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Document Version

Accepted author manuscript

Published in:

International Journal of Emerging Markets

DOI:

[10.1108/IJOEM-09-2021-1517](https://doi.org/10.1108/IJOEM-09-2021-1517)

Publication date:

2024

License

Unspecified

Citation for published version (APA):

Minbaeva, D., & Minbayev, B. O. (2024). Commodification of Academic Research in Emerging Countries. *International Journal of Emerging Markets*. <https://doi.org/10.1108/IJOEM-09-2021-1517>

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Download date: 20. Jul. 2024



COMMODIFICATION OF ACADEMIC RESEARCH IN EMERGING COUNTRIES

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Forthcoming in the International Journal of Emerging Markets

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Abstract

Purpose: In this paper we explore potential barriers for commodification of academic research in emerging countries.

Design/methodology/approach: We carried out an exploratory study employing a mixed-method sequential exploratory design. Initially, qualitative interviews were performed to identify cognitive, structural, and ideological barriers associated with commodification. Subsequently, we administered a survey at three universities in Kazakhstan to gather quantitative data. The quantitative insights served to complement our qualitative findings and facilitate the interpretation of the observed patterns within the broader population.

Findings: We found that a too rapid shift toward commercialization exacerbated concerns among faculty members and created obstacles to commodification. The obstacles identified through inductive clustering of themes from exploratory qualitative interviews were grouped into three intentionally broad categories: cognitive, structural, and ideological barriers. We argue that in emerging economies, the path to commodifying academic research should start with developing local infrastructure to address identified structural, cognitive, and ideological barriers. This, in turn, will lead to more successful commercialization and redefine the role of academics in society.

Originality: This study represents one of the few endeavors into exploring commodification within the context of emerging economies. In recent decades, universities have faced substantial pressures to commodify academic research. While there has been a significant volume of research discussing and documenting the success of commodification in developed country universities, those in emerging economies have faced similar pressures without achieving comparable success. This paper delves into the reasons why.

Keywords: emerging markets, commodification; academic knowledge

INTRODUCTION

In recent decades, universities in developed countries have faced considerable pressure to commodify academic research (Kauppinen, 2014; Ghasemi and Yousefikhah, 2022; Radder, 2022). The exclusive focus on knowledge creation and Level 1 learning (the traditional task of a university) as the primary objectives has gradually waned (Noack and Jacobsen, 2021). This shifting landscape has forced universities to adapt and adopt a new mission as they transition into hubs of innovation. This transformation is more than just a change in academic direction. It represents a profound cultural shift that aims to mold universities into institutions embodying the traits of enterprises, necessitating a significant transformation in the conditions under which knowledge production occurs (Holmwood and Marcuello Servos, 2019).

For emerging economies, these expectations have become even more pressing (McMullen *et al.*, 2002; Yang, 2006; Buchanan, 2014). International policymakers, such as the EU, the OECD, and the World Bank, share a common view regarding the importance of commodifying the knowledge produced by higher-education institutions. They see this commodification as a necessary step toward realizing a knowledge-based economy, which will enable emerging markets to equip themselves with the highly skilled human capital necessary to effectively compete in the global market. For the governments of emerging countries, the commodification of knowledge is also a top priority. They are making substantial investments in the transformation of their higher-education systems and placing significant emphasis on the much-needed shift towards knowledge-based economies (Cloete *et al.*, 2006; Yang, 2006).

However, despite the continuous push from international policymakers, the commodification of knowledge remains an unresolved issue for many emerging economies. This is partly due to the prevalent focus of governments in these economies on placing a significant emphasis on indicators of commercialization, rather than fostering meaningful engagement between higher education institutions and potential knowledge users (OECD, 2017: 32). Moreover, at the university level, there continues to be a predominant emphasis on the commercialization of education itself, primarily through fee-based educational programs. Meanwhile, the research-related aspects of commodification often receive less attention or tend to be largely overlooked.

The purpose of this paper is to explore potential barriers for commodification of academic research in emerging countries. In the absence of research on commodification in emerging markets, we engage in an exploratory study using a mixed-method sequential exploratory design (Creswell, 2003), characterized by the collection and analysis of qualitative (or quantitative) data, followed by the collection and analysis of quantitative (or qualitative) data. Our analysis identifies three distinct clusters of obstacles - cognitive, structural, and ideological

- that impede the commodification of knowledge due to the rapid pursuit of the commercialization agenda within universities.

The contribution of this paper is twofold. First, we found that in emerging countries, the rapid shift towards commercialization, driven by institutional pressures, undermines the essence of commodification—the transformation of relationships between higher education and society. We contend that the commodification of knowledge resulting from academic production should be viewed as qualitatively distinct from commercialization, which involves the conversion of knowledge into economic value. Second, we use the empirical context of the Republic of Kazakhstan, a country which is often overlooked and rarely studied in the literature on emerging markets. However, the context is very interesting, as on the surface, there has been some progress driven mainly by significant investment from international organizations and the local government. However, the efforts have been unsustainable as they did not lead to actual, tangible outcomes. We offer multiple implications for policymakers that would help approach the challenge of commodification of academic research in emerging markets more effectively.

The paper is structured as follows. First, we provide definitions of the commodification of knowledge and discuss the theoretical background for this study. Then, we introduce the methods and the empirical context of our study. After presenting these results, we discuss the implications of our study, with a focus on the policy implications.

COMMODIFICATION OF KNOWLEDGE

Broadly defined, commodification refers to “the social process whereby a person or thing becomes understood as a ‘mere thing,’ entirely separate from people and relations that give it meaning” (Brown, 2010, p. 160). The commodification of knowledge is defined as “the transformation of relationships, formerly untainted by commerce, into commercial relations, relationships of buying and selling” (Jacob, 2003, p. 128). This transformation extends to various forms of knowledge that were once considered part of the open scientific realm but have now been “swallowed up by exclusive appropriation and have consequently become the objects of financial transactions in markets” (Corrat and Weinstein, 2012, p. 248).

In higher institutions, the commodification of knowledge created through academic research has been extensively discussed (see Kauppinen, 2014 for a review; also Ghasemi and Yousefikhah, 2022; Radder, 2022). In this literature, researchers discuss two modes of knowledge commodification. The first one refers to commodified educational products, such as executive MBA, DBA, and customized educational

programs (see Yang, 2006, for a review of commodification of education in China). This mode of commodification perceives students as customers "whose 'needs and wants... [are placed] at the center of organizational focus and strategy" (Sappey, 2005: 496).

The second mode, which is the focus of this paper, pertains to the commodification of knowledge produced by academic research. As Kauppinen (2014) observes, this mode is more complex and requires a more nuanced view, as "this category *in turn* refers to commercialization" (p. 401; emphasis added). The latter is defined as "the pursuit of profit by academic institutions through selling the expertise of their researchers and the results of their inquiries" (Radder, 2010: 4). Although the two terms - commodification and commercialization - are interlinked and closely related in practice (Pankova and Khaldeeva, 2017), they are conceptually different. As Kauppinen (2014) explains, research articles, books, and reports produced by researchers do not have a direct economic value, neither for the researchers nor for the readers. The outcomes of academic research are pseudo-commodities (Shaw, 1975; Kauppinen, 2014). These pseudo-commodities can potentially be translated into an economic good, such as a patent or a startup firm, that, under certain conditions, can be appropriated and turned into a source of revenue. Commercialization of knowledge may only take place when a direct exchange value for knowledge is established.

Importantly, commodification and commercialization are inseparable, and their relationship can be described as a 'chicken and egg situation.' Without commodification, the discussion of the commercialization of knowledge quickly shifts towards "the legal and institutional frameworks governing the production, circulation, and use of knowledge. Intellectual property systems lie at the center of this framework" (Corrat and Weinstein, 2012, p. 268). On the other hand, institutional pressures for commercialization transform universities into "knowledge markets" (Radder, 2019: 92) and urge them to invest in building broader engagement between higher education and the potential users of its knowledge. As Jacob (2003) suggested, "commodification in the context of scientific knowledge can be described as a fundamental reorganization of the university as an organization, as well as *a reconstruction of the role* of the academic in the economy" (p. 132, emphasis added). In summary, in higher education, the commodification and commercialization of academic research are two indispensable conditions for enabling innovation at the interfaces between universities and their business partners.

Commodification in emerging markets

Emerging countries have been advised to swiftly transition towards comprehensive commodification of knowledge (May, 2006). Under institutional pressures from both local governments and international organizations, many universities have exclusively focused on a broader agenda of commercialization, often overlooking the need for the "fundamental

reorganization" and "reconstruction of the role" (as mentioned earlier) required for commodification processes. This is happening because universities in emerging countries are particularly exposed to strong pressures of coercive isomorphism, which result "from both formal and informal pressures exerted on organizations by other organizations upon which they are dependent and by cultural expectations in the society within which organizations function" (DiMaggio & Powell, 1991, p. 67). Furthermore, given the absence of institutional frameworks, many universities in emerging countries engage in mimetic processes (DiMaggio and Powell, 1991) and adopt standard solutions that have already been successfully used by universities in developed countries. For example, business schools in emerging markets often replicate models advanced by "trendsetting" organizations, such as Ivy League universities in the USA or top-tier business schools in Europe. A rapid shift towards commercialization is also partly influenced by normative isomorphism, which occurs when practices are considered "normal" (i.e., accepted) in the environment and result from professionalization. Examples include triple accreditation in European business schools or the "star system" of distinguished professors in the USA (Lincoln, 1998).

While the rapid shift towards commercialization may be unproblematic in developed countries, given their established research infrastructures and solid institutional frameworks, the situation in emerging countries is further accentuated by the contextual challenges associated with the absence of national research infrastructures for the commodification of knowledge. This challenge is especially prominent in many "new frontier" emerging economies, such as Kazakhstan, where the greatest hurdle lies in the need to simultaneously revise historical assumptions about the role of universities in societies, reorganize the universities, and create new research infrastructures for the commodification of knowledge.

In this paper, we argue that in emerging countries, a concerning trend is emerging, where there is a growing emphasis on commercialization, leading to a reduction of academic knowledge to a format centered on establishing a direct exchange value. This approach undermines the true essence of commodification – the transformation of relationships between higher education and society. Commodification serves as an intermediary, bridging the gap between pure research and commercialization. Achieving this requires a well-developed institutional framework, robust infrastructure, and the preparedness of all involved parties. However, a prevalent issue arises when universities rush into commercialization without first establishing the prerequisites for successful commodification. This rush, especially in emerging economies, frequently leads to unsatisfactory outcomes and fails to fully realize the potential benefits of commodification. To illustrate and explore why the rapid shift to commercialization may be problematic, we undertake an exploratory study of the three largest universities in

Kazakhstan that have recently undergone the shift toward commercialization due to institutional pressures.

METHODOLOGY

To explore potential barriers to the commodification of knowledge in emerging countries, we employed a mixed-methods sequential exploratory design (Creswell, 2003; see Figure 1). In this study, priority was given to the qualitative study in terms of the timing of data collection and the generation of analytical content. Given the exploratory nature of this paper, the results were primarily derived from qualitative analysis, while the quantitative data were used to assist in interpreting the context-rich patterns identified in the qualitative phase and to determine the distribution of the phenomena in the general population (Morse, 1991; Morgan, 1998).

- INSERT FIGURE 1 AROUND HERE -

Empirical context

The empirical context for this study is the Republic of Kazakhstan. This country serves as a highly relevant empirical context for the study, as it represents the "new frontier" of emerging countries beyond BRICS, experiences a positive developmental trend, and demonstrates economic growth with a focus on research and innovation. However, the country remains relatively unknown, as it has been seldom investigated within the field of international management research.

When Kazakhstan was a part of the Soviet Union, universities were primarily responsible for education, while research and development, synonymous with science and technology, were anchored in the so-called "research-science institutes" (*nauchno-issledovatel'sky institut*, aka NII). NIIs held the main repository of commodified knowledge, largely due to their hosting of extensive research laboratories and experimentation facilities. The third pillar of Soviet Science and Technology was the Academy of Science establishments that were responsible for granting doctoral degrees, certifications, patenting, etc. All three pillars were financed by block grants from the central government. After Kazakhstan gained independence in 1991, universities, previously not central to the research landscape, began to play a more significant role alongside NIIs and the Academy of Science.

In 2020, there were 129 universities in Kazakhstan, including 33 state universities, 92 private institutions, and 4 foreign-owned branches. Ten universities were granted 'national institutions' status, entitling them to additional funding, greater autonomy, and responsibilities, including research and innovation. Kazakhstan has been investing in the quality of higher education (Massyrova et al., 2015). However, challenges such as outdated curricula, limited research

support, and the issue of 'brain drain' remain among the core issues that need to be addressed to further improve the quality of education.

We observed the presence of all three forms of institutional pressures mentioned earlier. In 2011, the enactment of the Law on Science provided a comprehensive framework for research and innovation, defining more precisely the research role of universities and facilitating the application processes for institutions seeking funding. The State Programme of Industrial-Innovative Development 2015-19 referred to the innovation sector as the strategic third sector for industrial development of Kazakhstan and put emphasis on innovation clusters and techno parks. In 2015, the Law on Commercialisation was introduced to enhance the role of higher education institutions in translating research outcomes into practice. This Law also enabled researchers to identify intellectual property from their research and claim incentives, including a share in the profits generated by patents and other forms of intellectual property rights. Additionally, this law provided the legal basis for the creation of profit-generating companies by universities. Already back in 2015, the OECD evaluated this law and observed excessive emphasis on commercializing intellectual property through patents, licenses, and spin-off companies, while neglecting the value of individual engagement between researchers and knowledge users. Two years later, in a review of national education policies, the OECD identified multiple challenges, including overly optimistic expectations for commercialization, underestimation of the power of broader engagement with knowledge users, non-optimized funding instruments, poorly developed local institutional support, and the absence of explicit and transparent policies for incentives and rewards related to research and innovation.

Although mimetic and normative pressures were present, their effects were less widespread. For example, Kazakhstan is formally involved in EU Horizon 2020, with only seven Kazakhstani researchers connected to international research environments (Jumakulov *et al.*, 2019). While some top business universities attempted to gain EQUIS accreditation, there are no internationally accredited universities yet. All top universities require international peer-reviewed publications from their faculty, but only a few allocate research budgets to support faculty publications.

There has been a positive upward trend in the total number of publications in Web of Science and Scopus journals from 2005. However, the output remains considerably low when normalized by population compared to other countries. This is attributed to low investment in R&D (0.17% of GDP), English language proficiency, and a lack of time for research at higher education institutions.

Our use of a single-country context obviously impacts the generalizability of our findings. On the other hand, the single-country focus allows us to keep macro-economic

factors constant and explore various micro-level determinants. We discuss the limitations to generalizability and implications for future research in the concluding section of the paper.

Data collection and analytical approach

Qualitative data. We collected qualitative data through exploratory, open-ended interviews with representatives of the Academy of Sciences of the Republic of Kazakhstan, as well as established thought leaders and experienced professors in various universities. Since we were aware of local apprehensions regarding management research in general and interviews in particular, we promised the respondents full anonymity. The interviews were conducted in both Russian and Kazakh. The authors' Kazakh descent facilitated access and encouraged participation. Voice recorders were not used, and we found that our interviewees were much more reserved in their statements if we took notes. Therefore, after each interview, the authors debriefed each other, recorded their observations, and then extracted the keywords.

Quantitative data. We collected quantitative data through a survey administered at the three largest universities in Kazakhstan. These universities were all of a similar age (around 90 years), comparable in size, and complementary in terms of academic disciplines. The management in all three universities places importance on international collaboration and encourages faculty to actively engage in research partnerships worldwide. There is an expectation for faculty to actively contribute to the academic community through publishing in international peer-reviewed journals. All three universities had established doctoral programs and made attempts to establish links between research and practice through a "Commercialization Office." For instance, one university established a Patent and Scientific Publications Office to provide informational support to university employees and students, as well as consulting services in the field of intellectual property protection. This office was also expected to support the patenting of intellectual property and sign license agreements. In other universities, research laboratories were established to facilitate collaboration with companies by providing the research infrastructure necessary for testing new products and prototypes. In other words, there were some initial attempts to establish infrastructure for the commodification of academic knowledge. However, in all three universities, these initiatives appeared more like "window dressing," as they primarily indicated compliance with the commercialization requirements from the Ministry. This was highlighted in the following answer to a survey question:

We have people responsible for these activities ... but nothing really takes off. It is all "on paper" (*dlya bumazhki*) ... no one really uses anything ...

The survey questions were formulated using the qualitative insights generated. At the beginning of the survey, we explained the meaning of commodification and how it differed from

commercialization. The survey was translated from English into Russian (and back-translated) and pilot-tested with native Russian speakers to ensure understanding.

Analytical approach. The findings from both the qualitative and quantitative studies were interpreted and integrated using an active categorization framework suggested by Grodal, Anteby, and Holm (2021). The framework describes a three-step categorization process that reflects our three-stage data collection process: (1) generating initial categories using data collected in stage 1 (qualitative), (2) refining tentative categories using the data collected in stage 2 (quantitative), and (3) stabilizing categories through common interpretation.

For qualitative data, following Gioia et al.'s (2012) methodology, we inductively generated 10 first-order codes in NVivo. Iteratively switching between contextual knowledge, existing theory, and data (abduction), we clustered the codes into three intentionally broad themes (see Figure 2 for visualization). In the absence of a theoretical framework, our goal is not to confirm or disconfirm any predetermined variables. Instead, our aim is to identify individual-level variables that, when matched and grouped together, form three loosely defined and intentionally broad themes labeled as barriers to the commodification of knowledge in the context of emerging countries.

- INSERT FIGURE 2 AROUND HERE -

To run the survey, we were granted access to selected groups within the faculty and student bodies of the three universities. We gathered 235 individual responses (see Table 1). The distribution of responses is organized around the generated codes and themes, as presented in Table 2. We also conducted a factor analysis of the survey questions to confirm the suggested grouping of the barriers mentioned above (for all, Cronbach's Alpha was above 0.69).

- INSERT TABLES 1 AND 2 AROUND HERE -

Clearly, our data collection faced threats to validity and limitations to generalization due to the difficulties associated with gathering attitudinal data in Kazakhstan (or similar countries; Voldnes, Grønhaug, and Sogn-Grundvåg, 2014). The data limitations are discussed at the end of the paper, along with suggestions for research that addresses these issues in the future.

RESULTS

We organize our results under the derived themes: cognitive, structural, and ideological barriers. The first cluster of barriers refers to the knowledge and understanding of the fundamentals of commodification and its implications for research and innovation. The second cluster assembles perceptions of the available institutional infrastructure, systems, and processes. We termed the third cluster "ideological" to reflect the overall beliefs about the role of universities and the understanding of knowledge as a public good.

- INSERT FIGURE 2 AND TABLE 2 AROUND HERE -

Cognitive barriers

Our interview respondents viewed commodification as a "*requirement of the new times*" – a phrase referring to the changes brought about by the market economy. However, they had no clear understanding of the reasons for or consequences of commodification. The majority of our qualitative respondents believed that potentially commodification could bring something good to individuals, universities, and society. They felt that it facilitated new research and enhanced the "*creation of useful knowledge*."

Of course, it [commodification] is needed. Why would we need science just for the sake of science? Science needs to influence the development of organizations.

Our survey respondents also regarded commodification as a trend that positively influenced research. 67% of the respondents agreed that "*dependence on commodification creates a push for new research*." In addition, 62% agreed that "*the distribution and use of useful knowledge is improved through increased commodification*."

Conversely, some individuals perceived commodification as a threat to conventional scientific goals. One of the interviewed professors explained:

Scientific knowledge is not easily commodified. Social norms and procedures that regulate the conduct of scientific research, and the very nature of knowledge, restrain the process of commodification, which, first of all, presupposes a tightening of external supervision over science.

Another faculty member added:

The danger lies in the loss of identity, in the fact that such substantial values as objective truth, personality development, high ideals, etc., will be forgotten.

In the survey, 56% of the respondents agreed that "*if researchers depend on the commodification of their research, their focus will not be on the development of science,*" and half of the respondents agreed that "*if researchers are dependent on the commodification of their research, their focus will not be on the public good.*" Additionally, 48% of the respondents agreed that "*commodification of knowledge is incompatible with the concept of 'independent research.'*" We found statistically significant differences between age groups and positions for all of these questions. As one respondent (a professor with a long tenure) stated:

One of the institutionalized myths about science is that the task of scientists is to transmit knowledge to the general public.

Furthermore, the respondents expressed concerns that the commodification of knowledge could undermine research and education. Specifically, 60% of the respondents agreed with the statement "*if our faculty uses more time for the commodification of knowledge, then less time will be spent on acquiring new knowledge necessary for providing education.*" Additionally, 57% of the respondents agreed that "*dependence on the success of commodification can lead to adverse effects in research.*" Our interviewees mentioned several potential effects, such as a diminished emphasis on fundamental research, reduced accessibility of research results for colleagues, and decreased public utility of scientific knowledge, among others.

Only a few interviewees perceived commodification positively as a potential means to finance public universities, but even those raised concerns about the lack of transparency regarding the use of funding from the commodification of knowledge. In the survey, 66% agreed with the statement "*if commodification can help reduce training costs and/or government spending on education, it is acceptable.*" Furthermore, 58% agreed with this statement: "*If the commodification of knowledge can become a source of income for universities, it is good.*" There were statistically significant differences between age groups ($p = 0.005$). In general, older respondents tended to agree more with the latter statement than younger respondents.

Structural barriers

Many of our respondents emphasized the heightened bureaucratic pressures resulting from the requirements for commodification.

Science becomes just work... The researchers themselves become accountable not to their peers, but to the administrators standing higher in the hierarchy and controlling the means [a reference to the distribution of funding].

Several participants named incentives as the primary barriers for commodification, expressing their concern that their salaries as scientists do not cover the costs of engaging in commodification endeavors:

I am not paid for the commodification. I am a scientist, and my job is to do research and publish it. That is what I am paid for.

The issues of patents and copyrights were ambiguous as well. Despite the fact that all three universities had a dedicated patent officer, not all understood the meaning of patents. In fact, 41% of the respondents agreed that "*patents and copyrights harm the development of knowledge.*" We found a significant difference in this regard between age groups ($p = 0.003$) and positions ($p = 0.005$). Furthermore, 63% of the respondents agreed with the statement: "*If researchers can profit from the sale of patent rights, they will hesitate to make their knowledge available to the public through open publication.*"

Ideological barriers

Our participants offered numerous reflections on the role of universities in society in general. Many of senior faculty members still reminisced about the "*old times*" (referring to the Soviet Union) when science had a "*good standing*" and commanded "*respect in society*". The demands for commodification and commercialization were viewed as something that "*came with capitalism*" and were seen as a consequence of "*compromised values*" (referring to the value of independent research):

The transformation of knowledge into a product with a price tag leads to a decisive revision of the traditional standards of research activities at all stages. It corrupts the production of knowledge.

On the other hand, our survey respondents, especially the younger ones, agreed that knowledge should not be confined to the ivory tower of academia. 88% of the respondents agreed that "*knowledge is a public good,*" and 81% agreed that "*the value of knowledge is in its use.*" In addition, 80% agreed that universities should be the driving force behind the transition to a knowledge-based economy.

Some respondents even claimed that the commodification of knowledge and the commercialization of education represented a "*new form of lack of freedom,*" impacting not only teachers, scientists, and students, but society as a whole. When striving to present scientifically grounded ideas for commodification, there is a risk of opting for oversimplified solutions and subjective explanations, driven by a desire to comply with direct political directives that may disregard the objective truth of the knowledge.

DISCUSSION

The advent of capitalism in post-socialist countries prompted academic researchers and educators to reconsider fundamental assumptions about their core objectives within the evolving social order (Massyrova *et al.*, 2015). The concept of the "third vision," prevalent in the West and employed as guiding principles in many European universities, remains relatively new and may even feel too unfamiliar for academics in emerging countries. Commodification was viewed by our respondents as both a 'mixed blessing'. On one hand, the respondents saw how commodification could lead to greater financial resources for universities. Closer collaboration between academia and industry was perceived as needed to foster a dynamic exchange of ideas, resources, and expertise, accelerating the pace of innovation and promoting economic growth. On the other hand, our respondents believed that the pursuit of commodification may divert academic focus away from pure research and fundamental knowledge exploration. Few interviewed academics felt that the pressures to commodify research may compromise academic freedom, leading researchers to prioritize marketable ideas over pure research. Overall, seasoned faculty members were more skeptical about the need for knowledge commodification because they feared that such activities could overshadow the intellectual value of knowledge production and its intrinsic quality. Among younger faculty, the concept of commodification has not been completely rejected, but some of them did not clearly understand why it should be a part of their responsibilities. However, the views of the very few faculty members who pursued their education abroad were markedly different. For them, commodification was seen as an integral part of knowledge production. During our interviews with these faculty members, they mentioned countries like Japan, South Korea, and China, citing their successes with commodification with admiration.

We observed some evidence of the presence of mimetic processes in which universities adopted standard solutions by replicating models advanced by 'trendsetting' countries. For example, we heard a few mentions of recent developments in the areas of nanotechnology and wind energy. However, when asked to specify, our respondents could not provide specific examples of industrial innovations based on these developments.

Our findings demonstrated that some of the barriers to commodification in emerging countries were similar to those identified in developed economies (as discussed, for example, by Ghasemi and Yousefikhah in 2022). In fact, the entire cluster of cognitive barriers resonated with the issues discussed in studies focused on developed countries (as seen in Radder's work from 2019). However, in contrast to developed countries, the lack of institutional infrastructure stood out as a prominent obstacle for emerging countries. Specifically, we found that the local infrastructure required to facilitate the commodification process within universities was lacking. While our

respondents expressed optimism regarding recent trends in support of commodification, they all agreed that substantial development of their local university's infrastructure, essential for commodification, was imperative.

Interestingly, following the coercive institutional pressures, in all three universities, the infrastructure for commercialization was set up relatively quickly, but the interviewed faculty referred to that part of university as “*external*” to the core knowledge generating activities. They often talked about it as “*we hired people to do that*” (referring to the commercialization officers) or “*there are few who work with patterns, but they are not involved in real research*”. This echoed findings by Belitski *et al.* (2019), who found that unlike their importance in developed countries, the “universities’ TTOs [technology transfer officers] are limited in their legal and resource ability to commercialize university research” (p.612).

To sum up, our results confirm that commodification poses a multifaceted challenge for academics in emerging economies. We find that an excessively swift transition towards commercialization exacerbates concerns among faculty members. We argue that while commodification and commercialization are intertwined, often likened to a chicken and egg scenario, in emerging economies, the journey should commence with a focus on commodification – a transformation of relationships between higher education and society. This transformation encompasses a comprehensive change and establishes local infrastructure that simultaneously tackles the identified structural, cognitive, and ideological barriers, ultimately resulting in a fundamental reorganization of the research infrastructure as well as a reconstruction of the role of the academic in society. Ultimately, successful commodification enables a smoother and more effective transition towards full-scale commercialization.

Future research directions

Given the exploratory nature of this study, it is essential to regard the findings as a source of inspiration rather than empirical confirmation. We hope to see subsequent research on this topic that expands upon the generated insights, both at theoretical and empirical levels. Future empirical research could potentially employ the survey questions developed in this paper (see Table 2) to increase the generalization of our findings. Building on our qualitative insights, scholars could consider conducting an experimental study that involves gathering longitudinal data after the introduction of various institutional initiatives aimed at promoting commodification. By implementing controlled interventions and tracking the outcomes over an extended period, valuable insights into the effectiveness and impacts of these initiatives on the identified commodification barriers can be obtained.

Future research should delve deeper into the effects of the identified ideological barriers in this paper, necessitating the development of more macro-level theories. For example, the

institutional-complexity perspective could serve as a valuable theoretical framework for comprehending the dilemmas uncovered by our research. In this regard, comparing the impact of ideological barriers on commodification in various emerging economies presents an intriguing research opportunity. The ideological barriers identified in this paper may be particularly influential in countries that have undergone a transition from centrally planned economies with strong political ideologies. In those countries, universities might still grapple with residual effects of centralized management of higher education, bureaucratic obstacles, and entrenched belief systems. In contrast, emerging countries labeled as part of the "next-11" (Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, South Korea, Turkey, and Vietnam) might exhibit fewer pronounced ideological barriers, as their emergence is primarily driven by economic growth and human capital potential. While they still may grapple with the absence of research infrastructure and slow institutional development, ideological hindrances might not be as prominent.

We hope that future research can address the limitations of this study, particularly those related to its empirical scope. This study concentrated solely on one country, Kazakhstan. For future research, it is crucial to broaden the investigation to include more studies from the Central Asia region and other emerging economies. We believe that while there may be some minor institutional differences, the findings are generalizable to all post-socialist countries. However, incorporating a diverse range of institutions, particularly those with foreign ownership or private capital, would enhance the comprehensiveness of the findings.

Furthermore, collecting a more extensive and balanced sample of responses from industry partners, academics, and students would have provided more valuable insights. By including a broader representation of stakeholders, we could have gained a more nuanced understanding of the complexities surrounding commodification in higher education.

Practical implications

Our findings carry numerous implications for policymakers. The focus that international institutions place on the matter of commodification and commercialization of knowledge is a positive step. Challenges emerge when this matter is approached with a narrow perspective. During the implementation, governments in emerging economies focus too much on commercialization outcomes, such as patents, spin-off companies, techno-parks, etc. In Kazakhstan, on the surface, there is significant progress (as indicated by the evaluation of actions implemented following the recommendations of the World Bank and OECD to the Kazakhstani government (OECD, 2017)). Indeed, laws have been enacted, and investments have been made.

However, when examining the actual outcomes, including commercialization, the impact has not been substantial. A review by the OECD (2017) revealed that out of 1,627 projects funded by the Science Grant Fund, only 3% were deemed relevant to identified industry needs. Similarly, out of the 785 recent applications to the Technology Commercialization Centre, only 33 projects were selected for funding, and just 25% of these were from higher education institutions (OECD, 2017).

The low level is not surprising, given the government's focus on indicators of commercialization (e.g. patents) and the low emphasis on personal engagement between knowledge producers, such as higher education institutions, and knowledge users, such as industry partners. Our exploratory study suggests that policy-making efforts should prioritize enhancing research infrastructure within universities to address the identified barriers to commodification - cognitive, structural, and ideological. By adopting this approach, trustworthy partnerships can be fostered between universities and industries at all levels. This is likely to lead to more meaningful and impactful outcomes in terms of knowledge transfer and potentially a higher level of commercialization.

Faculty development is another effective mechanism that, when coupled with infrastructure development, should facilitate the commodification of knowledge. None of the PhD programs in the universities we studied offered a doctoral course focused on the connections between academia and practice or the process of knowledge commodification. Due to the evident generational differences in how faculty perceive the *raison d'être* of knowledge commodification, it is essential to educate younger faculty members on the subjects mentioned above. They may not acquire this knowledge from their PhD supervisors or senior mentors. Therefore, targeted doctoral education programs should be implemented to ensure that the next generation of faculty members can effectively navigate the complexities of knowledge commodification.

While providing monetary incentives for faculty may create the desired short-term effect, we firmly believe that for the principles of commodification to truly embed themselves, generating knowledge that holds relevance for society must become an integral part of the job. Patents may be a way forward, but there is widespread disagreement and ambiguity on whether patenting and copyrighting are good for the development of new knowledge (Radder, 2019). Nevertheless, future research should incorporate individual-level theories, such as motivational theories, to study the effects of monetary incentives on commodification and ways of overcoming those effects.

Enhanced transparency concerning the utilization of funds generated by commodification is essential. This information can play a vital role in convincing skeptics, particularly the senior generation, while also offering relevant examples to those who do not oppose the ideas of

commodification but seek a clearer understanding of how they can benefit from engaging in commodification activities.

Corruption and mistrust of the government were only briefly mentioned by some participants, and more often, respondents were reluctant to discuss this topic. While there was some anecdotal evidence shared, illustrating potential misuse of governmental funds for commodification, no one was willing to provide specific details. Therefore, we did not have sufficient evidence to draw any conclusions around these issues. Nonetheless, the connection between higher education and the government is evidently rooted in the post-socialist legacy and, to some extent, mirrors a prevailing lack of trust within the social systems (Toleubayev *et al.*, 2010). The OECD recommends that universities in Kazakhstan "further develop the capacity to operate autonomously and address issues such as possible corruption that may hinder their progress. The country cannot wait, though, for 'ideal conditions' before it further enhances the autonomy of higher education: concrete decentralization measures can themselves build institutional capacity for self-governance. Yet at the same time, as they move to grant institutions more autonomy, the government and national funding agencies need to make certain that sound accountability and performance measures are in place" (2017: 166).

Considering further policy implications, there is a pressing need for coordinated efforts to develop universities' disseminative capacity - the organizational capability to effectively and efficiently disseminate knowledge, ideas, and innovations to external partners. Concurrently, efforts should focus on enhancing industries' absorptive capacity, particularly its first dimension - the ability to recognize the value of new, external knowledge (Minbaeva *et al.*, 2018). Overall, our study's findings clearly indicate that the connection between universities and industries in emerging economies remains inadequate, with scientific breakthroughs rarely translating into industrial innovation and new product development. Governments, especially Ministries of Higher Education need to encourage and support universities on their journey to commodification. However, as some of our respondents pointed out, "it takes two to tango." Industries continue to perceive universities primarily as providers of academic knowledge and rarely recognize their potential as a source of valuable commodified knowledge.

In conclusion, even though this study is exploratory in nature, we consider it to provide valuable insights into the reasons behind the challenges universities in emerging markets face when trying to commodify knowledge. In these emerging countries, knowledge has indeed transformed into a commodity, and the rapid shift towards commercialization, driven by significant institutional pressures, may have occurred too hastily. Moving forward, we advocate for a more balanced and contextually nuanced dialogue regarding the commodification and commercialization of knowledge.

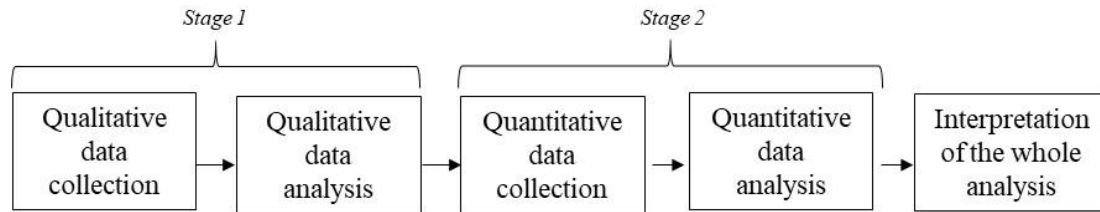
References

- Belitski, M., Aginskaja, A., & Marozau, R. (2019). "Commercializing university research in transition economies: Technology transfer offices or direct industrial funding?" *Research Policy*, 48(3), 601-615.
- Brown, M. (2010). "Coercion, Corruption, and politics in the commodification of academic science." In H. Radder (Ed.), *The commodification of academic research: Science and the modern university* (pp. 259-276). University of Pittsburgh Press.
- Buchanan, F.R. (2014). "Higher education in emerging markets: a comparative commentary." *Development and Learning in Organizations*, 28(1), 12-15.
- Cloete, N., Maassen, P., Fehnel, R., Moja, T., Gibbon, T., & Perold, H. (Eds.). (2006). *"Transformation in higher education: Global pressures and local realities."* Springer.
- Corrat, B., & Weinstein, O. (2012). "Patent regimes, firms and the commodification of knowledge." *Socio-Economic Review*, 10, 267-292.
- Creswell, J. (2003). *"Research design: Qualitative, quantitative and mixed methods approaches"* (2nd ed.). SAGE Publications.
- DiMaggio, P.J., & Powell, W.W. (1991). "The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields." In W.W. Powell & P.J. DiMaggio (Eds.), *The new institutionalism in organizational analysis*. University of Chicago Press.
- Finger, M., & Schuler, P. (Eds.). (2004). *"Poor people's knowledge: Promoting intellectual property in developing countries."* Washington, DC: World Bank.
- Ghasemi, R., & Yousefikhah, S. (2022). "Higher education policy and knowledge commodification in the 2000s." *Quarterly Journal of Research and Planning in Higher Education*, 28(2), 97-127.
- Gioia, D., Corley, K., & Hamilton, A. (2012). "Seeking qualitative rigor in inductive research: Notes on the Gioia Methodology." *Organization Research Methods*, 16, 15-31.
- Grodal, S., Anteby, M., & Holm, A. (2021). "Achieving rigor in qualitative analysis: The role of active categorization in theory building." *Academy of Management Review*, 46(3), 591-612.
- Holmwood, J., & Marcuello Servos, C. (2019). Challenges to public universities: Digitalisation, commodification and precarity. *Social Epistemology*, 33(4), 309-320.

- Jacob, M. (2003). "Rethinking science and commodifying knowledge." *Policy Futures in Education*, 1, 125-142.
- Jacob, M. (2009). "On commodification and the governance of academic research." *Minerva*, 47, 391-405.
- Jumakulov, Z., Ashirbekov, A., Sparks, J., & Sagintayeva, A. (2019). "Internationalizing research in Kazakhstan higher education: A case study of Kazakhstan's state program of industrial innovative development 2015 to 2019." *Journal of Studies in International Education*, 23(2), 234-247.
- Kauppinen, I. (2014). "Different meanings of 'knowledge as commodity' in the context of higher education." *Critical Sociology*, 40(3), 393-409.
- Lincoln, Y.S. (1998). "Commodification and contradiction in academic research." *Studies in Cultures, Organizations and Societies*, 4(2), 263-278.
- Massyrova, R., Tautenbaeva, A., Tussupova, A., Zhalalova, A., & Bissenbayeva, Z. (2015). "Changes in the higher education system of Kazakhstan." *Procedia-Social and Behavioral Sciences*, 185, 49-53.
- May, C. (2006). "Social limits to the commodification of knowledge: Ten years of TRIPs." *Journal of Institutional Economics*, 2(1), 91-108.
- McMullen, M., Mauch, J., & Donnorummo, D. (Eds.). (2002). *The Emerging Markets and Higher Education: Development and Sustainability*. Routledge Falmer.
- Minbaeva, D., Park, C., Vertinsky, I., & Cho, Y. (2018). "Disseminative capacity and knowledge acquisition from foreign partners in international joint ventures." *Journal of World Business*, 53(5), 712-724.
- Morgan, D. (1998). "Practical strategies for combining qualitative and quantitative methods: Application to health research." *Qualitative Health Research*, 8(3), 362-376.
- Morse, J. (1991). "Approaches to qualitative-quantitative methodological triangulation." *Nursing Research*, 40(1), 120-123.
- Noack, A., & Jacobsen, A. (2021). "Transfer scouts: from intermediation to co-constructors of new knowledge and technologies in Germany." *Research Policy*, 50(4), 1-13.

- OECD (2017). "Higher education in Kazakhstan." Retrieved from <https://www.oecd.org/countries/kazakhstan/higher-education-in-kazakhstan-2017-9789264268531-en.htm>.
- Pankova, N., & Khaldeeva, M. (2017). "Commodification of knowledge in the system of higher education." In *The European Proceedings of Social & Behavioural Sciences* (pp. 730-736).
- Radder, H. (Ed.). (2010). *The commodification of academic research: Science and the modern university*. University of Pittsburgh Press.
- Radder, H. (2019). *From commodification to the common good: Reconstructing science, technology, and society*. University of Pittsburgh Press.
- Radder, H. (2022). "How (Not) to Be Held Accountable in Research: The Case of the Dutch Integrity Code." *Accountability in Research: Policies and Quality Assurance*, 1–15.
- Shaw, M. (1975). *Marxism and Social Science*. London: Pluto.
- Toleubayev, K., Jansen, K., & van Huis, A. (2010). "Commodification of science and the production of public goods: Plant protection research in Kazakhstan." *Research Policy*, 39(3), 411-421.
- Voldnes, G., Grønhaug, K., & Sogn-Grundvåg, G. (2014). "Conducting Qualitative Research in Russia: Challenges and Advice." *Journal of East-West Business*, 20(3), 141-161.
- Yang, R. (2006). "The Commodification of Education and Its Effects on Developing Countries: A Focus on China." *Journal Fur Entwicklungspolitik*, vol. XXII, no. 4, pp. 52 - 69.

Figure 1. Research design



Source: Inspired by Creswell (2003)

Figure 2. Themes emerged from the qualitative analysis in NVivo.

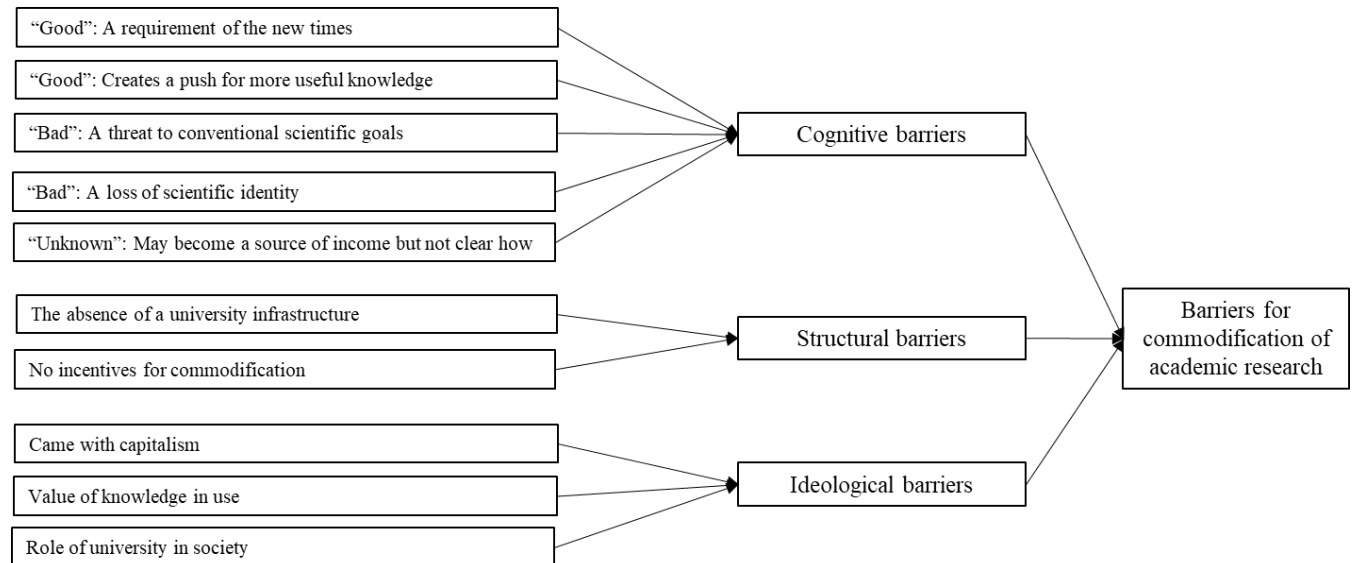


Table 1. Sample

| | |
|--------------|---|
| Universities | University A (technical): 105; University B (science): 94; University C (medical): 36 |
| Respondents | Bachelor students: 57; Master students: 60; PhD students: 21. Faculty members (not professors): 11; Professors: 25; others (e.g. teaching assistant): 61 |
| Age | Between 18 – 25: 123; 26- 30: 25; 31-40: 24; 41-50: 20; 51- 60: 26; above 60: 17 |

Table 2. Distribution of responses, in %

| Themes | Codes | Questions | Strongly disagree | Disagree | Partially disagree | Neither | Partially agree | Agree | Strongly agree |
|-------------|--|--|-------------------|----------|--------------------|---------|-----------------|--------|----------------|
| Cognitive | Good | Faculty at our university spend too much time on improving knowledge and too little time on using it | 2,5% | 8,5% | 14,85 | 19,14% | 24,2% | 22,12% | 8,5% |
| | | Faculty at our university should be more involved in business and connected with entrepreneurs | 6,3% | 25,9% | 11,4% | 14,4% | 25,3% | 13,6% | 2,5% |
| | | Dependence from commodification gives a push for new research | 1,7% | 8% | 2,9% | 20% | 32,3% | 26,3% | 8,5% |
| | | The distribution and use of useful knowledge is improved through increased commodification | 2,1% | 5,1% | 13,6% | 14,8% | 25,5% | 31% | 7,6% |
| | Bad | Dependence on the success of commodification can lead to adverse effects in research. | 3,8% | 11,4% | 8,5% | 19,5% | 30,2% | 19,5% | 6,8% |
| | | Commodification of knowledge is incompatible with the concept of "independent research". | 1,2% | 14,8% | 5,1% | 31% | 18,2% | 23,4% | 5,9% |
| | | If researchers can profit from the sale of patent rights, they will hesitate to make their knowledge available to the public through open publication. | 1,7% | 11% | 7,2% | 17% | 20% | 32,3% | 10,6% |
| | | Our faculty should spend more time on research. | 2,12% | 2,9% | 8,9% | 10,6% | 26,38% | 28,93% | 20,42% |
| | Unknown | Our faculty should spend more time on providing education. | 2,12% | 2,9% | 5,9% | 5,9% | 26,38% | 37,44% | 19,14% |
| | | If the commodification of knowledge can become a source of income for universities, commodification is good. | 5,9% | 13,1% | 3,8% | 19,5% | 18,2% | 34% | 4,6% |
| | | If commodification can help reduce training costs and / or government spending on education, commodification is acceptable | 1,2% | 8% | 6,3% | 17,8% | 18,2% | 37% | 11% |
| | | If our faculty use more time for the commodification of knowledge, then less time will be spent on acquiring new knowledge necessary for providing education | 0% | 8% | 5,9% | 17,4% | 31,4% | 29,3% | 7,6% |
| | | If researchers depend on the commodification of their research, their focus will not be on the development of science. | 1,7% | 11% | 11% | 20,4% | 29,3% | 19,1% | 7,2% |
| | If researchers are dependent on the commodification of their research, their focus will not be on the public good. | 6,3% | 13,6% | 7,2% | 22,5% | 20,2% | 23,4% | 6,3% | |
| Structural | Infrastructure | Increasing the organizational infrastructure of the university for the commodification of knowledge is a huge need. | 5,1% | 5,1% | 3,8% | 20,8% | 29,7% | 24,25% | 11% |
| | Incentives | Faculty of our university should be allowed to protect their created knowledge through patenting and copyright. | 5,9% | 1,7% | 5,5% | 7,2% | 14,8% | 38,7% | 25,9% |
| | | Patenting and copyright should be encouraged. | 4,2% | 2,9% | 2,9% | 13,6% | 12,7% | 28,9% | 34,4% |
| | | Patents and copyrights harm the development of knowledge. | 14% | 36,5% | 8,5% | 17,8% | 10,2% | 7,6% | 5,1% |
| | | Patenting and copyright on knowledge tend to make knowledge more of a private good than a public one. | 5,5% | 20,8% | 4,2% | 15,3% | 26,8% | 23,4% | 3,8% |
| Ideological | Value in use | Knowledge is a public good. | 4,2% | 0% | 1,2% | 6,8% | 8,9% | 24,25% | 54,46% |
| | | The value of knowledge is in its use. | 6,3% | 2,9% | 2,9% | 6,8% | 14,04% | 29,7% | 37,02% |
| | Role of university | Universities should become the main driving force behind the transition to a knowledge-based economy. | 5,1% | 0,8% | 7,2% | 6,8% | 17,02% | 41,27% | 21,27% |