

COOPERATION WITH THE BUSINESS ENVIRONMENT AS A FACTOR SHAPING THE UNIVERSITY IMAGE

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Purpose: The aim of this article is to identify and systematize the mechanisms through which collaboration between universities and the business environment shapes the institutional image. The author attempts to answer the question of which forms of relations with the economic environment most effectively build academic brand equity.

Design/methodology/approach: The article is a literature review. It employs the method of critical analysis of literature in the fields of university management, educational marketing, and the concept of the entrepreneurial university. The analysis covers publications indexed in Scopus, Web of Science, and BazEkon databases from 2014 to 2024, allowing for the capture of current dynamics in university image changes in the era of Economy 4.0. An exception was made for fundamental theoretical works which, due to their paradigmatic nature, constitute an essential reference point for contemporary research on the entrepreneurial university. This approach enabled the confrontation of classical theoretical assumptions with the latest scientific considerations regarding prestige transfer and academic brand building.

Findings: The study demonstrates that a university's image is shaped by the synergy of three perspectives: resource-based, relational, and institutional. A key mechanism for reputation building is the transfer of prestige. The analysis confirmed the existence of a positive feedback loop: an established reputation facilitates the acquisition of strategic investors, creating a self-reinforcing mechanism for market prestige growth. It is through direct interactions between the worlds of science and business that a real transfer of brand value occurs. This emphasizes that a university's image is not merely the result of signed agreements, but a derivative of the quality of developed relationships and trust.

Originality/value: The author proposes a model illustrating the impact of science-business collaboration on the university's image. The model assumes that collaboration with business does not automatically translate into a positive image; rather, the quality of the relationship is crucial, with the transfer of brand value being its most significant outcome.

Keywords: university image, entrepreneurial university, academic brand equity.

Category of the paper: research paper.

1. Introduction

The evolution of the role of higher education has led to a shift from the classical Humboldtian university model towards institutions deeply embedded in the socio-economic environment. A key element of this transformation is the so-called "third mission" of the university, which involves the active transfer of knowledge and technology to the economy (Compagnucci, Spigarelli, 2020). In an era of increasing competition in the educational market, collaboration with business has ceased to be the sole domain of technical sciences, becoming a strategic tool for building the identity and competitive advantage of every modern higher education institution.

Despite the growing number of studies on the economic aspects of science-business relations, there is still a need to systematize knowledge regarding the impact of these links on the academic brand. A university's image is an intangible asset that directly influences candidates' decisions, student loyalty, and the institution's credibility in the eyes of investors and ranking agencies. The research problem of this article is to determine the nature and mechanisms of the impact of industry relations on the perception of the university by its key stakeholders. Accordingly, the following research questions have been formulated:

- RQ1: Which forms of university-business collaboration are most frequently identified in the literature as key determinants of building a modern university image?
- RQ2: How do prestige transfer mechanisms and the attributes of the entrepreneurial university affect academic brand equity?
- RQ3: Does the literature analysis confirm the existence of a positive feedback loop between a university's established reputation and its ability to acquire strategic business partners?

The aim of this article is to systematize current theoretical findings and to develop a conceptual model that illustrates the impact of science and business collaboration on the university's image. The analysis of the university's image in the context of business collaboration was conducted based on three perspectives: resource-based, relational, and institutional. This approach allowed for a multi-dimensional treatment of the phenomenon under discussion.

2. Research Methodology

This study is a systematic literature review. The literature selection process was conducted systematically, covering publications indexed in key bibliographic databases: Scopus, Web of Science, and BazEkon. The choice of these databases was dictated by the need to include both

the global scientific discourse and the specific characteristics of the Polish higher education system. The use of these databases allowed for the selection of exclusively peer-reviewed scientific literature of high substantive standards.

The search process utilized keywords such as: university-industry collaboration, university image, entrepreneurial university, brand equity in higher education, and their Polish equivalents. The primary timeframe of the analysis covers the years 2014-2024, which allows for capturing the latest trends related to Economy 4.0 and the digital transformation of universities (Table 1). A conscious exception to this criterion was the inclusion of fundamental paradigmatic works (including those by B. Clark and H. Etzkowitz), which provide the essential theoretical foundation for contemporary higher education management models.

Table 1.
Criteria for the selection and screening of the literature kryteria doboru i selekcji literatury przedmiotu

Criterion	Description/Parameters
Databases	Scopus, Web of Science, BazEkon
Timeframe	2014-2024 (excluding fundamental theoretical works)
Language of publication	Polish, English
Keywords	university-industry collaboration, university image, entrepreneurial university, academic brand equity
Type of source	Scientific articles, monographs
Inclusion criteria	Direct correlation with the impact of external relations on the university's reputation or image
Exclusion criteria	Technical publications focusing solely on technology transfer without reference to branding or image aspects

Source: Own elaboration.

The literature selection process was conducted based on a multi-stage record verification procedure. An initial analysis of the selected bibliographic databases (Scopus, Web of Science, BazEkon) identified 264 publications meeting the keyword criteria. In the subsequent step, duplicates and texts that—despite the presence of keywords—focused solely on the technical aspects of technology transfer, without reference to image management or brand equity, were eliminated.

Through a critical analysis of titles and abstracts, a group of articles with the highest substantive potential was selected. The final selection, based on full-text analysis, citation indices, and journal prestige, resulted in the inclusion of 54 key items for in-depth analysis and citation. This selection process ensured the appropriate quality of the evidence and enabled the synthesis of the most representative views within the researched subject area.

3. From the "Ivory Tower" to the Entrepreneurial University: The Evolution of the Higher Education Model

The foundation of contemporary considerations regarding the relationship between science and the economy is the evolution of the university's role within the innovation system. The traditional division into teaching and research functions has become blurred in favor of the so-called "third mission," which imposes an obligation on higher education institutions (HEIs) to participate actively in socio-economic development (Etzkowitz, 2008; Abreu et al., 2016; Urdari et al., 2017). In this context, collaboration with business ceases to be merely a mechanism for knowledge transfer and becomes a key element of the strategy for building the university's identity and competitive advantage (Secundo et al., 2017). Consequently, the university's image is no longer constructed in isolation but within a dynamic interplay between business and the state (Kwiek, 2015; Benneworth et al., 2016; Aragonés-Beltrán et al., 2017; De La Torre et al., 2017; Mariani et al., 2018).

The application of the Triple Helix paradigm in image analysis reveals that the reputation of a modern university is not an autonomous value but a relational one. As indicated by Etzkowitz and Leydesdorff (2000); Etzkowitz (2003); Di Berardino, Corsi (2018), the university becomes an active link in an innovation system based on close interdependence between science, industry, and administration. In a marketing context, this signifies a transition from building a tradition-based image toward an image based on utility and market interdependence. The traditional linear model of "science – implementation" has been replaced by a spiral model (Bojar, Machnik-Słomka, 2014). The university moves away from the role of a passive knowledge provider and undertakes activities traditionally assigned to business, such as founding spin-off companies, thereby becoming an active economic partner (Mora et al., 2015). Such hybridization builds the image of the university as a responsive and flexible institution. The university is no longer perceived as an isolated "ivory tower" (Czakoń, 2019; Nakwa, Zawdie, 2016; Kapetanidou, Lee, 2017) and becomes an "innovation hub," which enhances its prestige as a socially useful institution (Puślecki, 2017). The university begins to be seen as a capital generator. Collaboration with business under state regulatory supervision creates a synergy effect, fostering the reputation of an "engaged university" (Bryła, 2013). This image is particularly potent in relations with local governments and communities, which can translate into brand stability. The knowledge flow between universities and firms further builds expert credibility.

The Triple Helix model is complemented in the literature by the concept of the entrepreneurial university, which has garnered significant interest from scholars and policymakers (e.g., Etzkowitz, Leydesdorff, 2000). The term "entrepreneurial university" was first used by Etzkowitz (1983), while the transition from a research university to an entrepreneurial one originated in the USA in the late 19th century (Etzkowitz, 2004;

Riviezzo, Napolitano, 2010). The Massachusetts Institute of Technology and Stanford University are early archetypes, being the first institutions to expand their traditional missions of teaching and research and pioneers in incorporating applied research of commercial significance into their programs. Furthermore, they began transferring knowledge to the non-academic environment and providing support for industry (Etzkowitz, 2003; Goethner, Wyrwich, 2019). Clark (1998) made a major contribution to popularizing the entrepreneurial university concept. According to his approach, the modern HEI is characterized by a proactive stance toward the market environment, manifested through the development of technology transfer centers and business incubators. The image of such an institution evolves toward an "agentic entity," capable of knowledge commercialization and innovation creation, which, in the eyes of stakeholders, signifies modernity and high pedagogical quality (Makarona, Kavoura, 2019). While the literature offers various ways of defining the entrepreneurial university (Clark, 2001; Abreu et al., 2016), all point toward the development of entrepreneurship in higher education. This direction of transformation raises numerous social, cultural, and managerial challenges, including the necessity of employing marketing strategies encompassing image and brand awareness, segmentation, targeting, and promotional strategies (Sułkowski, Seliga, 2016).

In this context, the classical Triple Helix is insufficient and requires supplementation with a fourth element: society and the media (Bojar, 2014; Morawska-Jancelewicz, 2016; Carayannis et al., 2015; Carayannis, Rakhmatullin, 2014). The essence of the Quadruple Helix model is its influence on shaping a knowledge-based society. The links between the three helices – university, government, and industry – generate new knowledge, technologies, products, and services that meet societal needs. Moving further, one must also account for the natural environment and sustainable development, leading to the Quintuple Helix model. In this framework, the functioning and outcomes of a university must be viewed through a broad socio-economic lens. Consequently, universities cannot ignore their own image; it must reflect their commitment to solving global problems, becoming a strategic element in managing a modern scientific unit.

Nevertheless, the Triple Helix perspective remains the starting point for considerations on the contemporary role of the university, providing an understanding of the structural framework of science-business collaboration. This model is evolving toward the university as a catalyst for innovation rather than just a partner for business environment institutions. Thus, the university's image is built through its capacity for hybridization – the merging of academic and economic goals without losing its identity. However, a full diagnosis of the impact of relations with the economic environment and public administration on the image of an HEI requires a more detailed categorization. The literature of the last decade reveals an evolution in the perception of this impact, which is worth analyzing through three dominant perspectives: resource-based, relational, and institutional.

While the helix model describes macrosocial dynamics, the resource-based perspective focuses on the image benefits derived from possessing unique market competencies. The relational perspective shifts the focus of analysis to the psychological mechanism of prestige transfer between partners, while the institutional perspective embeds the university's reputation in the context of societal expectations and the fulfillment of the "third mission". Such a multidimensional approach allows for the precise mapping of factors that, within the Triple/Quadruple Helix model, tangibly translate into an increase in academic brand equity.

4. The Multidimensionality of University Image in Relations with Business

Within the resource-based perspective (Resource-Based View – RBV), a university's image is analyzed through the lens of unique resources that the institution acquires through its relationships with the business environment. According to this perspective, a higher education institution's competitive advantage is based on possessing resources that are rare, valuable, and difficult to imitate (Barney, 1991). Collaboration with business becomes a strategic mechanism for acquiring such assets, which directly translates into the perception of the university as a modern center for teaching and research (Nowacka, 2016). The literature emphasizes that the first pillar of image in this context is modern infrastructure. Sponsored laboratories, technology centers created jointly with industry, or the funding of specialized research equipment provide tangible evidence of the university's professionalism. In the eyes of prospective students and external partners, possessing advanced technological facilities builds an image of the university as a "wealthy" and stable institution that genuinely invests in the quality of education and research (Talar, 2019; Geryk, 2009).

The second pillar of the resource-based perspective is competency capital, identified with the unique know-how of business practitioners (Sujchaphong, 2015; Fazlagić, 2013). Integrating experts from the economy into didactic processes and conducting joint research projects enhance the university's credibility as an innovation leader. Within this perspective, the institutional image evolves from a theoretical academic center toward an advanced knowledge transfer platform, where the university's ability to solve real market problems becomes a reputational "resource" (Lafuente Ruiz de Sabando, 2017; Bryła, 2013). Consequently, the institution positions itself as an entity of high utility, which serves as a key quality signal for a wide range of stakeholders.

Within the relational perspective, a university's image is not defined by what the institution possesses, but rather by the network of connections in which it participates (Jaskólska, 2018). According to this view, an organization's reputation is a relational value, resulting from the quality and status of the partners (Wójcik, 2021; Gołata, Sojkin, 2020) with whom the university collaborates. In educational marketing literature, the key mechanism at play here is

prestige spillover. Through official partnerships with recognized business brands, the university "borrows" the attributes of these brands—such as professionalism, innovativeness, or market success (Piotrowska-Piątek, 2016)—which directly strengthens its own brand equity.

Relational analysis places particular emphasis on signalling theory. Joint projects with market leaders, certified educational paths under the patronage of well-known corporations, or the presence of practitioners on university boards serve as a clear signal of the institution's high quality to the environment (Osica, Niedzicki, 2019). Through the mechanism of academic co-branding, the university builds an image as an "elite partner," which reduces the uncertainty of prospective and current students regarding the value of the degree offered. In this view, image becomes a derivative of relational capital (Jaskólska, 2018), and the university's status in the academic hierarchy is closely linked to its ability to build lasting and credible strategic alliances with business.

The contemporary evolution of the institutional perspective extends beyond the classical model of science-business relations, leaning towards the previously mentioned Quadruple Helix concept. This model complements the existing structure with a fourth pillar: civil society and the media (Bryła, 2013). From an image-building perspective, this implies that the legitimization of university activities no longer occurs solely at the level of market efficiency but, above all, at the level of social acceptance and media visibility (DiMaggio, Powell, 1983). The introduction of the fourth helix significantly strengthens the institutional mechanism, transforming the university's image from a "closed laboratory" into an "open institution". Here, the media act as a catalyst—it is through digital and social communication channels that the successes of business collaboration are transmitted to the general public. In this view, the university's image becomes a public good, and its prestige depends on the ability to communicate its real-world impact on the quality of life of inhabitants or regional development (Sułkowski, 2016). Applying the Quadruple Helix perspective thus helps explain why universities increasingly engage in University Social Responsibility (USR) projects. Collaboration with business, presented in the media as an action for the common good (e.g., ecological innovations, educational programs for local communities), builds the most durable foundation for institutional reputation, making the university an indispensable entity enjoying social trust.

The literature emphasizes that a lack of visible links with business is currently perceived as an anachronism, which negatively affects the prestige of the institution. The institutional perspective indicates that a university's image as a "useful" entity is constructed by meeting external evaluation criteria, such as high positions in rankings (e.g., *Perspektywy*), where industry collaboration serves as a key performance indicator. In this context, the image is based on the attribution of modernity—a university engaged in relations with the economy is perceived as a responsible organization that tangibly impacts regional and national development (Geodecki, Hausner, 2023). Consequently, academic brand equity becomes a function of the

institution's ability to act as a proactive socio-economic actor (Jessop, 2018), which ultimately confirms its status as an indispensable institution within the innovation ecosystem.

The presented theoretical perspectives—resource-based, relational, and institutional—are not mutually exclusive but rather form a complementary picture of image-shaping mechanisms (Peszko, 2012). While resources build the foundation of professionalism and relations provide prestige, the institutional perspective grants social justification to the university's actions (Iwankiewicz-Rak, Shulgina, 2012). The synthesis of these interdependencies and their impact on the final academic brand equity is presented in the model below (Fig. 1). It illustrates the dynamic nature of reputation building, where image effects become the fuel for subsequent cycles of collaboration.

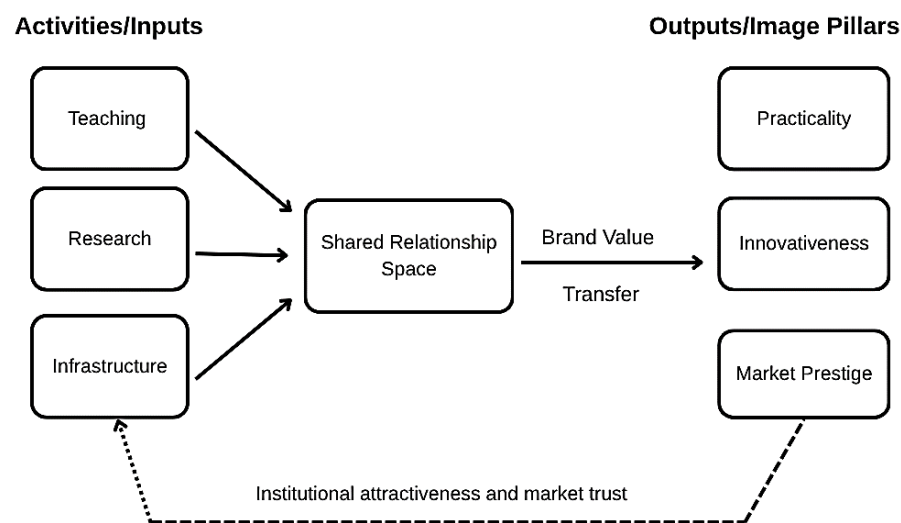


Figure 1. A model of university image building through synergy with business.

Source: Own elaboration.

A key assumption of the presented model is the recognition that formal collaboration (whether didactic or research-oriented) does not automatically translate into image. The central point of the framework is the "shared relationship space," which acts as a catalyst—it is precisely there, through direct interactions between the worlds of science and business, that a real transfer of brand value occurs. This emphasizes that a university's image is not merely the result of signed agreements, but a derivative of the quality of developed relationships and trust.

The model distinguishes three main components:

- Activities – focus on the substantive foundations of collaboration in the spheres of teaching (e.g., internships, commissioned courses), research (joint R&D projects), and infrastructure (laboratories, technology transfer centers).
- Brand Value Transfer – a link symbolizing the process in which the prestige and innovative attributes of the business partner are attributed to the university's brand.
- Reputational Effects (Image Pillars) – the target image dimensions, which include practicality, innovativeness, and market prestige.

The model is completed by a feedback loop. It illustrates that the developed market prestige becomes capital that facilitates the initiation of new activities in subsequent cycles. The essence of this mechanism consists of:

- Selection (Prestige Magnet): A high reputation ensures that enterprises themselves seek collaboration. In this arrangement, the university ceases to be a "supplicant" and becomes a partner selectively choosing market leaders for joint projects.
- Risk Reduction: A strong image of a modern and efficiently managed unit lowers so-called business transactional uncertainty. Companies are more willing to invest in research and development (R&D) at universities that enjoy social trust and a reputation as professional partners.
- Strengthening Relational Capital: Satisfied business partners become natural "ambassadors" for the university. Their positive recommendations attract not only further projects but also new students, which directly feeds back into the teaching area.

Through such a loop, the model acquires a circular character, where reputational success becomes the fuel for the university's further substantive development. Collaboration with business is not a one-time benefit, but a strategic flywheel for the institution.

5. Relationship Marketing as a Tool for Strategic Academic Brand Management

The modern university moves beyond traditional transactional marketing (focused on "selling" a degree program) toward relationship marketing. In this strategic approach, the objective is not a one-time contract, but the construction of lasting bonds with the business environment, which translate into the stability of the academic brand.

In the academic context, relationship marketing is typically defined through the lens of strategy and values. In his model, Ch. Grönroos (1984) demonstrated that service quality is an essential and integral part of marketing strategy. This concept allows for the inclusion of factors determining customer-perceived quality, such as: professionalism and mastery, attitude and behavior, accessibility and flexibility, reliability and trustworthiness, a recovery system, as well as reputation and integrity. In this context, a university's relationship marketing is the process of identifying, establishing, maintaining, and strengthening relations with stakeholders (students, business, the social environment), so that the goals of all parties are achieved through mutual exchange and the fulfillment of promises (Jonas, 2016). This concept posits that marketing, understood as relationship management, should be an activity integrated with the entire organization and its network of contacts. Consequently, the key resource of a university brand is not its product offering, but its network of connections, which generates unique value for market partners (Gummesson, 2002).

Modern university brand management is no longer merely about promoting infrastructure or educational offerings, but about cultivating a "shared relationship space". Trust between the scientist and the entrepreneur becomes the guarantor of brand authenticity (Bryła, 2013). Relationship marketing allows for the integration of business into the university's internal processes. When a company co-creates a degree program, it becomes part of the academic brand, which radically enhances its market prestige.

To bridge the gap between these conceptual frameworks and managerial practice, it is essential to implement concrete mechanisms for monitoring relationship quality. In this context, the following metrics are proposed: the Stakeholder Engagement Index (SEI), which measures the depth of joint R&D interactions; the Partner Retention Rate, reflecting the stability of business cooperation; and Knowledge Transfer Efficiency, calculated as the ratio of joint intellectual property outputs to collaborative agreements. Furthermore, systematic survey research among key stakeholders and in-depth interviews (IDI) with business partners prove to be highly helpful in this process. These tools allow for a qualitative assessment of trust and the identification of subtle factors shaping the university's image that often elude quantitative metrics alone.

The key management tool here is the feedback mechanism. Business partners cease to be mere external entities and become brand advocates for the university, representing the most effective and cost-efficient form of building credibility in the eyes of prospective students and the social environment (Wańkowski, 2015). The implementation of relationship marketing thus allows the university to transition from a "market-responsive" model to a "market-co-creating" model. This also signifies a departure from the "advertising-recruitment" scheme. The university builds brand value through long-term interactions with stakeholders (students, companies, alumni). Consequently, the way the university manages its resources, relationships, and institutional status to create a coherent image becomes crucial. Building a network of connections with recognized business partners acts as a "quality certificate" for the university, increasing its credibility in the educational market. As a result, the academic brand gains a unique characteristic—it becomes resilient to temporary economic fluctuations, as its strength is rooted in a network of stable economic ties.

6. Discussion and Summary

The analysis of the literature from the last decade confirms that the image of a modern university is inextricably linked to its activity within the economic environment. However, the results of this review suggest the existence of significant tensions between the "entrepreneurial university" paradigm and traditional academic values. The scholarly discourse increasingly addresses concerns regarding so-called "academic capitalism", which may lead to

the instrumentalization of science and the potential loss of the university's image as an independent arbiter of truth.

It is worth noting that while the resource-based and relational perspectives emphasize the image benefits derived from market efficiency, the institutional perspective imposes an obligation on the university to maintain a balance between commercialization and public service. A key challenge for relationship marketing strategies remains managing the brand such that the transfer of prestige from business partners does not overshadow the institution's research autonomy. This analysis indicates that the strongest and most stable images are built by those entities capable of hybridizing their goals—presenting themselves as modern "innovation hubs" while upholding high standards of academic ethos.

The conducted systematic literature review has allowed for the formulation of answers to the research questions and the development of a model for science-business collaboration. It has been demonstrated that a university's image is shaped by the synergy of three perspectives: resource-based, relational, and institutional. The key mechanism for reputation building is the transfer of prestige. The analysis confirmed the existence of a positive feedback loop, where an established reputation facilitates the acquisition of strategic investors, creating a self-reinforcing mechanism for market prestige growth. This article organizes knowledge on the intangible consequences of science-business collaboration, providing a theoretical foundation for further analysis. In the next stage of this research, an attempt will be made to empirically verify the developed model. Planned studies will focus on analyzing the correlation strength between specific forms of collaboration and perceived academic brand equity in the eyes of students and business representatives. Future research should also focus on verifying the proposed model in specific sectors, such as humanistic universities, where the mechanisms of brand value transfer may take different forms than in the technical sciences.

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