving accounts and loans can increase the living standards of a family

and even prepare people better for any health shock. However, when there is overdependence on brick-and-mortar banking infrastructure, this excludes the vast majority, especially in rural or poor populations, from using the same services. One-third of adults do not have a bank account and are excluded from the formal financial sector (World Bank, 2018; Karim et al., 2022).

However, with technological progress, DFI has quickly emerged as a transformative intervention to overcome the inherent difficulties of traditional finance systems with advances in digital technologies. Fueled by mobile banking, payments platforms, and FinTech solutions, DFI has recently become very powerful, particularly in regions with poor access to traditional banking services (Gabor and Brooks, 2020). It offers financial services to unserved/underserved individuals and businesses, mainly in remote areas, through digital channels like mobile banking, financial technology solutions, and e-wallets. As a result of this transformation, financial inclusion through affordable and convenient financial services has expanded toward millions previously excluded from the financial access gap (Arner et al., 2022; Tay et al., 2022). It also can accelerate financial inclusion further and catalyze socio-economic development.

Socio-economic development is about improving people's living conditions, encompassing the dimensions that economic growth alone cannot provide, such as access (education and health care), poverty eradication, and participation in decision-making. Indicators like improved quality of life, reduced income inequality, and increased health intervention have sustainable advantages for the prosperity or stability of the nation. The COVID-19 pandemic has worsened existing inequalities and caused significant economic and social progress setbacks, especially among less developed countries, reversing years of gains in poverty reduction, education, health, and overall socio-economic development (World Bank, 2020). The research examining the impacts of financial inclusion on economic growth currently examines TFI and DFI in isolation, missing out on the complementary and combined impact of both systems on socio-economic development.

Additionally, much of the existing literature is country or region-specific, making it difficult to generalize results globally. However, challenges such as low digital literacy, inadequate infrastructure, and restrictive regulations prevent these services from reaching their full potential.

Empirical research on the impact of DFI on economic growth essentially treats the relationship as linear (Ahmad et al., 2021; Khera et al., 2021; Ozturk and Ullah, 2022). In this direction, Law and Singh (2014) propose that financial development can foster growth, but only up to a certain threshold, beyond which the marginal benefits may diminish or even turn negative. Similarly, (Khera et al., 2021) argue that financial development promotes growth initially, but then there comes a point where too much financial development can drag the economy down. Furthermore, studies such as those by (Nizam et al., 2020; Rapih and Wahyono, 2023) have explored the relationship between financial inclusion and economic growth, but often with limited scope, as this particular study analyzed only two specific years (2014 and 2017), leaving gaps in broader applicability. Thus, much of the existing research has concentrated narrowly on how financial inclusion contributes to economic growth, often overlooking its broader societal impacts. The findings from these studies reveal a more potential relationship between financial inclusion and economic growth than previous studies have accounted for, even if that relationship has diminishing returns.

Our study widens this by adding a Socio-economic Development Index (SEDI) that encompasses an aggregate representation of equitable development beyond merely economic indicators. The present study attempts to explore how such mechanisms could improve well-being and reduce inequality for inclusive development through analysis of TFI and DFI. We also attempt to find the threshold or turning points beyond which substantial improvements in socio-economic development are achieved for both TFI and DFI. In this respect, we developed three composite indices, namely the overall index of financial inclusion (FII), the Traditional Financial Inclusion Index (TFII), and the Digital Financial

Inclusion Index (DFII). These composite indexes represent a quantification of financial inclusion concerning 12 measures of financial service usage and access. The first one, in other words, stands for traditional financial inclusions through, say, banks, while DFII shows the same through digital channels, particularly with the emergence of FinTech. When taken as a whole, they paint an even more complete picture of how financial inclusion—both traditional and digital—contributes to general socioeconomic growth.

II. LITERATURE REVIEW

Financial inclusion contributes to social and economic development by providing access to people, communities, and businesses with different affordable financial solutions that enhance resilience and foster economic growth. Access also increases social and economic progress, which reduces inequality and poverty (Rastogi et al., 2018). However, low-income earners still use informal systems (Levine, 2005; Demirguc-Kunt et al., 2017). Financial inclusion aims to ensure that growth funds are available for welfare in rural areas. In this direction, Dhakal and Nepal (2016) illustrate how microfinance can bridge the gap in moving from inclusion to financial access. Improved access to financial markets by poor populations allows people to access inclusive and affordable financial services such as savings and credit. These services help boost social and economic development among the rural population.

TFI and DFI address many social and economic problems; their focus differs from one economy to another due to varying economic challenges. TFI depends on banks, branches, and ATM networks to provide direct, face-to-face cash services. Efficiently organized banks facilitate the possibility of saving by people with low incomes and help them create valuable assets to bridge the gulf between the rich and the poor (Manders et al., 2012). Beck et al. (2007) postulate that sound banking services reduce poverty and the gap in income in urban areas. TFI also bolsters financial stability: it makes the system less volatile in economic shocks due to the cushioning effect

(Levine, 2005; Han and Melecky, 2013; Jia et al., 2021).

However, TFI struggles to reach rural and remote areas because of high costs and logistical challenges (Cypher, 2014). Even though it plays a key role in providing financial access, its dependence on physical networks limits its ability to serve far-off populations (Allen et al., 2016). While TFI microfinance programs have helped rural communities, they fall short in tackling widespread financial exclusion (Dhakal and Nepal 2016).

On the other hand, DFI depends on high diffusion of mobile phones and a suite of internet platforms or digital wallets to leap over such geographic and infrastructural barriers to access in the delivery of finance, in particular to low-income communities that are characteristically under-banked. Mobile money services are technological advancements that have not only rearranged the existing structures but also mobilized resources to facilitate finance in a secure, safe, and convenient way of making transactions without using branches. Such innovations, according to Donovan (2012), have been able to affect proper impacts, especially in regions that are difficult for conventional facilities to penetrate. Ultimately, it reduces the transaction cost while increasing the availability of credit and savings opportunities, hence financial inclusion for individuals and the economically active poor, as Loukoianova et al. (2018) and Ozturk and Ullah (2022) attest to. Such an approach widens prospects for economic growth while educating people on how to create good financial habits of saving and reinvesting resources to achieve financial freedom, especially over extensive financial inclusions (Kulkarni and Ghosh, 2021).

Recent innovations such as digital banking and machine learning advancements have made financial inclusion more attainable for marginalized groups (Lee, 2024). However, this progress is not without challenges. FinTech, as an enabling factor with access to the internet and automated data processing, is indeed a very strong tool in the quest to further expand the reach of DFI (Barik and Pradhan, 2021;

Agiropoulos et al., 2022). This new development now allows for flexible, secure, and efficient economic services beyond the reach of traditional banks (Gomber et al., 2017).

However, DFI effectiveness depends on strong digital infrastructure, user literacy, and regulatory backing (Yue et al., 2022). Furthermore, threshold models are critical for understanding the limitations and prospects of digital technologies for resource mobilization in underserved areas (Fong et al., 2017). For example, Ozili (2018) claims that low-income users' poor Internet connectivity and lack of financial awareness impact DFI accessibility (Ozturk and Acaravci, 2013).

A critical look at the literature on TFI and DFI indicates that both are highly relevant for socio-economic development, with different strengths and limits. For example, TFI tends to perform well in markets characterized by low financial inclusion, where a physical branch is fundamental in delivering basic financial services that boost economic participation (Rapih and Wahyono, 2023). In turn, DFI can be maximized in countries with superior digital infrastructure, allowing for greater scalability and operational efficiency. In addition, Rapih and Wahyono's threshold model suggests that TFI is most effective in impoverished areas, but DFI reaches its full potential when digital access enables broader financial inclusion. This, in turn, promotes overall economic stability by reducing cash dependency and transaction hazards (Xu and Wang, 2023).

TFI faces high costs and limited geographical access, especially in disadvantaged areas. DFI requires strong internet access with widespread digital literacy backed by tight consumer data security practices (Ozili, 2018). Unless digital finance risks are managed properly, it may eventually lead to the exposure of vulnerable populations to financial crises that they are neither prepared nor set to comprehend (Demirguc-Kunt et al., 2018).

Approaches that balance TFI and DFI are, therefore, one of the needed dimensions of holistic socio-economic development. In an

instance when there is no digital infrastructure at all, TFI is very relevant in the provision of the relevant financial services while promoting economic inclusiveness and stability, whereas DFI harnesses technology to make it cheaper and faster; access to financial services actually trickling down to low-income groups traditionally excluded from the same. To increase socio-economic impact, hybrid models can be created to scale up and reach a broader spectrum of economic contexts, such as those allowing TFI accessibility with DFI's scalability.

Thus, building on the backdrops of the existing literature, the study contributes to the literature in the following ways. First, we develop three broad indices: the TFII, the DFII, and an overall index of financial inclusion by combining TFII and DFII that covers 97 developed and developing countries for the years 2014, 2017, and 2021. Second, the distinct analysis of TFI and DFI provides a more profound understanding of how each type facilitates socio-economic development. The Socio-Economic Development Index (SEDI) builds on prior work by Ayasrah (2012), who developed SEDI as a comprehensive development measure, incorporating key social and economic indicators to reflect broader socio-economic progress. While aligning with this foundational approach, the current study adapts and extends SEDI by integrating specific indicators, namely, the Human Development Index (HDI), employment-to-population ratio, and log of GDP, alongside political stability and absence of violence, to capture a nuanced perspective of socio-economic advancement in the context of financial inclusion. This study uses a large cross-sectional sample and a threshold estimation model to explore how TFI and DFI, individually and when integrated, affect socio-economic development differently at varying levels of financial inclusion.

III. METHODOLOGY

3.1 Data description

This paper draws on cross-country estimations and macroeconomic data based on 97 countries classified as developed or developing economies

according to the United Nations classifications (United Nations, 2019). The detailed classification of the sampled countries and their TFII, DFII, FII, and SEDI levels is in the supplementary data file (Table 1). Our choice of countries and years is primarily based on data from the following key sources: the United Nations Development Programme (UNDP), Human Development Reports, the World Bank's Global Findex Database, and the International Monetary Fund's (IMF) Financial Access Survey.

3.2 Variable Definition and Data Source

Dependent variable: Socio-Economic Development Index (SEDI)

The Socio-Economic Development Index (SEDI) (mentioned in Table 1) is a composite measure developed using four key indicators: the Human Development Index (HDI), the employment-to-population ratio, log-GDP, and political stability and absence of violence/terrorism. This index was developed in line with the process mentioned by Swanson's (2007) framework for building comprehensive socio-economic indices. By aggregating these indicators, SEDI provides a better picture extending beyond traditional indicators such as HDI by accounting for economic inclusion and stability factors. In constructing the SEDI index, we employed Principal Component Analysis (PCA) for dimensionality reduction and weight assignment to each indicator, followed by normalization to ensure comparability and consistency across the data.

The HDI, developed by the United Nations Development Program (UNDP), offers a human-centered perspective on development by assessing life expectancy, education, and income levels fundamental to understanding socio-economic well-being (UNDP, 1990; Swanson, 2007). However, the employment-to-population ratio, an aggregate measure of labor market engagement and economic inclusion, was sourced from the World Development Indicators (WDI) database. This also aligns with Swanson (2007), who stated that workforce participation is one of the determining factors of social and economic stability, with low unemployment rates leading to lower poverty and overall social well-being (Razavi, 2012). GDP per capita (current US\$), taken as log GDP, was included to represent economic output while controlling for extreme values, as using the logarithmic form enables more balanced comparisons across countries of differing economic sizes, highlighting proportional shifts in economic strength (Fischer, 1993). However, Political stability and the absence of violence/terrorism, measured through perceptions of unrest and violence, are crucial for sustainable development, as a secure environment supports investment, economic growth, and institutional trust (Kaufmann et al., 2011). Including these diverse factors aligns with Nardo et al. (2005) guidance on composite indicators, enabling SEDI to provide a balanced assessment that incorporates traditional and often-overlooked aspects of development for meaningful cross-country comparisons.

Table 1: Indicators for construction of the Socio-Economic Development Index (SEDI)

Dependent Variable	Indicators	Data Sources
Socio-Economic Development Index (SEDI)	Human Development Index (HDI)	United Nations Development Programme (UNDP), Human Development Reports
	Employment to population ratio, 15+, total (%) (modeled ILO estimate)	World Development Indicators (WDI)
	GDP per capita (current US\$) (Taken as log GDP)	World Development Indicators (WDI)
	Political Stability and Absence of Violence/Terrorism: Estimate	World Bank

Source: Author's Compilation.

Independent variables: TFII, DFII and FII

The study developed three separate financial inclusion indices, the Traditional Financial Inclusion Index (TFII), the Digital Financial Inclusion Index (DFII), and the overall Financial Inclusion Index (FII), around 2014, 2017, and 2021. Each index reflects a particular perspective on financial access and usage along traditional and digital dimensions. TFII and DFII comprise 12 indicators grouped into two main sub-dimensions of access and usage to account for their balanced relevance in the total financial inclusion landscape.

The TFII measures indicate traditional financial access and usage by focusing on indicators such as the number of Automated Teller Machines (ATMs) and commercial bank branches per 100,000 adults and account ownership among adults (% age 15+). The access dimension focuses on the availability of traditional banking infrastructure, a key enabler of any economic participation. Similarly, the usage dimension includes indicators on savings (% 15+), borrowed adult (% 15+), and owning a debit or credit card (% 15+), showing the actual practice of use of these financial instruments. Data for TFII indicators was sourced from the IMF’s Financial Access Survey (FAS) and the World Bank’s Global Findex Database.

Similarly, the DFII covers digital financial access and usage indicators. The access dimension includes account ownership at a financial institution or through a mobile money service provider for adults aged 25 and above, fixed broadband subscriptions (per 100 people), and telephone subscriptions (per 100 people), reflecting the coverage of the underlying infrastructure required to facilitate financial transactions. The usage dimension reflects active digital engagement, such as Internet usage (% of the population), mobile-based utility payments (% 15+), and made or received digital payments by adults (% 15+), with data sourced from the World Bank’s Global Findex Database, as shown in (Table 2). By encompassing both access and usage, DFII provides insight into the transformative role of digital platforms in financial inclusion, particularly in regions where traditional banking access is limited.

Finally, by combining TFII and DFII, the FII offers a holistic view of overall financial inclusion by encompassing traditional and digital financial services. These indices give a holistic view of financial inclusion progress, enabling policymakers and researchers to estimate where overall gains have been made against areas that demand more effort.

Table 2: Indicators and Data sources for the construction of TFII and DFII

INDEPENDENT VARIABLES			
Traditional Financial Inclusion Index (TFII)		Digital Financial Inclusion Index (DFII)	
Access		Access	
Measures/ Indicators	Data Sources	Measures/Indicators	Data Sources
Automated teller machines (ATMs) (per 100,000 adults)	IMF Financial Access Survey (FAS)	Fixed broadband subscriptions (per 100 people)	World Bank
Commercial bank branches (per 100,000 adults)	IMF Financial Access Survey (FAS)	Fixed telephone subscriptions (per 100 people)	World Bank
Accounts % (15+)	IMF Financial Access Survey (FAS)	Account ownership at a financial institution or with a mobile-money-service provider, older adults (% of population ages 25+)	World Bank Global Findex Database
Usage	Sources	Usage	Sources

Saved adults % (15+)	World Bank Global Findex Database	Individuals using the Internet (% of the population)	World Bank Global Findex Database
Borrowed adult % (15+)	World Bank Global Findex Database	Made a utility payment: using a mobile phone (% age 15+)	World Bank Global Findex Database
Owns a debit or credit card adults % (15+)	World Bank Global Findex Database	Made or received digital payment adult % (15+)	World Bank Global Findex Database.

Moreover, we used a three-stage principal component analysis (PCA) approach to obtain financial inclusion indices for all countries and years, representing various aspects of access/quality at every stage.

$$PC\ Score = \sum_{i=1}^n LiXi \quad (1)$$

In this equation, the PC score is the total effect of standardized explanatory variables (X) each by multiplying its corresponding loading (L), where n denotes the total number of explanatory variables within each category.

In the first PCA stage, the two aspects of financial inclusion—access and usage—were assessed independently for traditional and digital financial services. The indicators for these sub-dimensions capture large-scale financial access and usage features in various countries. These sub-indices were then normalized by rescaling the scores to be between 0 and 1 for each country, in other words, using a min-max normalization method.

$$NormalizedScore = \frac{X - X_{min}}{X_{max} - X_{min}} \quad (2)$$

The access and usage sub-dimensions in the second stage were calculated separately to create the TFII and DFII, respectively. At this point, weights are assigned to each sub-dimension, and the scores are again normalized between 0 and 1 across all countries and years using Equation 2.

In the final stage, PCA is used to construct FII by combining TFII and DFII indices. At this stage, weightage is put on dimensions to represent a more comprehensive view of TFI and DFI. Furthermore, scores are normalized to 0 and 1, where 0 signifies complete financial exclusion, and 1 indicates full financial inclusion. Such a structured approach produces a comprehensive cross-country measure of financial inclusion over

time. The weights assigned to each indicator and dimensions of indices are attached in the supplementary data (Table 2-7).

Model specification

$$SEDI_{it} = \beta_0 + \beta_1 TFII_{it} + \beta_2 X_{it} + e_{it} \quad (1)$$

$$SEDI_{it} = \beta_0 + \beta_1 DFII_{it} + \beta_2 X_{it} + e_{it} \quad (2)$$

$$SEDI_{it} = \beta_0 + \beta_1 FII_{it} + \beta_2 X_{it} + e_{it} \quad (3)$$

$SEDI_{it}$ in models 1-3 represents the Socio-Economic Development Index for country i , in time t serving as a comprehensive measure of the country's socio-economic development level. These indices provide an overall indication of how advanced a country is in terms of both social and economic progress. The independent variables in this model include $TFII_{it}$, the traditional financial inclusion index, capturing the access and usage to conventional financial services in country i in time t , $DFII_{it}$, the digital financial inclusion index, represents the access to and use of digital financial platforms in countries i in time t , and FII_{it} is the financial inclusion index that combines TFII and DFII measures to reflect a complete picture of financial inclusivity.

Additionally, X_{it} serves as a control variable, accounting for other relevant socio-economic factors influencing $SEDI_{it}$ in country i in time t . At the same time, e_{it} denotes the error term, capturing unobserved factors impacting $SEDI_{it}$.

Hypothesis

To further investigate potential nonlinear relationships, a threshold effect hypothesis was formulated to test for shifts in the influence of financial inclusion indices on $SEDI_{it}$ across different inclusion levels.

$$H_0 = \delta_1 = \delta_2$$

$$H_1 = \delta_1 \neq \delta_2$$

In this model, δ represents vectors of the parameters.

In this analysis, the null hypothesis (H_0), proposes that the relationship between TFI, DFI, FII, and the SEDI is linear. This means it assumes that as financial inclusion increases, its impact on SEDI progresses proportionately, without abrupt changes or "threshold" points. However, if the alternative hypothesis (H_1) is true, there might be a threshold effect. In this case, the impact of financial inclusion on SEDI would not follow a straight, linear path but instead could shift once a certain level or "tipping point" of financial inclusion is reached. This suggests that there could be different states or "regimes" in the data, where the relationship changes depending on the level of financial inclusion.

3.3 Model Estimation

Employing a cross-sectional sample splitting and threshold estimation method developed by Hansen (1996, 2000), this study examines the relationships between TFII, DFII, FII, and the SEDI for years including 2014, 2017, and 2021. This is because TFII, DFII, and FII were used as threshold variables for analysis. Threshold regression models capture different patterns of variables' interaction, providing a more flexible approach to modelling non-linear relationships (Chong and Yan, 2014).

Consequently, models 4, 5, and 6 were developed to test the hypothesis mentioned earlier. These are particularly suitable for testing the proposed hypothesis and exploring the contingency effects of financial inclusion on socio-economic

development. The model, grounded in threshold regression, is structured as follows.

$$SEDI_{it} = \beta_0 + \beta_1 TFII_{it} + \beta_2 X_{it} + e_{it}; TFII \leq \gamma \quad (4)$$

$$SEDI_{it} = \beta_0 + \beta_1 TFII_{it} + \beta_2 X_{it} + e_{it}; TFII \geq \gamma$$

$$SEDI_{it} = \beta_0 + \beta_1 DFII_{it} + \beta_2 X_{it} + e_{it}; DFII \leq \gamma \quad (5)$$

$$SEDI_{it} = \beta_0 + \beta_1 DFII_{it} + \beta_2 X_{it} + e_{it}; DFII \geq \gamma$$

$$SEDI_{it} = \beta_0 + \beta_1 FII_{it} + \beta_2 X_{it} + e_{it}; FII \leq \gamma \quad (6)$$

$$SEDI_{it} = \beta_0 + \beta_1 FII_{it} + \beta_2 X_{it} + e_{it}; FII \geq \gamma$$

Here, γ denotes the unknown threshold parameter. The empirical models mentioned above enable the impact of each type of financial inclusion to differ based on whether countries fall below or exceed the unknown threshold γ .

Models (4), (5), and (6) can only be estimated after rejecting the null hypothesis of linearity ($H_0: \delta_1 = \delta_2$). To do this, a bootstrap procedure was employed to test the null hypothesis of a linear model with an alternative threshold regression model. If the null hypothesis is rejected, that is, the first sample split, the sample was divided into two regimes, that is, $TFII_{it}, DFII_{it}$ and $FII_{it} \leq \gamma$ for the first regime, and $TFII_{it}, DFII_{it}$, and $FII_{it} > \gamma$ for the second regime. Furthermore, the model was re-estimated after dividing the original sample according to the identified threshold (the second sample split). This process was repeated until rejecting the null hypothesis was no longer possible.

IV. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

The descriptive statistics of the variables used in the study have been summarized in Table 3.

Table 3: Descriptive Statistics

Variables	Measurement unit	Obs.	Mean	Std. Dev.	Min	Max
SEDI	Scale from 0 to 1	291	.652	.228	0	1
TFII	Scale from 0 to 1	291	.334	.219	0	1
DFII	Scale from 0 to 1	291	.561	.283	0	1

FII	Scale from 0 to 1	291	.459	.251	0	1
Inflation	%	291	6.059	12.635	-11.876	150.001
Population growth	%	291	.953	1.442	-4.257	11.794
FDI	% of GDP	291	5.428	14.799	-14.409	222.764

4.2 Sample Splitting Results

(Table 4–6) present the non-linearity test results for each financial inclusion index. The testing procedure was performed using the “wild bootstrap-t method” to assess whether the null hypothesis of linearity can be rejected in favour of the alternative hypothesis, which posits a non-linear threshold relationship. However, Threshold regression analysis is essential in examining the non-linear relationships between traditional, digital financial inclusion and SEDI. As highlighted by (Hansen 1996, 2000), a linear approach may fail to capture the complexities of the relationship, mainly because financial inclusion can have different effects at varying levels of inclusion.

Bootstrap methods are often used in threshold regression analyses to deal with the test statistics' small sample sizes, heteroscedasticity, and complex distributions. In the context of threshold tests, wild bootstrap was used, employing Rademacher weights (performed in Stata) to ensure robustness. In regression models, especially in threshold models where the relationship changes at certain points, the distribution of the test statistics (like the t-statistics or Wald tests) may not follow standard normal or chi-squared distributions. The bootstrap method creates empirical distributions by resampling the data many times, allowing for more accurate inference when the assumptions of normality and homoscedasticity do not hold.

Heteroscedasticity (non-constant variance of residuals) is common in financial inclusion data because countries at different levels of financial inclusion might show different variability in socio-economic outcomes. Thus, Wild Bootstrap, with Rademacher weights, is especially useful for handling heteroscedasticity, as it adjusts for

variations in the error structure without relying on homoscedasticity assumptions.

4.3 First Sample Split (Main Threshold):

The results of the first sample split consistently show significant results for all the financial inclusion indices (TFII, DFII, and FII) (high t-statistics and low p-values). The significant *p-values* show that the null hypothesis of a linear relationship is rejected, and there is clear evidence of a threshold effect for all the threshold variables. The threshold estimates identify the point at which the relationship changes, indicating that the impact of financial inclusion on SEDI differs below and above this threshold.

4.4 Second Sample Split (Checking for Additional Thresholds)

The bootstrap p-values for the second sample split of TFII, DFII, and FII threshold variables are insignificant, indicating that a single threshold (two-regime model) is sufficient for all the models across all three years. Therefore, the non-linear threshold regression model was accepted. This is where the procedure stops; when the null hypothesis can no longer be rejected, it indicates that the model has captured the key thresholds.

No further significant non-linearities exist in the data.

Table 4: Threshold analysis for Traditional Financial Inclusion Index (TFII)

	2014		2017		2021
	First sample split	Second sample split	First sample split	Second sample split	First sample split
t-statistics	2.3370	-0.5445	2.2415	-0.1532	2.3660
Bootstrap P value	0.010***	0.6970	0.040***	0.7475	0.000***
Threshold estimates	0.237	0.460	0.289	0.463	0.339
95% confidence interval	[.1601, 1.34]		[.01044, 1.511]		[.2585, 1.158]

The notation ***, **, and * signifies significance at the 1%, 5%, and 10% levels, respectively.

Table 5: Threshold analysis for Digital Financial Inclusion Index (DFII)

	2014		2017		2021	
	First sample split	Second sample split	First sample split	Second sample split	First sample split	Second sample split
t-statistics	6.7794	-0.7552	4.5644	1.3850	4.0421	1.3698
Bootstrap P value	0.000***	0.5300	0.010***	0.2929	0.000***	0.1818
Threshold estimates	0.630	0.808	0.464	0.688	0.694	0.779
95% confidence interval	[0.4308, 0.8613]		[0.3219, 1.25]		[0.3363, 1.149]	

The notation ***, **, and * signifies significance at the 1%, 5%, and 10% levels, respectively.

Table 6: Threshold analysis for Financial Inclusion Index (FII)

	2014		2017		2021	
	First sample split	Second sample split	First sample split	Second sample split	First sample split	Second sample split
t-statistics	4.2443	1.3454	4.4175	-1.2286	3.8020	-0.5142
Bootstrap P value	0.000***	0.1900	0.0101***	0.3939	0.000**	0.3636
Threshold estimates	0.426	0.502	0.524	0.767	0.569	0.645
95% confidence interval	[.3283, 1.052]		[.4282, 1.18]		[.4172, 1.308]	

The notation ***, **, and * signifies significance at the 1%, 5%, and 10% levels, respectively.

4.5 Regression results using Threshold variables

The threshold regression results for each financial inclusion index (shown in tables 7, 8, and 9) for the years 2014, 2017, and 2021 demonstrate that all three indices of financial inclusion are positive and statistically significant drivers of SEDI, regardless of whether they are below or above the threshold levels. In (Table 7), the threshold regression analysis for TFII highlights the non-linear relationship between traditional financial inclusion and SEDI. The analysis shows that TFII positively and statistically significantly impacts socio-economic development in this context. Still, the magnitude of this effect varies depending on whether countries are below or above a certain threshold of financial inclusion. Across all three years, 2014, 2017, and 2021, countries with lower levels of financial inclusion (below the threshold) experienced a much stronger positive effect of TFII on economic development. This finding indicates that in these countries, improvements in financial inclusion have a substantial impact on boosting economic activity and development. The impact of TFII on SEDI is stronger in countries below the threshold, typically less developed countries that seem to benefit more from traditional financial services. As Rapih and Wahyono (2023) noted, countries with low levels of TFII (mainly underdeveloped countries) depend more on the advantages of traditional financial services to chase their capital stability. This could be because, in countries with initially low financial inclusion, expanding access to financial services enables more individuals and businesses to participate in the formal economy, thereby driving growth and development.

In contrast, the effect is less pronounced for countries with higher levels of financial inclusion (above the threshold), while the relationship between TFII and SEDI remains positive. This pattern suggests that these countries might rely less on traditional financial services and possibly have more diversified or advanced financial systems. Moreover, after reaching a certain level of financial inclusion, the marginal benefits of further increasing financial access begin to taper off. This could be attributed to the fact that in countries with more developed financial systems,

much of the population is already integrated into the formal financial sector, and the additional growth benefits of further expansion may be limited.

However, the inflation rate (control variable) lowers TFI development, especially in 2021, which has a significant financial development, showing that inflation will undermine financial stability. For example, studies by Sahay et al. (2015) underscore that inflation can reduce the benefits of financial inclusion for the population, especially in developing countries where high inflation erodes savings and limits access to financial services. Population growth also displays unintended effects; its negative coefficients for 2017 and 2021 indicate that rapid population growth can pressure financial systems. The impact of FDI on TFII is positive but moderate, particularly in 2017, and its influence is minor relative to those of other factors, suggesting that while foreign investment is beneficial for financial development, it is less prominent than domestic economic parameters such as inflation control and population management.

Overall, the findings suggest that the growth-enhancing effects of TFII are particularly significant in less developed and emerging economies, where financial inclusion is lower. In such countries, greater access to finance is a powerful instrument of growth-friendly policy. However, in those countries that have already reached higher levels of inclusion, the emphasis will be on improving efficiency and depth instead of covering more individuals.

Table 7: Regression analysis employing TFII as a threshold variable

Variable	2014			2017			2021		
	Linear OLS without threshold	Regime 1 TFII < -0.237	Regime 2 TFII > 0.237	Linear OLS without threshold	Regime 1 TFII < 0.289	Regime 2 TFII > 0.289	Linear OLS without thresholds	Regime 1 TFII < 0.339	Regime 2 TFII > 0.339
Constant/Intercept	0.452*** (0.037)	0.321*** (0.06)	0.753*** (0.058)	0.477*** (0.042)	0.305*** (0.097)	0.724** (0.066)	0.307*** (0.038)	0.41*** (0.092)	0.551*** (0.087)
TFII	0.692*** (0.075)	0.73** (0.312)	0.231*** (0.104)	0.65*** (0.077)	0.892** (0.398)	0.291** (0.115)	0.728*** (0.074)	0.755** (0.319)	0.525*** (0.144)
Inflation rate	-0.004 (0.003)	0.001 (.003)	-0.021*** (0.005)	-0.005 (0.003)	0.002 (0.005)	-0.021*** (0.005)	-0.001** (0.001)	0 (0.001)	-0.006*** (0.002)
Population growth	-0.011 (0.01)	.004 (0.011)	-0.011 (0.021)	-0.041*** (0.014)	-0.016 (0.024)	-0.024 (0.02)	-0.019 (0.012)	-0.037 (0.026)	-0.034** (0.017)
FDI	0.001 (0.001)	0.013 (0.009)	0 (0.001)	0.004** (0.002)	0.016* (0.009)	0.002 (0.001)	0.003* (0.002)	0.007 (0.008)	0.002 (0.002)
R-square	0.576	0.167	0.404	0.610	0.285	0.491	0.679	0.370	0.474
No. of Observations	97	43	54	97	43	54	97	48	49

Standard errors are shown in parentheses. The notation ***, **, and * signifies significance at the 1%, 5%, and 10% levels, respectively.

In (table 8), the threshold regression results for DFII across the years 2014, 2017, and 2021 present a nuanced understanding of how DFI impacts SEDI, with varying effects across different levels of DFII. For 2014, the model divided countries into two regimes based on their DFII levels. Countries with low DFII (Regime 1) experience a strong positive effect of DFI on development, as expanding access to digital financial services opens new opportunities for economic participation, investment, and consumption, particularly in developing economies. However, in (Regime 2), where countries have higher levels of DFII, the effect remains positive. Still, it is somewhat reduced, suggesting diminishing returns as these countries may have already captured the core benefits of DFI. Moving to 2017, in Regime 1 (low DFII), the positive impact persists, but it is more pronounced compared to the results of 2014. As highlighted by (Aziz and Naima, 2021), this could be because there are numerous obstacles to the sustainability of DFI in less developed nations, including inadequate internet, lack of digital literacy, and technological infrastructure.

However, by 2021, the results show a shift, particularly in Regime 2. While countries in Regime 1 and Regime 2 continue to experience positive effects of DFII on SEDI, the impact in Regime 2 (countries with the highest levels of DFII) becomes most pronounced. This suggests that countries with advanced digital financial systems are seeing renewed and substantial growth benefits, likely due to the deep integration of digital finance into all sectors of the economy, the adoption of cutting-edge financial technologies, and the expanded access to global markets. The results from 2021 indicate that rather than diminishing returns, countries with very high DFI are leveraging DFI to drive significant and sustained economic growth. This aligns with the findings by Law and Singh (2014), who demonstrated that financial development can foster growth, but only up to a certain threshold. This pattern highlights the evolving nature of DFI, where countries at various stages (low, moderate, and high) experience different growth dynamics, with the strongest effects observed in countries

with the most advanced digital financial infrastructures by 2021. Furthermore, the impact of inflation itself is negative overall, with stronger significance in 2021, particularly in Regime 2, which means that higher levels of DFII (denoting more financial activity) are associated with a greater negative effect on inflation on SEDI. In Regime 2, population growth hampers SEDI in high DFI environments.

However, FDI has a favorable impact on SEDI but shows a relatively weak, perhaps even insignificant relationship, particularly in instances where DFII is high, indicating that more than the foreign direct investment is needed to drive socio-economic development in a setting with a relatively developed domestic financial system. This highlights the role of domestic finance institutions, policy frameworks, and local economic drivers rather than reliance on external investment.

Thus, these results suggest that DFII is a determinant of SEDI, yet its impact is not linear, and the benefits decrease as the financial system matures. This indicates that structural policy interventions should help make financial systems more performing, inclusive, and resilient rather than merely growing financial activity. Addressing macroeconomic stability (controlling inflation) and demographic pressures (controlling population growth) is equally important to promote sustainable long-term socio-economic development.

Table 8: Regression analysis employing DFII as a threshold variable

Variable	2014			2017			2021		
	Linear OLS without threshold	Regime 1 DFII<=.630	Regime 2 DFII>.630	Linear OLS without threshold	Regime 1 DFII<=0.464	Regime 2 DFII>0.464	Linear OLS without thresholds	Regime 1 DFII<=0.694	Regime 2 DFII>0.694
Constant/Intercept	0.364*** (0.032)	0.311*** (0.043)	0.583*** (0.148)	0.323*** (0.042)	0.219** (0.1)	0.161* (0.094)	0.2*** (0.052)	0.144 (0.106)	0.159 (0.171)
DFII	0.623*** (0.045)	0.617*** (0.091)	0.392** (0.182)	0.646*** (0.054)	0.95*** (0.208)	0.852*** (0.117)	0.729*** (0.067)	0.687*** (0.17)	0.811*** (0.197)
Inflation rate	-0.002 (0.002)	-0.001 (0.002)	-0.017 (0.01)	-0.006** (0.003)	0.001 (0.006)	-0.005 (0.003)	-0.001* (0.001)	0 (0.001)	-0.003* (0.001)
Population growth	-0.004 (0.008)	-0.003 (0.009)	-0.017 (0.024)	-0.01 (0.012)	-0.019 (0.028)	-0.021 (0.015)	-0.016 (0.012)	0.012 (0.024)	-0.036** (0.014)
FDI	0 (0.001)	0.013** (0.006)	0(0)	0.001 (0.001)	0.011 (0.008)	0 (0.001)	0.001 (0.002)	0.007 (0.006)	-0.001 (0.002)
R-square	0.731	0.483	0.244	0.733	0.502	0.660	0.726	0.395	0.466
No of Observations	97	61	36	97	39	58	97	48	49

Standard errors are shown in parentheses. The notation ***, **, and * signifies significance at the 1%, 5%, and 10% levels, respectively.

Table 9 presents regression results using FII as a threshold variable to explore its impact on SEDI over 2014, 2017, and 2021. FII maintains a statistically significant relationship with SEDI in the linear OLS models, with a coefficient range between 0.68 and 0.725 across models. This suggests that financial inclusion positively impacts socio-economic development each year. In Regime 1, the coefficients are stronger, for example, 0.79 in 2017, implying that the effect of an increase in financial inclusion on development is larger when the financial system is less inclusive. Instead, in Regime 2, the coefficients are generally lower, indicating diminishing returns as financial inclusion becomes more inclusive. For example, in 2021, the coefficient in Regime 2 is equal to 0.655. In contrast, the coefficient in the linear model is 0.725, which tells us that after it reaches a certain level, any improvement in the FII would not lead to a prominent improvement in SEDI. Furthermore, the control variables reveal heterogeneous impacts with inflation reducing SEDI across all levels. In contrast, the inflation effects are strongest at higher levels of FII, indicating that

inflation impedes the advantages of financial inclusion.

Overall, in all the threshold results, Inflation tends to have a negative or insignificant effect on growth, especially in the threshold regimes. When inflation does show significance, it typically hampers growth, which aligns with existing economic literature, suggesting that high inflation reduces purchasing power, creates economic uncertainty, and discourages domestic and foreign investment. Moreover, as highlighted by (Barro, 1996), inflation is often seen as a risk factor for foreign investors, as it increases economic uncertainty and reduces investment incentives.

Population growth is showing a continuously negative impact in the baseline model and in threshold regimes for every year, where it negatively impacts development. In line with the findings of (Bloom and Canning, 2004; Sachs, 2015), rapid population growth in developing countries tends to strain resources, cause overcrowding, and lower quality of life. In short, while financial inclusion plays a key role in

fostering growth, macroeconomic factors- FDI, inflation, and population growth also significantly shape economic outcomes. Their influence

highlights the complexity of socio-economic development, where multiple elements must align for sustained progress.

Table 9: Regression analysis employing FII as a threshold variable

Variable	2014			2017			2021		
	Linear OLS without threshold	Regime 1 DFII <=0.426	Regime 2 FII>0.426	Linear OLS without threshold	Regime 1 FII <=0.524	Regime 2 FII>0.524	Linear OLS without thresholds	Regime 1 FII <=0.569	Regime 2 FII > 0.569
Constant/ Intercept	0.385*** (0.034)	0.31*** (0.05)	0.586*** (0.08)	0.376*** (0.041)	0.273*** (0.078)	0.644** (0.113)	0.297*** (0.048)	0.233** (0.101)	0.385*** (0.141)
FII	0.68*** (0.052)	0.68*** (0.16)	0.427*** (0.116)	0.674*** (0.062)	0.79*** (0.179)	0.349** (0.15)	0.725*** (0.073)	0.795*** (0.209)	0.655*** (0.186)
Inflation rate	-0.003 (0.002)	-0.001 (0.003)	-0.008 (0.007)	-0.005* (0.003)	-0.004 (0.004)	-0.014* (0.007)	-0.001 (0.001)	0 (0.001)	-0.005** (0.002)
Population growth	-0.005 (0.008)	0.002 (0.001)	-0.031 (0.021)	-0.021 (0.013)	0.004 (0.021)	-0.029 (0.019)	-0.022* (0.013)	-0.007 (0.024)	-0.029* (0.015)
FDI	0.001 (0.001)	0.012* (0.007)	0 (0)	0.002 (0.002)	0.009 (0.007)	0.002 (0.001)	0.002 (0.002)	0.007 (0.007)	0.001 (0.002)
R-square	0.692	0.322	0.352	0.698	0.398	0.364	0.698	0.426	0.480
No of Observations	97	50	47	97	56	41	97	51	46

Standard errors are shown in parentheses. The notation ***, **, and * signifies significance at the 1%, 5%, and 10% levels, respectively.

The results indicate that all three financial inclusion indices, Traditional, Digital, and Combined, significantly positively impact the Socio-Economic Development Index (SEDI) until a certain threshold beyond which such influence diminishes. This is consistent with prior research that argued for an inverted-U relationship; for instance, (Law and Singh,2014; Rapih and Wahyono, 2023), some financial inclusion encourages socio-economic development until a certain inflexion point beyond which the benefits wane. In general, the results indicate a nonlinear relationship where TFII’s impact on SEDI is stronger in countries with lower initial levels of financial inclusion (Regime 1). This implies that lower-inclusion countries stand to gain more from traditional financial inclusion, which could be because financial services are increasingly accessible to underserved populations, boosting socio-economic development. In contrast, for countries with already high levels of financial inclusion (Regime 2), the marginal impact of increasing TFII is smaller, suggesting a potential saturation effect.

4.6 Results of Robustness Check

For the robustness check, we averaged the data across three years, and the results confirmed that the findings (Tables 10 and 11) are consistent with previous empirical studies. TFII and DFII positively affect socio-economic development wherever below or above threshold financial inclusion levels. These results further affirm that expanding TFI and DFI continues to positively impact socio-economic development without causing any negative effects, even at higher levels of financial inclusion. This implies that the development dividend regarding financial inclusion has not yet been exhausted. This suggests that further advancements in financial inclusion can still yield developmental benefits. Furthermore, we conducted an additional analysis using a two-year average for the variables, following the three-year average analysis. The results obtained from both analyses were almost identical, reinforcing the consistency and reliability of the results. This indicates that the relationship between the key variables is not sensitive to the period used, adding further confidence to the robustness of our findings.

Table 10: Robustness test for TFII using three years average (2014, 2017 and 2021)

Variable	Linear OLS without threshold	Regime 1 TFII<0.354	Regime 2 TFII> 0.354
Constant/intercept	0.458*** (0.041)	0.32*** (0.074)	0.678*** (0.101)
TFII	0.678*** (0.079)	1.064*** (0.241)	0.364** (0.165)
Inflation rate	-0.002 (0.002)	0 (0.002)	-0.014*** (0.004)
Population growth	-0.034** (0.014)	-0.015 (0.02)	-0.022 (0.025)
FDI	0.002* (0.001)	0.011 (0.008)	0.001 (0.001)
R square	0.624	0.464	0.466
No of observations	97	56	41

Standard errors are shown in parentheses. The notation ***, **, and* signifies significance at the 1%, 5%, and 10% levels, respectively.

Table 11: Robustness test for DFII using three years average (2014, 2017 and 2021)

Variable	Linear OLS without threshold	Regime 1 DFII < 0.456	Regime 2 DFII > 0.456
Constant/intercept	0.295*** (0.041)	0.147** (0.093)	0.207*** (0.072)
DFII	0.679*** (0.054)	0.975*** (0.214)	0.796*** (0.93)
Inflation rate	-0.003** (0.001)	-0.001 (0.003)	-0.002 (0.002)
Population growth	-0.007 (0.012)	0.009 (0.024)	-0.037** (0.017)
FDI	0 (0.001)	0.012 (0.009)	0 (0.001)
R square	0.752	0.428	0.669
No of observations	97	36	61

Standard errors are shown in parentheses. The notation ***, **, and * signifies significance at the 1%, 5%, and 10% levels, respectively.

V. CONCLUSION AND POLICY IMPLICATIONS

This study investigates how TFI and DFI affect the SEDI for 2014, 2017, and 2021, utilizing data from 97 developed and developing countries. The research was motivated by existing research that only analyzed how financial inclusion influenced economic growth or analyzed the TFI and DFI in isolation. However, the study's innovation lies in introducing the SEDI, a more comprehensive measure than a traditional indicator of economic growth and integrating the TFI and DFI as a holistic measure of financial inclusion. This allowed us to look at the impact of TFI alongside DFI and how both contribute to economic growth, social progress, and access to financial services. We further strengthen the analysis by extending the time period to another year, 2021, besides 2014 and 2017, to develop a more defined perspective on how financial inclusion develops over time, eventually affecting socio-economic transformation. This also captures the growing impact of digital shifts in financial inclusion.

Further, using cross-sectional sample splitting and threshold estimation techniques established by Hansen (1996, 2000) in stata-17, this study adds considerably nuanced insights into how financial inclusiveness influences socio-economic development. It also highlights the turning point in the aforementioned expansion. Therefore, it

can be concluded from the findings of this study that TFI and DFI are necessary for boosting socio-economic development. Two important conclusions stand out: First, TFI is essential in countries with less developed financial sectors, demonstrating that increased access to formal banking is helpful in these environments, especially for savings and loans. Second, DFI becomes increasingly important as countries develop stronger digital infrastructure. In this context, the recent data reveal that in 2021, countries with higher levels of DFI obtained more significant socio-economic benefits.

In conclusion, sustainable DFI in emerging markets requires an appropriate multi-dimensional strategy involving multi-stakeholders. One of the core pillars of this effort is establishing a strong digital infrastructure. This means prioritizing investment in telecommunications and internet access to make digital financial services available to more people, especially those in rural and remote communities who often have limited access. In addition to infrastructure, an equally important need is a regulatory system that encourages innovation but does not compromise user safety. Thus, for DFI to succeed, it should assure people that they feel comfortable transacting with peace of mind that data will be private and not cost anyone exorbitant charges. However, while we must

create an ecosystem where start-ups and innovators can prosper, government agencies and financial institutions must balance crafting guidelines that promote growth with strategies that mitigate against some of the risks associated with digital platforms, such as fraud or abuse. Additionally, policymakers and financial institutions must craft regulations through a unified approach to secure digital platforms from malicious activities and other associated risks. In this regard, all stakeholders must ensure a collaborative effort to build a resilient and inclusive economy.

Though comprehensive, this study is not free from limitations that future research should address. One of this study's primary limitations has been the data deficiency for some indicators. Due to the unavailability of the data, certain countries and the socio-economic indicators that could provide a deeper understanding were excluded. Consequently, the study's ability to make regional and global comparisons was constrained, which could further validate the findings. Moreover, while this study conducted a threshold analysis using data from three specific years, it could not adequately capture the complex temporal patterns or examine how threshold points might shift over shorter or longer intervals. Future studies can use more frequent data points to reveal deeper trends in how financial inclusion affects socioeconomic outcomes over time. Finally, broadening the context to consider other factors, such as regulatory environments, digital capability initiatives, and regional development strategies, could deepen understanding of the interplay between financial inclusion and socio-economic development across various settings.

Conflict of interest statement

The author declared no potential conflicts of interest for the research, authorship and/or publication of this article.

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Data Availability Declaration

The data supporting the findings of this study are available in the supplementary file in Word format.

REFERENCES

1. Agiropoulos, C., Polemis, M. L., Siopsis, M., & Karkalakos, S. (2022). Revisiting the finance-growth nexus: A socioeconomic approach. *International Journal of Finance & Economics*, 27(3), 2762-2783.
2. Ahmad, M., Majeed, A., Khan, M. A., Sohaib, M., & Shehzad, K. (2021). Digital financial inclusion and economic growth: Provincial data analysis of China. *China Economic Journal*, 14(3), 291-310.
3. Allen, F., Demirguc-Kunt, A., Klapper, L., & Peria, M. S. M. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of Financial Intermediation*, 27, 1-30.
4. Arner, D., Buckley, R., Zetzsche, D., & Sergeev, A. (2022). Digital finance, financial inclusion, and sustainable development: Building better financial systems. *Fintech and COVID-19*, 176.
5. Ayasrah, T. R. (2012). The social economic development index: A new measurement of development. *Jurnal Ekonomi Malaysia*, 46(2), 37-53.
6. Aziz, A., & Naima, U. (2021). Rethinking digital financial inclusion: Evidence from Bangladesh. *Technology in Society*, 64, 101509.
7. Barik, R., & Pradhan, A. K. (2021). Does financial inclusion affect financial stability: Evidence from BRICS nations? *The journal of developing areas*, 55 (1).
8. Barro, R. J. (1996). Inflation and growth. *Review-Federal Reserve Bank of Saint Louis*, 78, 153-169.
9. Beck, T., Demirguc-Kunt, A., & Peria, M. S. M. (2007). Reaching out: Access to and use of banking services across countries. *Journal of financial economics*, 85(1), 234-266.
10. Bloom, D. E., & Canning, D. (2004). Global demographic change: Dimensions and economic significance. *NBER Working Paper Series: 10817*.

11. Chong, T. T. L., & Yan, I. K. (2014). Estimating and Testing Threshold Regression Models with Multiple Threshold Variables. *MPRA Paper No. 54732*.
12. Cypher, J. M. (2014). *The process of economic development*. Routledge.
13. Demirgüç-Kunt, A., & Singer, D. (2017). Financial inclusion and inclusive growth: A review of recent empirical evidence. *World Bank policy research working paper*, (8040).
14. Demirguc-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*. World Bank Publications.
15. Dhakal, C. P., & Nepal, G. (2016). Contribution of micro-finance on socio-economic development of rural community. *Journal of Advanced Academic Research*, 3(1), 134-141.
16. Donovan, K. (2012). Mobile Money for Financial Inclusion. In *Information and Communications for Development 2012: Maximizing Mobile*, 61–73.
17. Fischer, S. (1993). The role of macroeconomic factors in growth. *Journal of Monetary Economics*, 32(3), 485-512.
18. Fong, Y., Huang, Y., Gilbert, P. B., & Permar, S. R. (2017). Chngpt: Threshold regression model estimation and inference. *BMC bioinformatics*, 18, 1-7.
19. Gabor, D., & Brooks, S. (2020). The digital revolution in financial inclusion: international development in the fintech era. In *Material Cultures of Financialisation* (pp.69-82). Routledge.
20. Gomber, P., Koch, J. A., & Siering, M. (2017). Digital Finance and FinTech: Current research and future research directions. *Journal of Business Economics*, 87, 537-580.
21. Han, R., & Melecky, M. (2013). Financial inclusion for financial stability: Access to bank deposits and the growth of deposits in the global financial crisis. *World Bank policy research working paper*, (6577).
22. Hansen, B. E. (1996). Inference when a nuisance parameter is not identified under the null hypothesis. *Econometrica: Journal of the econometric society*, 413-430.
23. Hansen, B. E. (2000). Sample splitting and threshold estimation. *Econometrica*, 68(3), 575-603.
24. Jia, S., Qiu, Y., & Yang, C. (2021). Sustainable development goals, financial inclusion, and grain security efficiency. *Agronomy*, 11(12), 2542.
25. Karim, Z. A., Nizam, R., Law, S. H., & Hassan, M. K. (2022). Does financial inclusiveness affect economic growth? New evidence using a dynamic panel threshold regression. *Finance Research Letters*, 46, 102364.
26. Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The worldwide governance indicators: Methodology and analytical issues1. *Hague Journal on the rule of law*, 3(2), 220-246.
27. Khera, P., Ogawa, M. S., & Sahay, M. R. (2021). *Is digital financial inclusion unlocking growth?* International Monetary Fund.
28. Kulkarni, L., & Ghosh, A. (2021). Gender disparity in the digitalization of financial services: challenges and promises for women's financial inclusion in India. *Gender, Technology and Development*, 25(2), 233-250.
29. Law, S. H., & Singh, N. (2014). Does too much finance harm economic growth?. *Journal of Banking & Finance*, 41, 36-44.
30. Lee, L. (2024). Enhancing Financial Inclusion and Regulatory Challenges: A Critical Analysis of Digital Banks and Alternative Lenders Through Digital Platforms, Machine Learning, and Large Language Models Integration. *arXiv preprint arXiv:2404.11898*.
31. Levine, R. (2005). Finance and Growth: Theory and Evidence. *Handbook of Economic Growth*, 1.)
32. Loukoianova, M. E., Yang, Y., Guo, M. S., Hunter, M. L., Jahan, M. S., Jamaludin, M. F., ... & Wu, M. Y. (2018). *Financial Inclusion in Asia-Pacific*. International Monetary Fund.
33. Manders, T., Chateau, J., Magné, B., van Vuuren, D., Prins, A. G., & Dellink, R. (2012). *Socio-economic developments*, OECD Environmental Outlook 2050.

34. Nardo, M. (2005). Tools for Composite Indicators Building. *European Commission Joint Research Centre*.
35. Nizam, R., Karim, Z. A., Rahman, A. A., & Sarmidi, T. (2020). Financial inclusiveness and economic growth: New evidence using a threshold regression analysis. *Economic research-Ekonomika istraživanja*, 33(1), 1465-1484.
36. Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul review*, 18(4), 329-340.
37. Ozturk, I., & Acaravci, A. (2013). The long-run and causal analysis of energy, growth, openness and financial development on carbon emissions in Turkey. *Energy economics*, 36, 262-267.
38. Ozturk, I., & Ullah, S. (2022). Does digital financial inclusion matter for economic growth and environmental sustainability in OBRI economies? An empirical analysis. *Resources, Conservation and Recycling*, 185, 106489.
39. Rapih, S., & Wahyono, B. (2023). The relative impact of traditional and digital financial inclusion on economic growth: a threshold regression-based comparative analysis. *International Review of Applied Economics*, 37(6), 781-803.
40. Rastogi, S., & E, R. (2018). Financial inclusion and socioeconomic development: Gaps and solution. *International Journal of Social Economics*, 45(7), 1122-1140.
41. Razavi, S. (2012). World Development Report 2012: Gender equality and development—A commentary. *Development and Change*, 43(1), 423-437.
42. Sachs, J. D. (2015). *The age of sustainable development*. Columbia University Press.
43. Sahay, M. R., Cihak, M., N'Diaye, M. P., Barajas, M. A., Mitra, M. S., Kyobe, M. A., ... & Yousefi, M. R. (2015). *Financial inclusion: Can it meet multiple macroeconomic goals*. International Monetary Fund.
44. Sarma, M. (2012). *Index of Financial Inclusion* "A measure of financial sector inclusiveness" (No. 1207). Hochschule fuer Technik und Wirtschaft, Berlin.
45. Sarma, M., & Pais, J. (2011). Financial inclusion and development. *Journal of International Development*, 23(5), 613-628.)
46. Swanson, E. (2007). World development indicators 2007.
47. Tay, L. Y., Tai, H. T., & Tan, G. S. (2022). Digital financial inclusion: A gateway to sustainable development. *Heliyon*, 8(6).
48. UNDP. (1990). Concept and measurement of human development. *Human Development Report 1990*.
49. United Nations. (2019). World economic situation and prospects. *New York: United Nations*.
50. World Bank. (2020). *The COVID-19 pandemic: Shocks to education and policy responses*. World Bank.
51. Xu, S., & Wang, J. (2023). The impact of digital financial inclusion on the level of agricultural output. *Sustainability*, 15(5), 4138.
52. Yue, P., Korkmaz, A. G., Yin, Z., & Zhou, H. (2022). The rise of digital finance: Financial inclusion or debt trap?. *Finance Research Letters*, 47, 102604.



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ABSTRACT

Background and Objective: In this topic and research, several concepts of "cooperation" have been mentioned and presented with the opinions of economic scientists with more themes and numerous concepts, but rather the aim is to observe several specific opinions of economic experts.

Method: It is derived from the method of content ratio coefficient (CVR) and content index (CVI) and in such a way that it has taken examples from the opinions of cooperative economists and in another method, it has also taken several cases from the history of economic ideas and economic institutions.

Findings: The meaning and concept of cooperation have been intuitively presented to researchers in various forms and forms, and cooperation has been completely raised from a general concept to a specific concept, namely cooperative economics, and another finding is that with the economic and centralized tendency, namely cooperatives, the manifestation and form of economic and social has been achieved simultaneously.

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Conclusion:

Based on the research findings and initial themes, basic concepts and theories of economic scientists, it is evident that the presentation of an economic and social system is completely dependent on cooperation and collaboration, especially unity, and in the end, if there is a disruption, it will originate from the lack of unity and unity of individuals.

Keywords: 1-Cooperation 2-Economy- Cooperative Economy -4- Cooperative.

Author: Assistant Professor of the first grade of all universities of Iran - Tehran.

I. INTRODUCTION.

With a brief and concise look at human life, we can see that without cooperation, the philosophy of life will not have a proper meaning.

We can go among the people and see how much they have been able to do and can still do by uniting and uniting, and solving many problems.

This is the secret of unity, empathy and unity, which in cooperatives do not face the accumulation of wealth, but with collective wisdom and public thought, they can respond to all their problems with great intimacy and friendship.

This plan itself can replace retail and the accumulation of small and individual sales in the near future, and not only are the products produced on a large scale with essential goals and domestic needs, but the store will also respond to the daily and essential needs of the people on a very large scale.

And it goes without saying that it is this aggression and lack of unity and empathy that makes people more competitive or economic jealousy, and with a little care, a lover and empathizer will offer his life and make no demands.

And we know that many cases of production and distribution should be free and when people

demand money; many principles, rules and customary practices are destroyed.

In fact, by citing numerous sources and references, we easily understand that there are many social commonalities and that man has come to understand his essence with the social environment through cooperation and evolution.

The field of the word cooperation is very wide and this collection wants to present a clear example of the unity and understanding of nations and people.

Because the economy, which is life-giving from the moment of human life, is appropriate for each human being with unity, harmony and behavioral and intellectual understanding, and if, God forbid, they encounter contradictions and conflicts, that is where it will be difficult to continue living.

Man; always suffers from discrimination, boasting and exaggeration, even from the owners of large management; But in cooperation, the law is that they are equal and brotherly and even have one vote in vital and important decisions, and with residential complexes that direct the villas of capitalists towards non-discrimination, equality and balance.

Cooperatives are opposed to decentralization and a welfare life for a special and extravagant few, and life is centralized and exclusive by forming cooperative villages and towns so that even workers do not have to worry about housing, welfare and transportation.

II. IN THE NAME OF GOD

Definitions and introductory discussions of cooperation

1 - Lexical meanings of cooperation

Dehkhoda Dictionary:

To stand together and help each other, to help each other (1)

Nazim al-Ateba:

To help each other, to help each other (2)

Amid Persian Dictionary:

Cooperation, assistance, assistance, participation, to help each other, to help each other (3)

1. Dictionary Vol. 14, p. 754
2. {- Nazim al-Ateba Vol. 2, p. 901 with Nafisi's dictionary
3. Amid Persian Dictionary Vol. 1, p. 695

Assistance, help, cooperation (1)

3-Moein Persian Dictionary:

Participation and assistance, complicity, to help each other, to help each other (4)

Tabatabai Arabic Dictionary

To provide financial assistance, to cooperate with each other, to help,

Cooperation, assistance

Arabic language Al-Munjad:

1. Complicity, cooperation, participation, cooperation, release, help, getting rid of THINGS
2. Arrest, assistance, assistance, assistance, assistance, cooperation, companionship, assistance

Yawar Verdist, partner, companion, helper, help each other, helper, supporter (1)

The meaning of the word "cooperation" is

Cooperation, sharing efforts and meeting common needs (2)

Cooperation is derived from the root "aun" and has been included in the chapter of interaction, one of the characteristics of the chapter of interaction is that it expresses .

3-{- Education on cooperation and cooperative companies p. 59}

The doer of work that requires two or more people to perform; That is, it requires cooperation (4)

The meaning of the word cooperation, whose Latin term is Cooperation, is to help, mutual assistance and joint efforts. The real meaning of cooperation is the famous slogan one for all and all for one (5)

Comprehensive theory)

From all the above definitions, it can be deduced that cooperation has a fundamental unity with the following 7 words. (1)

1. Cooperation
2. Coop
3. Participation

4. Assistance
5. Support
6. Assistance
7. Assistant

Latent theory,

So, cooperation means mutual assistance and cooperation towards each other with a common goal in order to Comparative Study of the Concept and Theory of Cooperation and Cooperatives.

There has certainly been no ambiguity about the concept of cooperation since the early days of creation, because all individuals potentially had multiple theories and implemented the concept of cooperation together in practice. (3)

The concept of cooperation has been with every social phenomenon since the first moments of its existence, and it is the factor that makes its survival, continuity, delivery, and evolution possible. In other words, cooperation is the basis of all the various aspects and aspects of "life."

And its spirit is inherent in the body of existence, and the basis of creation and existence is based on it, and it is the source of the effect and emergence of the creatures of the world.

1. Cooperation is the way to a healthy society, p. 15
2. Cooperation and its basic principles, p. 9
3. Cooperative economics, Chapter 2, p. 25

Cooperation is a way of life and a philosophy for life, and a set of behavioral trends and methods, and at the same time, it is a comprehensive set of principles and foundations of belief and society that are used to guide human life, and cooperation is the foundation and foundation of a new economic and social system that will flourish and develop over time. (2)

Cooperation in its broadest sense is cooperation, assistance, assistance, and joint efforts to meet common needs. (3) With this definition, cooperation has a completely comprehensive concept and goes beyond the limits of a specific place and time, and includes a kind of mutual relationship between individuals, individuals, groups, and groups, the result of which is the use

of the achievements of group activity to satisfy needs.

This initial concept and simple form is cooperation itself, and this relationship exists continuously and sincerely at all levels of social life. (4)

Among living beings of different degrees of biological evolution, five important levels of "shared and collective" activities have been observed, which include both the multiple levels of evolution of beings and the concepts of this behavior from the simplest to the most complex and from the most limited to the broadest stages.

In fact, as beings have become more perfect and complex, human societies have also advanced towards perfection. Collective activities, i.e. cooperatives, have expanded towards more and more complexity, diversity and multiplicity... (5) The field of action and scope of the word (cooperation) is very wide and finds clear examples in all aspects of human life.

1. Cooperation and its basic principles, p. 10
2. Cooperative teachings, p. 23
3. Cooperatives of consumers of food diets, p. 1
4. Examining the position of cooperation in the country's foreign trade, p. 4
5. Cooperation and its basic principles, p. 12

In any case, although the words cooperation and cooperative are lexical in origin, there is a difference in meaning and concept between these two words in terms of field of action, method of work, quality and results obtained.

The concept of the word cooperation, whose Latin term is equivalent to cooperative, is a special company or organization that a number of people form arbitrarily and in accordance with special regulations and principles in order to meet their material needs. (1)

In simpler terms, the meaning of cooperatives is companies or organizations that are formed on the basis of cooperation principles (2)

Therefore, the word cooperative is always used the form of an organization or company in which a number of people are engaged in activities. It

comes to mind, while the word cooperation conjures up the idea of helping others or seeking help from others.

The basis of cooperatives is actually based on the financial economic method.

This method guarantees the provision and generalization of social justice in various societies, and nations and countries derive maximum material and spiritual benefits from it. Therefore, in the last few years, cooperative companies have expanded day by day throughout the world. (3)

In addition, a cooperative company is an organization composed of individuals who voluntarily come together to achieve a common goal or goals and form an economic organization that is governed on the basis of democracy, and each of them fairly contributes to providing the necessary capital.

And they assume responsibility for the profits and losses resulting from the operations in which they have effectively participated.

1. Cooperative education and cooperative companies p. 60
2. Cooperative education and cooperative companies p. 60
3. Cooperative In any case, although the words cooperation and cooperative are of the same root in terms of lexical origin, there is a difference in meaning and concept between these two words in terms of the field of action, the way of working, the quality and the results obtained.

The concept of the word cooperation, whose Latin term is equivalent to cooperative, is a special company or organization that some people form in order to meet their material needs at will and in accordance with special rules and principles. (1)

In simpler terms, the meaning of cooperatives is companies or organizations that are formed on the basis of the principles of cooperation (2)

Therefore, the word cooperative always comes to mind as an organization or company in which some people are engaged in activities. While the

word cooperation embodies helping others or asking for help from others in the mind.

The basis of cooperatives is actually based on the financial economic method.

This method guarantees the provision and generalization of social justice in various societies, and nations and countries derive maximum material and spiritual benefits from it. Therefore, in the last few years, cooperatives have been expanding day by day all over the world. (3)

In addition, a cooperative is an organization composed of individuals who voluntarily come together to achieve a common goal or goals and form an economic organization that is governed on a democratic basis, and each of them fairly contributes to providing the necessary capital.

And take responsibility for their share of the profit and loss resulting from the operations in which they have effectively participated.

1. Cooperative Education and Cooperatives, p. 60
2. Cooperative Education and Cooperatives, p. 60
3. Cooperative Economics, p. 25

In other words, a cooperative is an organization composed of a group of individuals who have realized the similarity of their needs and each other and, as a result of intellectual growth, have developed the belief that through unity and cooperation with others and collective work, they can be more successful and victorious in meeting their common needs and improving their material and social conditions than individual efforts. (1)

However, the crisis and stagnation of economic activities and the increasing problems and problems of the human world, especially regarding the weaker classes of people, in this era led a group of social reformers, writers and thinkers in the field of science and knowledge to present reform ideas and establish the scientific discussion of cooperation in its present form. In this quotation, we will summarize their many views:

Robert OWEN (RABERTOWEN): 18 - 1771 He always believed that through cooperation, many problems of human life can be solved.

While "OWEN" informed his wealthy contemporaries about the rights of workers through action, he made them understand that, like oppressive employers, they should not think that fellow human beings are slaves. And they should always be exploited like slaves, but with cooperation and common sense, while respecting all subordinates, we can provide the basis for consultation and consultation with them until their talents flourish and, side by side with each other, they work with all their might to meet the material and spiritual needs of their society. (1)

"On" as a committed and passionate factory owner and in every sense an example in that era when there were no principles other than savagery and barbarism. He always tried to provide all kinds of comforts for his workers and insure them against all kinds of accidents.

1- Cooperative Economy p. 26

For this purpose, he established regulations for workers that were not only exemplary in every way, but also observed all human principles, and the workers employed by "On" enjoyed health insurance, social security, jobs, etc., and lived away from the dangers of unemployment, unlike his other comrades who died under the oppression of other employers.

"OWEN" was strongly opposed to class differences among the people of society and considered it a very important factor for social conflicts and economic collapse.

He sought the root of all people's problems in the health of the economy of the society.

In OWEN's view, all the working and laboring classes of society had a series of human principles and he made those principles the basis of the relationship between the worker and the employer and they seemed amazing in every way. He was strongly opposed to the liberalism of capitalism and competition and considered it a matter of language and harm. (2)

OWEN, in his criticisms of capitalism and the design of a cooperative society, considers the three elements of society, culture and thought to be effective.

That is, relying on the ideas and perceptions of the UTILITARIMUS school of hedonism, England introduces a specific image of man in such a way that in these human activities and behaviors, the main goal is human happiness and if selfish actions are set aside and the happiness of fellow human beings is emphasized and approved; The social environment is conducive to economic activities, and individual and social interests are combined, and cooperation is automatically created through self-government and thought, and through unity in society.

His criticisms of the prevailing conditions of society at that time have an impact, and the influence of classical English economists is clearly visible. Because he believes that the only social agents or the main executors of the revolution or revolutionary men such as Saint-Simon and Fourier are not intellectual theorists; rather, it is pragmatists, enlightened agents, and social reformists who realize the revolution economy p. 251- Social Philosophy of Cooperatives, p. 20 3- History of Economic Thoughts and Ideas, p. 106 2- Social Philosophy of Cooperatives, p. 21 Give. (1)

Undoubtedly, "His" commodity theory expresses the fact that the workers of the Ministry of Labor have poor working conditions and inadequate living conditions. It conveys the fact that one of the important factors of such a situation is the use of "money" which destroys the real value of products. So he always considers a kind of two-way exchange between communities based on the value of labor.

"He" who has traveled to most European countries to propagate and promote his ideas. Finally, as an intellectual businessman and a militant leader and founder of cooperatives, he had a great impact on public opinion. (1)

1 - History of Economic Thoughts and Ideas, p. 107

The term "cooperative" was first mentioned by "He" in 1821. And by studying the living conditions of the workers of his factory, he presented the philosophy of cooperatives.

He presented the plan of forming cooperative villages to the society and based on that, he believed that the implementation of that program would solve the problem of unemployment and eradicate poverty and public housing. (1) He believed that attracting inactive urban people to these villages, as well as the majority who are burning in the fire of poverty caused by unemployment, the least benefit that it leaves is to create a relatively decent income that they can live OWEN.

"She" said that if the governments plan to form cooperative villages, they will put their actions on the agenda.

presented the cooperative.

Her proposed plan It was to give 1,500 hectares of land to 1,000 families and provide them with all the means of welfare, and this community should do agricultural and industrial work together. The kitchen in the shared house should prepare everyone's food, but the residence should be separate and independent. 3

She considered that by establishing cooperative villages of all public affairs of the production and administration of the village in the hands of the people and their inhabitants, thereby eliminating the privileges existing between the ruler and the condemned. (4)

The epidemic of unemployment has been cured forever, and the active and unused forces; the vast majority of the people who have remained unemployed in the past and present, can be fully utilized.

3- History of Economic Thoughts and Ideas, pp. 108 and 107 4- Social Philosophy of Cooperatives, p. 34

Cooperative villages practiced a system of commodity exchange among themselves, and he acknowledged that not only agricultural communities, city dwellers, but also all nations of

the world can practice and popularize such a method in their social and economic life. (1)

His theory later went further and took on a social form, which, as a result of these humanitarian ideas and thoughts, considers the economy to be based on culture and thought, morality and civilization, and ignoring religion as the main core of human social life is one of the greatest shortcomings of this thinking.

He always referred to the sub-set He paid special attention to religious teachings and religious instructions, and that is why he devoted his life to serving humanity (2) and for the first time in the world he founded residential complexes for workers and immigrants. Within this community, all work is planned centrally and implemented collectively. The distribution of goods is also carried out centrally, taking into account the hierarchy of age and necessity. In such a system, market mechanisms such as trade and money will be wasteful and useless. (3)

1. Social Philosophy of Cooperatives, p. 31
2. History of Economic Ideas and Thoughts, p. 107
3. Social Philosophy of Cooperatives, p. 35

According to his plan, each region or area; makes the production of a specific type of commodity the focus of its efforts, and thus the activities of the various regions include a variety of products that can collectively meet the needs of all people from all classes and professions.

He tried to eliminate and destroy the words exploitation and commercial profit from the dictionary of economic activities and insisted that all agricultural and industrial products They should be exchanged on the basis of a fair price, and this fair price is actually the wage paid to the worker or producer for the production of the commodity. (1)

Robert Onn believed that there was only one price, the price of the finished work, which could be the standard and means of exchange, and that other rights, such as brokerage, labor fees, and the like, were considered illegitimate.

Onn taught the working class that in order to secure union rights and economic and social welfare, the ranks of this group should unite in thought and action with cooperatives and form a single line with them, which today is called the unity of efforts of cooperatives and labor unions.

He practically participated in the establishment and creation of cooperative villages with his com His belief in cooperation rather than competition and his optimism that education could completely shape the self-interest of others.

Published under the title "A New View of Society" in 1813, later when "On" was organizing cooperative villages in America, he advocated the abolition of the metal-based monetary system and instead promoted the issuance of tickets defined in terms of units of labor and awarded to workers in return for the amount of work done, and his ideas formed the basis of the labor theory of value. (2)

"On" believed that it was not only the problem of distribution that had to be solved, but the problem of culture and the form of production and, in short, the real happiness of human society were the main problems for which a solution had to be foreseen. In his view, the provision of real human happiness was the only goal that should not be neglected, and he always paid more than anything else a deep attention to the provision and enjoyment of culture.

"On" attached special importance to environmental conditions and said that first one should change the living environment of man and then build the foundations of his palace of happiness.

- 1 - Social Philosophy of Cooperatives, p. 32
- 2 - Great Economists of the World, p. 14

He was strongly influenced by the hard life of the working class and tried to free the leadership of machinery and industry from the hands and feet of the workers.

"OWEN"'s dedication and attention to moral issues was so great that he was introduced among other more distinguished and prominent leaders

to the extent that he is known as one of the great teachers of human moral issues.

And for this reason, "On" is called the leader of a special type of cooperation and cooperation because the movement that he advocated is full of spiritual values. (1)

He always tried to arouse the humanitarian feelings of the wealthy and the wealthy towards the working class.

He opposed Malthus' theory (that population growth was a major obstacle to economic development)

and believed that cooperation could provide food for the people of the world (2) Finally, he is considered one of the great founders of the International Union of Cooperatives because the existence of this international society was inspired by his plan and thought.

Charles Fourier (1772-1837), Fourier always focused on production and said that as much as possible should be produced. The idea of high production prevented him from paying attention to other important issues such as social justice and a proper distribution system. And in his opinion, the more production is increased, the more the national income will become more suitable and poverty and want will gradually disappear.

- 1- Social Philosophy of Cooperatives, p. 32
- 2- Cooperative Economics, p. 8

Fourier sought to "solve economic and social problems in a cooperative society" and he believed that in order to cut off intermediaries and prevent illegal commercial operations, the members of society, including workers, farmers, and artisans, should be concentrated in cooperative organizations and collective units.

Therefore, for this purpose, he presented a plan based on which the residents of a district or area should unite and organize themselves, pool their property, both movable and immovable, and unify the boundaries between them, and work and live physically in a single farm (2)

In addition, Fourier's main purpose in eliminating property boundaries does not mean to collectivize it, but rather to unite and socialize scattered production units.

Undoubtedly, Fourier is one of the pioneering architects of urban and civic life today.

Charles Fourier called cooperative organizations the Phalange and introduced its administrative organization as the Flanster. The members of each phalanx unit were determined to be between 400 and 2000 people, and 45 phalanstery were to be established on a land area of two thousand hectares (3).

The main activity of their phalanster group included agricultural production, supporting manual and professional work that farmers engaged in during times of unemployment to increase their income. Unlike "Aunt" Vossin-Simon, Fourier was never affected by the "Industrial Revolution". (4)

The affairs of the phalanster were managed by its members, and each individual took on a task, and in this way they all gained experience in all matters of society and its management, including social and economic work.

1. Social Philosophy of Cooperatives, pp. 36 and 35
2. Cooperative Economics, p. 28 and Social Philosophy of Cooperatives, p. 36
3. Cooperative Economics, p. 28
4. Social Phil In Fourier's view, a worker who chooses a certain type of profession every day and always works in it. Over time, this monotonous job becomes boring for him.

Whereas if he had another job, he could use it when necessary, at least not only to create job security but also to diversify his job.

He taught that consumer affairs should take an organized and structured form and be subject to social systems and regulations in such a way that everyone can participate in it, and the purpose of establishing a phalanx is to concentrate these matters.

Based on Fourier's teachings, municipal and municipal organizations intervened in the distribution of goods and food and undertook this social task in the form of distribution cooperatives. They also paid guaranteed loans to individuals in order to cut off the influence of usurers, insured the people, and made a series of side economic activities such as agriculture and animal husbandry the focus of their efforts, and in this way, they were able to eliminate many of the daily problems of the people. He considered democracy in phalanxes to be one of the foundations of cooperation and cooperation, and considered the desire to cooperate as the basis for the formation of a cooperative company.

Fourier stated his purpose in establishing the phalanx of a united group: to exclude the hoarders who owned the means of production.

He expressed his intention in establishing the phalanx of a united group: to exclude the hoarders who owned the means of production.

He always tried to free the worker from slavery and to place all factors of production at the service of the human agent.

"Fourier" was the first person to defend labor rights. His efforts were based on the principle that all members of society should be protected from the risk of unemployment and should enjoy and be insured with the rights and benefits of unemployment.

And it would be appropriate to call him the father of the social philosophy of full employment. (1)

Because he saw man under the influence of social systems with inherent motivation and internal tendencies along with stages of natural manifestations (2)

1. Social Philosophy of Cooperatives, pp. 39 and 38
2. History of Economic Thought and Beliefs, p. 102
3. Philippe Boucher (1769-1861)

Inspired by the spiritual school of Christianity, he presented a reformist plan. According to Boucher's plan, the government should establish

banks and provide credit through them to labor organizations. (1)

He believed in a democratic republican government in which the state owned everything except worker cooperatives. Boucher proposed two early cooperative principles that were taken into consideration, which were:

1. The reserves of production cooperatives cannot be divided even after the company is dissolved.
2. All workers of production cooperatives must be members of the company and all members must work in the company. (2)

Philippe Boucher, above all, paid special attention to production cooperatives and considered them effective for social and economic progress.

Lonnie Blanc (1812-1882)

In Louis Blanc's opinion, individuals and groups should enjoy the protection and support of the state.

He believed that society should provide the opportunity for each person to work in proportion to his ability and provide him with human rights for life, and this is not possible in the shadow of economic freedom and class differences.

To solve this problem, Louis Blanc proposes large manufacturing companies, the basis of which is freedom of choice and "cooperation and collaboration". (3)

Louis Blanc is a supporter of "state economy", but in his plan for cooperatives, he considers government intervention in cooperatives to be necessary, subject to the provision of financial resources, and prefers the state's high supervision over production matters to intervention.

He proposes that all production centers should be managed in a popular cooperative manner and a social system that is supported by the state and that it should produce the products needed and essential for the people of the community. He considers it one of the best and most successful methods in production.

Louis Blanc says that the payment of salaries and wages should be grouped based on the work done, the type of job and profession, and the way people work. In his opinion, the income of production units, after deducting government claims, will be divided into three parts.

- 1- Equal shares among members
- 2- Pension fund
- 3 Special for crisis-hit industries

He believes that government intervention should not cause economic units to lose their independence and jeopardize their existence as a social unit. Rather, the government's duty is always to provide for various units and to guide and coordinate economic activities. (1)

He considers the government economy to be at the service of the people of society and does not consider progress for the country's economy without the cooperation and assistance of social individuals.

Because Louis Blanc believes that the government has always been the main driver and factor in creating cooperation and cooperation among people and has a significant to important role to Economics.

Georges Fouquet (1953) - (1873) He has always paid attention to "cooperative economics" and considers it related to the private sector. (3)

"Fouquet" believes that there must be an economic motive and factor for the formation of a cooperative company

1. Social Philosophy of Cooperatives, p. 62 3 - Social Philosophy of Cooperatives, p. 152
2. Social Philosophy of Cooperatives, p. 152

And without such a motive, the formation of a cooperative company is impossible.

He considers the basis of "cooperation" and the formation of a cooperative company to be to achieve an economic goal, because people usually come together when they have a common goal and the interests of all of them are considered.

"Fouquet" says that cooperative organizations can become members of cooperative federations on

the basis of unity and join together like links in a chain and develop this unity and eventually create a state.

Georges Fouquet divides economic systems into four parts:

1. State economy (public sector)
2. Capitalist economy (developed and macro)
3. Rural, artisanal, family economy (private sector) or non-capitalist and micro)
4. Cooperative economy

He relates the cooperative sector to the third part and believes that "cooperation" is in fact a structure consisting of small units of the family economy, rural economy and artisanal economy. In this regard, cooperatives that are formed spontaneously and without government assistance can be included in cooperatives and, according to "Foucault", "cooperation is a private matter". (1)

Foucault believes that cooperatives will remain sustainable and that the "political determinism of the environment" and the "nature of economic organizations" as two effective elements will play a significant role in the development and progress of cooperatives. (2)

1. Introduction to the organization of worker cooperatives, p. 20
2. Social philosophy of cooperatives, p. 153
3. Loie Dubroker

He believes that labor unions can prepare the ground for the transition from the social to the economic stage and train workers so that they are capable of economic activities. (1)

While recommending unity and joint economic activity, he says that we should pool our material and spiritual resources, integrate our thoughts and actions, and make collective production the centrality of cooperatives.

Dubroker is in favor of the concentration of power in the hands of central governments, and from this point on, the members of society, like mindless machines, have no choice but to carry out the orders of higher authorities. If this trend continues, the intellectual development of the members of society will not only not progress

towards perfection, but will also plunge the entire society into deadly poverty.

Finally, he says, the spirit of cooperation emerges and takes the form of cooperative institutions when the national economy is placed at the service of the general public and is freed from government guardianship and guidance. (2)

Definition of cooperation and its nature and goals
Definitions of cooperation,

1. Cooperation means self-help and collective cooperation to achieve a common goal with the slogan "one for all and all for one". (3)
2. It is the term for concentrating the resources and efforts of individuals and using them to achieve a specific goal by meeting the common needs of individuals. (4)
3. Social Philosophy of Cooperatives, p. 210
4. Education and Promotion of Cooperative Principles and Thoughts, p. 18
5. Introduction to the Organization of Worker Cooperatives, p. 29
6. Cooperative Rights, p. 3

Cooperation means the collective participation and cooperation of people in solving economic problems (1)

The Nature of Cooperatives:

1. It is the foundation and foundation of a new economic and social system that will flourish and develop over time (2)
2. Cooperatives are a combination of self-help and mutual aid, which tends to build universal human values. (3)

Cooperation in its own sense is a type of cooperation and participation of individuals. To establish and create a center, especially for the essential production of people.

And also an economic organization by accepting principles that reject commercialism and exploitation of the individual. (4)

Objectives of Cooperatives:

1. Providing various fields for people's participation

2. Spreading the culture and thought of cooperation among all human societies.
3. Creating centers and towns to concentrate the activities of cooperatives.
4. 4Enhancing human life and providing security for its continuation.
5. Creating the basis for human activities in a shared way in which minds and souls are focused.
6. 6Creating employment opportunities and ensuring job security, especially for young people.
7. Providing necessary care and interaction with all members to prevent disputes.
8. Meeting the common needs of individuals and improving the economic and social situation of members through self-help and mutual assistance.
9. Encouraging and encouraging individuals to be content and save in accordance with cooperative principles.
10. Preventing the monopoly of wealth and establishing balance and equilibrium in society.
11. Eliminating unjustified discrimination and inappropriate class differences.
12. Serious struggle against poverty, moral corruption and social and economic backwardness
13. Reviewing the suggestions and criticisms of the people and presenting the best method of cooperation and public services
14. Gathering all moral values with economic goals and meeting the common needs of individuals in a system based on virtue and salvation
15. Cooperatives: A Path to a Healthy Society, p. 21
16. Consumer Cooperatives and Cooperative Regimes, p. 1
17. Cooperation and Its Basic Principles, p. 10
18. Teaching and Promoting the Principles and Thoughts of Cooperatives, p. 16
19. The Subject of Cooperation

The general subject of cooperation is matters that involve the life and livelihood of "all beings who cooperate to meet their common needs.

But in the specific subject of cooperation, the issue of man and meeting the common needs of the people is raised through mutual cooperation.

5- Types of Cooperation

1. Social Group cooperation based on providing services and activities in society in such a way that its benefit is general and comprehensive.
2. Economic: Here, popular cooperation is used in all economic fields, including agriculture, industry, mining, etc., to meet livelihood needs.
3. Political: Cooperation in order to expand public opinion about the events that occur daily between the government and the people.
4. Cultural: In this section, all-out efforts by the people are observed in promoting and disseminating common and accepted matters in society.
5. Religious: More cooperation and joint efforts in religious and spiritual matters in order to strengthen moral values that, as a group, have a special sanctity.
6. Legal: In legal cooperation, cooperation and assistance of an organization, person or persons due to the height of legal problems, including civil, criminal, private... and always defend the public rights of the people.
7. *Natural: Cooperation and assistance of all beings throughout the universe.*

6- History and Cooperative Movement

In the history of human societies, there have always been cases where human beings have cooperated with each other for educational and research purposes. In fact, the beginning of cooperation and cooperation among humans can be considered at the beginning of human creation. Even all living beings have a kind of cooperation for the survival of their generation.

The first phenomenon of cooperation among humans is the formation of families, then the creation of tribes and finally urban communities. Therefore, cooperation is not a phenomenon of new civilization (1)

The human body is also unable to continue its life even for a moment without the cooperation and cooperation of existing members and elements.

Cooperation has a value in history and in each of the social spheres, especially economic and livelihood, and from an economic point of view: the era of social cooperation began from the beginning of human social life and gradually evolved from the 15th century until it has taken its current form. The principle of industrial or scientific cooperation; With the Industrial Revolution and the French Revolution, the eighteenth century begins (2)

1-Cooperative Economy p. 26

2-Cooperative Economy p. 26

In ancient times, a limited population had enough land, water, and means of primary production and hunting at the disposal of the same limited number of people, and each person within a closed economy met their needs in a self-sufficient manner, but with the increase in population and the emergence of production centers and the employment of workers, the "capitalist" economic system gradually came into being. This system led to the formation of capitalist and worker classes, which were opposed to each other due to the conflict of interests, and after that, thinkers and reformers sought to find a solution and in the fifteenth and sixteenth centuries, they presented recommendations and plans for the use of cooperation and to solve problems. (1)

According to research, around 3000 BC, cooperative and quasi-cooperative institutions existed in Egypt, and also, based on the laws of Hammurabi, the king of Babylon in 2000 BC, it gives information about the cooperative agricultural method. (2)

Therefore, it can be believed that since the beginning of creation and the beginning of the system of existence, all divine messengers have always emphasized, based on the heavenly books and supernatural inspirations, cooperation and solidarity among their people and all humans for all ages.

In the Middle Ages and the Renaissance, respectively in the years 476 and 1453 AD, and even in ancient times, as well as in the era of Plato and Aristotle, about six hundred years before

Christ, evidence of joint efforts and cooperation is found. (3)

In ancient Rome, the history of craft cooperatives and artisans' workers dates back to 450 years before Christ, and each rank had its own cooperative organization. (4)

1. Cooperative Law, p. 11
2. Economics of Cooperative Institutions, p. 5 and History of Economic Ideas, p. 31, 15 and 5
3. Cooperative Economics, p. 26
4. Cooperatives, the Path to a Healthy Society, p. 21
5. (Cooperative Movement)

The cooperative movement helps to reduce the many contradictions of life and find a basis for everyone to cooperate with each other.

It helps and teaches us that for social and economic progress, members of cooperatives must cooperate and share efforts. (1)

The origin of the rise and development of the modern cooperative movement must be sought in the profound economic, social and political developments and changes that emerged in Europe in the late eighteenth century and were manifested throughout the nineteenth century. (2)

In 1844: 28 English weavers came together and created the first cooperative company and are known in the history of the cooperative movement as the pioneers of the "Racheldales". (3)

This group, known in the West as the pioneers of cooperatives, always followed the path of the divine prophets, who considered defending the disadvantaged in society and serving the people as the highest acts of worship. Through their innate beliefs and adherence to the four gospels (Matthew, John, Luke, Mark), their connection with religious leaders, and their enjoyment of religious festivals and customs in Christian culture, they gained unparalleled acceptance among the people of that time in England in 1844. It did not take long for this religious movement to replace the capitalist economy throughout Britain.

And it always offered principles and guidelines naturally and without any control to all cooperative companies around the world.

Among cooperative thinkers, perhaps Robert Owen was more interested in the pioneers of the cooperative movement than others because his views were always presented as a model for them.

"Owen" believed that through cooperation, all people on earth can be saved from the danger of poverty and provided for.

1. Education and promotion of cooperative principles and ideas, p. 17
2. Education and promotion of cooperative principles and ideas, p. 18
3. Cooperative economy and institutions, p. 5

Owen's plan to form cooperative villages played a significant role in the special leap of the "cooperative movement". And the formation of the phalanstery by Charles Fourier)

These cooperative economists considered the only solution to livelihood problems in the cooperative movement to be the fight against private property and competition in order to advance the economic system.

Finally, the cooperative movement caused cooperation to spread from a state of effort to an intellectual movement among human societies.

Cooperation in the present era

Today, cooperation and cooperation always exist between individuals in all human communities.

The people of the society are also in contact with consumer cooperatives for their own share and based on their respective needs. And the cooperative way of life has been accepted by many people.

Cooperatives have always been a center for focusing thoughts and ideas and collective action to meet common needs.

Cooperatives have long fought against economic obstacles and disadvantages for social reform and have always preferred public welfare to private interests (1)

Cooperative enterprises, together with their members, are trying to increase the trust of individuals in entrusting their savings to the cooperative, and in this way not only savings are increased but also participation and cooperation are promoted with confidence.

Currently, cooperation is considered a scientific and specialized field all over the world, and hence many scientific centers under the name of cooperatives solve many problems with cooperation and group unity.

Cooperatives in the present era, p. 13

III. CONCLUSION

Finally, it is clearly seen that a concept of "unity" along with "unity", "partnership" and "assistance" is derived from the concept of cooperation.

And scientists also try to emphasize numerous cooperatives within the framework of this cooperation and promote the economy from an individual and exclusive state to a general, group and popular economy.

Theories of cooperative economists: They have never been in conflict with the theories of other economists, but they always emphasize common economic principles with the condition of participation and unity for necessary and commonly needed goals.

We conclude that the economic plan of the first cooperative economist of England was welcomed not only by the people of 200 years ago but also by other economic experts because of its excessive support for workers.

Because, despite the owners of wealth and capital, he paid more attention to the worker and his livelihood, which plays a fundamental role in production, than to his property.

Because, as all owners of souls and minds clearly know, human beings, whether male or female, are very sensitive and easily influenced by their whims and desires. It is the obligations of economic ethics that make him, in very difficult circumstances, not hesitate to observe the

protection of property, other than sacrificing his life.

If his mood is not observed and the employer is always in the best of circumstances and the worker is in the worst of circumstances, the day will finally come when the rich man's gathered harvest will be reduced to ashes by the worker's anger.

Therefore, by prioritizing economic ethics over some economic principles, it is possible to create security so that the capitalist can leave small business and focus on large-scale trade and production.

So cooperation, with a history of several thousand years and with greater accuracy, can be believed that since the beginning of creation, and especially the prophets, have always preached, promoted and emphasized the solidarity of divine attachment to the firm rope and unity for all humans and for all specialized and non-specialized members.

And it is with this cooperation and unity that all nations and peoples can achieve a unity of approach and stay away from all conflicts and unnecessary conflicts. Because so far, by maintaining unity and cohesion, humanity has been able to achieve a life without calamities, and it goes without saying It is clear that with the lack of unity and numerous social discriminations, not only will there be no place for comfort, but they will also neglect their daily priorities and their work will become unstable, unstable and independent. In this regard, social conflicts will narrow the field for them and one after another will become victims of wars and social aggressions.

Therefore, cooperatives with humane principles and Islamic divine principles can honestly and decisively fulfill the necessities of the international life of the monotheistic people working in each of the centers, away from any unnecessary and luxurious expenses.

REFERENCES

1. The Holy Quran, 1370, Mehdi Elahi Qomshehi, Tehran, Basir, 20th edition
2. Dehkhoda, Ali Akbar, 1385, Dictionary, Tehran, University of Tehran, 12th edition
3. Parto, Abolghasem, 1378, Word Finder, Tehran, Mythology, 7th edition
4. Maalouf, Lewis, 1380 Al-Manjid, Qom - Islamic Publications, 10th edition
5. Nafisi, Ali Akbar, 1976, Nazm-ol-Ateba, Tehran, Khayyam, 2nd edition
6. Mousavi, Seyed Reza, 1981, Cooperative Education and Cooperative Companies, Tehran, Tawazun, 10th edition
7. Amini, Ali Akbar, 1993, Cooperative as a Path to a Healthy Society, Tehran, Ministry of Cooperatives, 2nd edition
8. Amini, Ali Akbar, 1991, Cooperatives and Their Basic Principles, Tehran, Ministry of Cooperatives, 3rd edition
9. The Position of Cooperatives in the System of the Islamic Republic of Iran, 1985, Gilan, General Directorate of Commerce, 1st edition
10. Samadi, Hadi, 1995, History of Economic Ideas and Thoughts, Tehran, Tarbiat Modares University, 5th edition
11. Cooperative Economics, 1985, Tehran, Iran Cooperative Center, 1st edition
12. Jasbi, Abdullah, 1982, Cooperatives and Cooperatives, Tehran, 1st edition
13. Yousefi, Ahmad Ali, 2006, Cooperative Economics from the Perspective of Islam, Tehran, Islamic Culture and Thought Research Institute, Second Edition
14. Sabet Saeedi, Arsalan, 2009, Cooperative Law, Tehran, Payam Noor University, Eighth Edition
15. Blog, Mark, 2006, Great Economists of the World, Hassan Golriz, Translator, Tehran, Nay Publishing House, First Edition
16. Introduction to the Organization of Worker Cooperatives, 2005, Iranian Cooperative Center, Tehran, Ministry of Cooperatives, Second Edition
17. Social Philosophy of Cooperatives, 2001, Tehran, Rural Cooperative Organization, First Edition

18. Cooperatives in the Present Age, 2001, Tehran, Ministry of Cooperatives, First Edition
19. Education and Promotion of Cooperative Principles and Thoughts, 2003, Ministry of Cooperatives, First Edition

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