

**STRATEGIC RESOURCE MANAGEMENT: FIXING THE MISSING CHAIN IN THE COMMERCIALIZATION OF UZBEK UNIVERSITY RESEARCHES**

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**Abstract.** The study investigates the strategic resource management of academic intellectual property, aiming to explore the transition mechanisms for the commercialization of university researches in the Republic of Uzbekistan. By utilizing the Resource-Based View (RBV) logic and qualitative assessment of the VRIO framework, the analysis reveals a significant gap in the strategic orchestration of academic knowledge, but exposes an “innovation productivity paradox” in the emerging digital economy. The high concentration of raw scientific publications is negatively correlated with actual startup ecosystem integration, reflecting the dominance of isolated academic practices over market-driven innovation. Besides, institutional landscapes revealed a critical deficit in the organizational capacity necessary to exploit valuable resources. To meet the ambitious targets of the “Digital Uzbekistan - 2030” strategy, there is a necessity of fixing the “missing chain”-specifically, intermediary technology transfer mechanisms-extracting crucial lessons from strategic resource orchestration to transform academic potential into sustained competitive advantage.

**Key Words:** Strategic Resource Management, commercialization, university researches, Resource-Based View, RBV, innovation, absorptive capacity, missing chain, strategic, VRIO, startups, ecosystem.

## **1. Introduction**

For a long time, the relationship between academic knowledge creation and regional economic growth has been in the spotlight of strategic management and macroeconomic literature. Many economic theories position the generation of unique intellectual resources as driving engines of employment, entrepreneurship dynamics, and technological innovation [1]. However, according to numerous empirical findings, the stable rise of the number of university researches and academic papers does not directly imply an equalized economic development of the startup ecosystem or high commercial advancement. As foundational strategic management scholars showed in their studies, the macroeconomic advantages of university research are often heterogeneous, and high economic development is due to the maturity of certain

organizational networks capable of capturing the value of these resources [2, 3]. This spatial heterogeneity is especially noticeable in regions with transitioning economies, where deeply rooted institutional disparities and missing commercialization chains are disguised by aggregate macroeconomic growth.

The Uzbekistan landscape offers a unique opportunity to examine the links between academic human capital, strategic resource allocation, and industrial modernization. With the highest population in Central Asia, Uzbekistan abandoned the outdated planned economy model towards a free market economy, triggering substantial changes in the distribution of strategic priorities among all administrative units of the republic. The recent political changes are vividly reflected in the new initiative, which is the “Digital Uzbekistan - 2030” strategy [4]. It aims not just to accelerate and modernize the economies of peripheral regions through digitalization, but also to bring a fully new wave of reforms, for example: fostering digital infrastructure, empowering emerging startups, and bridging the gap between scientific establishments and the real economy.

The strategic purpose of the new initiative is to foster economic development based on a knowledge-based framework, where strategic resource management makes the commercialization of researches possible. Still, empirical findings of how these macroeconomic strategies enable convergence between university laboratories and the startup ecosystem remain severely underrated. In most cases, existing literature considers aggregate GDP and isolated university rankings, leaving behind a vital gap, where rigorous investigation into institutional-level strategic management is needed. There is an assumption that less developed innovation systems will eventually catch up by merely producing more research. This requires sophisticated analysis applied to the highly unique landscape of Uzbekistan.

The further investigation requires an analysis in order to find out whether the sheer quantity of academic researches is enough to drive innovation, or if the strategic management quality-the “missing chain” of commercialization-has a more important role. To eliminate this gap, this study focuses on combining qualitative institutional analysis with the Resource-Based View (RBV) of the firm and innovation ecosystems. Based on RBV logic, nations and their respective startup ecosystems gain a competitive edge not only because of existence in a profitable global market, but also on account of using rare, valuable, and deeply integrated intellectual resources properly organized to capture market value [2].

## **2. Literature review**

### ***2.1 The Resource-Based View and Academic Commercialization Constraints***

The spatial distribution of economic growth and the commercialization of innovation in post-socialist nations remains a matter of fierce discussion. Major macroeconomic concepts state that liberalization of the market in its natural way

eliminates spatial disproportion due to the optimal reallocation of intellectual and physical resources [5]. Yet, spatial analysis in transition economies and the nations of Central Asia shows that dismantling planned economies exacerbates the discrepancy between academic output and actual industrial or startup needs. Utilizing the Resource-Based View, pioneered by Barney (1991), resources must be Valuable, Rare, Inimitable, and Organized (VRIO) to generate sustained competitive advantage [2]. In the context of higher education, the research itself is the resource; however, the transition towards a balanced commercialization model requires rigorous modernization of the 'Organization' component.

In nations with developed economies, universities can play a role as the engines of aggregate economic growth, moving beyond their traditional teaching roles to become entrepreneurial universities capable of strategic resource orchestration [6]. Nevertheless, in developing nations, there is a tendency known as the “academic productivity paradox.” Various scholars introduced a widely accepted concept, showing that the spread of higher education research in post-soviet nations is often explained through bureaucratic metrics and quota fulfillment by necessity, which refers to an administrative mechanism instead of innovative entrepreneurship [7]. The integration of academic capital into startup industries is an important transition from existing just to survive towards transition based on innovational growth. Meanwhile, the presence of published researches is a standard indicator of university activity, but it often lacks commercial utility. The approach grounded in the strict utilization of Resource-Based View logic dictates that academic knowledge has economic benefit only in the case when the surrounding ecosystem possesses “absorptive capacity”, which refers to dynamic capabilities to assimilate and commercially use external knowledge [8, 9].

## ***2.2 Contemporary Literature Along With Ultimate Synthesis***

In recent times, the literature focuses more and more on the analysis of the strategic management of academic patents and the exploration of the "missing chains" in developing markets. Scholars state that institutional problems in transitioning nations radically change the development strategies at the level of the state, forcing universities to survive relying on state funding, instead of the formal innovation's path through commercialization [10]. In a similar way, empirical data is used in order to prove that formal strategic factors determine whether the academic knowledge remains isolated or becomes a catalyst for integrated economic prosperity [11].

Moreover, recent strategic management scholars call for acknowledgment that in developing startup ecosystems, new ventures often lack the structural bridges to access university laboratories. Developing this idea, Audretsch and Link (2019) demonstrate that measuring only the quantity of raw research papers is an insufficient indicator of economic prosperity; instead, the “technology transfer mechanisms”-the missing

chain-determine the economic prosperity [12]. Lastly, the literature of pioneering theories of the transitional period and recent literature about institutional ecosystems indicate that without the maturity of strategic management and “absorptive capacity” at the firm level, the proliferation of university researches remains an insufficient factor of technological equalization.

### 3. Methods

With the purpose of empirical examination of the strategic resource management of academic researches and the evaluation of the commercialization missing chain, this study makes use of comparative qualitative analysis and strategic documentary assessment. According to standard regional empirical literature on institutional growth, the foundational specification is organized in such a way that it reflects the relationship between university resource generation and the localized characteristics of the Uzbekistan startup ecosystem.

The main methodological model relies on a strategic assessment framework grounded in the Resource-Based View, specifically deploying VRIO analysis. In this particular framework, there is an evaluation of legislative acts, the current state of university-industry linkages, and the strategic capacity of higher education institutions to act as resource orchestrators over the given stretch of time. The region-specific fixed effects of national policies are isolated by examining the current legislative environment of the Republic of Uzbekistan against the requirements of the “Digital Uzbekistan - 2030” strategy.

Strict application of this comparative condition is confirmed by the necessity of qualitative triangulation [13]. The dataset considers pillar metrics and strategic directives derived from official governmental reports, the Ministry of Higher Education, Science and Innovations of the Republic of Uzbekistan, and the State Statistics Committee. Employment of a structured VRIO assessment ensures persistent uniformity across heterogenous economic landscapes. The methodological foundation is grounded on a 2-stage approach. Firstly, there is an analysis of the existing academic resources utilizing the VRIO framework. Secondly, there is an assessment of Uzbekistan's current strategic policies regarding technology transfer, which is used for the evaluation of the "missing chain" in relation to startup market demand.

### 4. Analysis

#### 4.1 *The VRIO Assessment of Uzbek Academic Researches*

In order to investigate the commercialization potential of innovation, in this study, there was analyzed the strategic state of university researches using the VRIO (Value, Rarity, Inimitability, Organization) framework. The aggregate growth of academic publications in Uzbekistan disguises deep hidden strategic gaps.

Looking at first what the Value and Rarity dimensions suggest, the intellectual output of Uzbek universities, especially in fields related to the digital economy and

technical sciences, holds significant intrinsic value. The scientific discoveries and technical frameworks developed are rare, as they are often tailored to the highly specific localized context of the Central Asian transition economy. However, this discrepancy means significant qualitative disparities: while academic knowledge is created, the Inimitability and Organization dimensions are severely compromised. Without robust intellectual property protection mechanisms actively utilized by researchers, the inimitability of these researches drops.

More importantly, the cardinal changes are halted at the 'Organization' phase. The universities themselves are not structurally organized to capture the value of their own researches. Prior to recent reforms, the academic system retained an isolationist approach to research. It is needless to say that the share of commercialized university patents and researches utilized by the startup ecosystem is remarkably low. This reflects a fierce discussion about the maturity of the innovation supply chain. The research has potential, but the universities lack the strategic intermediary vehicles to package this resource for the open market.

#### ***4.2 Identifying the Missing Chain: The Strategic Management Gap***

Meanwhile, turning to the administrative mechanisms of the Republic of Uzbekistan, the institutional setup reflects a trajectory struggling with the final step of commercialization. The aggregate growth of the economy disguises the fact that universities and the startup sectors still operate predominantly in isolation.

Here, the main convergence test of strategic resource management is testified by observing the actual technology transfer. According to the strategic targets of the “Digital Uzbekistan - 2030” strategy [4], there is vivid evidence that the government pursues a knowledge-based economy. However, utilizing Resource-Based View logic along with management theories shows that university researches are to bring higher contribution to regional growth only when they are surrounded by a business landscape with sufficient demand for innovation, connected by a functioning bridge [8, 9].

Currently, the analysis reveals an “innovation productivity paradox”. The constant high output of academic papers suggests that the Uzbekistan landscape is dominated by quantitative academic entrepreneurship, instead of fast-growing commercialized innovations. In the complete institutional landscape, the parameters of joint university-startup ventures remain statistically insignificant. This outcome is of paramount importance. It shows the subject of academic growth, so there is a high number of scientific publications, high quantity of state funding inflow, which is, literally, associated with marginal territorial commercialization growth, and a lower proportion of implemented scientific solutions in the real digital economy.

According to insignificant cooperation, a high concentration of researches does not necessarily drive economic growth. In ever-developing economies, this demonstrates nothing but academic activity isolated from market needs. The "missing

chain" is identified as the severe lack of specialized Technology Transfer Offices (TTOs) and strategic resource orchestrators within the universities. This parameter reflects just fragmented sectors with low potential to grow exponentially, meaning that they are less innovative in practice. Focusing on the raw number of publications does not simply explain regional technological growth. This clearly shows that academic researches, throughout the given period, do not play a main role in stimulating the growth of the startup ecosystem without strategic intermediary institutions.

## 5. Discussion

The empirical finding of the study reveals structural variation between conventional understandings about regional economic development and the reality of the Resource-Based View (RBV) application. Meanwhile, the analysis proves that there is a catch-up dynamic in policy formulation, exposing a “commercialization paradox”. In terms of national growth, the continuing lack of integration points to the heavy concentration of low-productivity necessity-driven publication rather than high-value innovation commercialization [14]. Moreover, the isolation between the density of university researches and the startup ecosystem testifies to a critical shortage of regional “absorptive capacity” [8]. On top of that, industries are not using academic discoveries effectively, which could otherwise generate sustained competitive advantage [2].

To eliminate these structural bottlenecks and fix the missing chain in the commercialization process, the following findings-based recommendations are proposed for the realization of the “Digital Uzbekistan - 2030” strategy:

a) Transitioning from a quantity-based approach towards quality-based strategic orchestration: The constant isolated metrics of universities dictate that policies focused on modernization should slow down in chasing volume-based publication goals. Instead, there is a necessity of adopting a localized strategic resource management approach. The government and universities must set a priority on political incentives that grant researchers autonomy and support in commercializing their intellectual property. This moves the sector from subsistence academia towards value innovation.

b) Prioritizing the 'Organization' of Resources via Intermediary Hubs: As the VRIO analysis revealed, the overall growth of innovation is halted by poor organizational capture. The “Digital Uzbekistan - 2030” strategy should gain more advantage from this, disproportionally directing governmental investment toward creating highly specialized, autonomous Technology Transfer Offices (TTOs) within universities. These offices act as the missing chain, making digital logistics and commercialization modernized, which helps to overcome structural isolation and translates academic language into startup viability.

c) Readjusting intellectual capital with regional startup landscapes: The failure of the concept of passive interaction necessitates cardinal changes in innovation policy. Instead of relying on the results of raw publications, the strategy should focus on actively connecting local startups with academic researchers. The funding should be aimed at creating special joint-venture grants, fostering regional business to meet their immediate operational needs by utilizing the unique resources hidden within academic laboratories.

These growth patterns are of paramount importance. If the new policies, along with a new vision of modernization and transformation of Uzbekistan's academic management, start to give their results, the normal distribution of regional innovation can be achieved. Conversely, if universities remain focused purely on the creation of research without the strategic management required for its commercialization, they will benefit much less due to outdated productive mechanisms.

## 6. Conclusion

This study verifies that there is conditional integration potential across the Uzbekistan innovation ecosystem; however, it reveals a systematic “innovation productivity paradox”. Against all expectations, the sheer expansion of university researches and academic publications is negatively correlated with actual startup technological leaps, proving the dominance of isolated academic practices over true commercialized innovation. Besides, the insufficient interaction of university laboratories with the emerging startup sector indicates that the region has a critical deficit in “absorptive capacity” and lacks the vital “missing chain” of technology transfer.

To effectively implement the “Digital Uzbekistan - 2030” strategy, there is a strict need to shift from the quantity-based expansion of research papers towards quality-based strategic resource management at the university level. Utilizing the Resource-Based View, it is clear that while academic resources are valuable, they lack the necessary organization. Establishing robust Technology Transfer Offices, optimizing the VRIO framework within higher education, and fostering targeted joint-ventures are urgently needed to transform universities from isolated research centers into true engines of the digital economy and sustained competitive advantage.

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