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INTRINSIC AND EXTRINSIC MOTIVATION OF STUDENTS IN STARTUP PROJECTS

Abstract. *Student participation in startup projects is a key driver of innovation, entrepreneurial ecosystems, and sustainable economic development in the context of digital transformation. Motivation plays a decisive role in determining the level of engagement, persistence, and success of students in entrepreneurial activities. This paper explores the nature of intrinsic and extrinsic motivation of students involved in startup projects, analyzes their impact on entrepreneurial intentions and learning outcomes, and identifies practical tools for enhancing motivation within university-based startup ecosystems. Special attention is paid to the role of knowledge valorization centers, impact campuses, and digital platforms in fostering sustainable student entrepreneurship.*

Keywords: *intrinsic motivation, extrinsic motivation, students, startup projects, sustainable entrepreneurship, digital transformation, knowledge valorization.*

Introduction. The development of startup ecosystems within higher education institutions has become one of the most important trends in modern educational and economic policy. Universities are transforming from traditional educational centers into entrepreneurial hubs that generate innovations, support knowledge commercialization, and contribute to sustainable development. In this context, student startup projects serve as an effective form of experiential learning, allowing students to combine theoretical knowledge with practical entrepreneurial activity.

However, the success of student startups largely depends on the level and structure of student motivation. Motivation determines not only the willingness of students to participate in startup initiatives but also their

perseverance in the face of uncertainty, risk, and frequent failures. Understanding the balance between intrinsic and extrinsic motivation is therefore essential for building effective educational environments that support sustainable entrepreneurship and digital transformation.

The purpose of this study is to analyze the essence and features of intrinsic and extrinsic motivation of students in startup projects, to identify their influence on students' entrepreneurial behavior, and to outline practical mechanisms for strengthening motivation within university startup ecosystems.

Presentation of the main research material. Motivation is traditionally defined as a system of internal and external drivers that stimulate human activity and determine its direction, intensity, and persistence. In the context of entrepreneurship education, motivation reflects students' readiness to take initiative, assume responsibility, generate ideas, and implement innovative solutions.

Intrinsic motivation refers to engagement in an activity for its own sake, driven by internal interest, enjoyment, curiosity, or personal significance. For students involved in startup projects, intrinsic motivation is often associated with:

- Interest in innovation and technology;
- Desire for self-realization and creative expression;
- Aspiration for professional growth and self-development;
- Need for autonomy and independence;
- Personal values related to social impact and sustainability.

Students with a high level of intrinsic motivation tend to demonstrate deeper involvement in startup activities, higher resilience to stress, and a stronger orientation toward long-term project development. They perceive startup projects not merely as academic tasks but as meaningful life experiences.

Extrinsic motivation is based on external rewards and incentives that stimulate behavior. In the context of student startups, extrinsic motivation includes:

- Financial rewards (grants, scholarships, investments, prizes);
- Academic incentives (credits, grades, certificates);
- Career-related benefits (employment opportunities, internships, networking);

- Social recognition (awards, media coverage, prestige);
- Institutional support (mentorship, access to infrastructure, incubation).

Extrinsic motivation plays an important role, especially at the early stages of student involvement in startup projects. External incentives often act as a trigger that encourages students to try entrepreneurial activity for the first time.

Startup projects are characterized by high uncertainty, limited resources, intense competition, and frequent changes. Under such conditions, motivation becomes a decisive factor influencing students' entrepreneurial behavior.

Intrinsic motivation is closely linked to long-term engagement and persistence in startup projects. Students who are internally motivated are more likely to overcome difficulties, continue working after failures, and invest additional time and effort in product development, market research, and team building. In contrast, students driven mainly by extrinsic rewards often reduce their activity when external incentives weaken or disappear.

Startup projects serve as a powerful tool for developing entrepreneurial competencies, including creativity, critical thinking, leadership, communication skills, and digital literacy. Empirical studies show that intrinsically motivated students achieve higher learning outcomes because they actively seek new knowledge, experiment with different solutions, and reflect on their experience. Extrinsic motivation, while effective for initiating participation, may lead to superficial learning if students focus primarily on obtaining rewards rather than mastering entrepreneurial skills.

Intrinsic motivation is particularly important for fostering innovation and sustainable entrepreneurship. Students who are motivated by values, social responsibility, and the desire to make a positive impact are more likely to develop startups oriented toward environmental sustainability, social inclusion, and digital transformation. Their projects often go beyond short-term profit goals and aim at long-term societal benefits.

Student motivation is formed under the influence of a complex set of internal and external factors.

The educational environment plays a crucial role in shaping both intrinsic and extrinsic motivation. Problem-based learning, project-based courses, startup laboratories, and interdisciplinary programs stimulate students' curiosity

and creativity. At the same time, transparent assessment criteria, academic recognition, and access to scholarships strengthen extrinsic motivation.

Mentors, coaches, and teachers significantly influence student motivation through feedback, support, and role modeling. Inspirational mentors who share real entrepreneurial experience can enhance students' confidence and intrinsic interest. At the same time, professional guidance increases the perceived value of startup activity as a career pathway.

Business incubators, accelerators, FabLabs, and knowledge valorization centers provide students with access to resources, equipment, legal advice, and funding opportunities. Such infrastructure strengthens extrinsic motivation while simultaneously creating conditions for intrinsic involvement through experimentation and creativity.

Digital platforms, online collaboration tools, and virtual accelerators significantly expand students' opportunities for participation in startup projects regardless of geographical location. Digitalization increases the accessibility of entrepreneurial education, facilitates networking, and supports rapid prototyping. It also enhances motivation by making startup activity more flexible, dynamic, and visible.

Knowledge valorization centres and impact campuses play a strategic role in transforming academic knowledge into market-oriented innovations. They act as intermediaries between universities, industry, investors, and society, thereby strengthening both intrinsic and extrinsic motivation of students.

From the perspective of intrinsic motivation, knowledge valorization centres:

- Encourage students to work on real-world problems;
- Promote interdisciplinary collaboration;
- Support socially and environmentally oriented startups;
- Foster a culture of innovation and creativity.

From the perspective of extrinsic motivation, these centres provide:

- Financial support and seed funding;
- Access to investors and business partners;
- Legal and marketing консультації;
- Opportunities for international cooperation and scaling.

By integrating educational, research, and entrepreneurial functions, impact campuses create a holistic ecosystem that supports sustainable student entrepreneurship.

Despite the positive role of both types of motivation, an imbalance between intrinsic and extrinsic drivers may lead to negative consequences. Excessive reliance on financial rewards and formal incentives can undermine intrinsic interest, reduce creativity, and lead to short-term thinking. Students may start perceiving startup projects only as a way to obtain prizes or credits, rather than as a platform for personal and professional growth.

On the other hand, relying solely on intrinsic motivation without providing sufficient external support may lead to burnout, frustration, and project abandonment, especially in resource-intensive startup activities.

Therefore, the main challenge for universities and knowledge valorization centres is to create a balanced motivational system that simultaneously supports students' internal aspirations and provides adequate external incentives.

Based on the analysis, the following practical recommendations can be proposed:

1. Integration of Startup Projects into Curricula. Embedding startup activities into educational programs increases both intrinsic interest and extrinsic academic incentives.

2. Development of Mentorship Systems. Involving practitioners and successful entrepreneurs as mentors strengthens students' confidence and intrinsic engagement.

3. Transparent Funding Mechanisms. Competitive grants and seed funding stimulate extrinsic motivation while maintaining fairness and openness.

4. Recognition and Dissemination of Success Stories. Public recognition of student achievements enhances social motivation and inspires other students.

5. Support of Social and Green Startups. Orientation toward sustainable development strengthens value-based intrinsic motivation.

6. Digital Support Platforms. Online tools for idea generation, project management, and networking increase accessibility and continuous engagement.

Conclusions. Intrinsic and extrinsic motivation are key determinants of students' involvement in startup projects, directly influencing their learning outcomes, entrepreneurial behavior, and orientation toward sustainable development. Intrinsic motivation ensures deep engagement, creativity, and long-term commitment, while extrinsic motivation plays an important role in initiating participation and providing necessary resources.

Knowledge valorization centres and impact campuses act as powerful catalysts for student motivation by integrating education, innovation, and entrepreneurship within the framework of digital transformation. A balanced combination of intrinsic and extrinsic motivational factors is essential for the formation of a resilient, innovative, and socially responsible generation of student entrepreneurs.

Further research should focus on empirical measurement of motivational factors in different educational contexts and on the development of digital tools for personalized motivation support in student startup ecosystems.