

The Influence Factor of Regional Policies and Intellectual Property Policies on University-Enterprise Knowledge Transfer: A Conceptual Paper

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ABSTRACT

In order to have a comprehensive understanding of knowledge transfer between universities and enterprises, this paper aims to explore the importance of the influencing factors of knowledge transfer between universities and enterprises, and focuses on the influence of two external factors, regional policies and intellectual property policies, on knowledge transfer. This paper aims to recommend a conceptual framework to present the potential influencing factors of knowledge transfer activities represented by university-enterprise collaboration, so as to conduct empirical tests in future research. By summarizing previous research, the author clarifies the concepts among knowledge transfer, regional policies, and intellectual property policies, as well as the relationships among these concepts. In the research on the influencing factors of knowledge transfer, combining regional policies and intellectual property policies for discussion is an important means to study the external influencing factors of university-enterprise knowledge transfer. Although the academic community has been studying the influencing factors of knowledge transfer for over 60 years, the initial research was relatively macroscopic. Although the research in recent years has broadened the research directions and perspectives, there are still relatively few studies on external factors, such as regional policies and intellectual property policies. In particular, there is almost no in-depth understanding of the influence of the relationship between the two on the universities-enterprises knowledge transfer.

Keywords: Knowledge Transfer, Regional Policy, Intellectual Property Policy

INTRODUCTION

Universities-enterprises knowledge transfer is an important way to establish a long-term and stable collaborative relationship between universities and enterprises (Chunyan & Yuanyuan, 2018), and collaboration between universities and enterprises is an effective way for university knowledge transfer and the transformation of scientific and technological achievements (Han, 2017). For universities, knowledge transfer is the commercialization of scientific and technological achievements. For enterprises, the commercialization of scientific and technological achievements is the universities knowledge transfer (Han, 2017). Universities-enterprises knowledge transfer is not only an important way for scientific research practice, but also an important means to improve the efficiency of the transformation of scientific and technological achievements in universities (Pinto and Fernandez, 2018). Therefore, the research on this topic is of both theoretical and practical significance.

With the acceleration of the international innovation speed, enterprises, especially small and medium-sized enterprises (SMEs), are facing fierce market competition pressure (Zhen et al., 2021). Zhen (2021) believes that this is not only because SMEs lack the advantages of large enterprises, including insufficient innovation resources and limited innovation capabilities, but also because it is difficult for them to accurately judge the current market economy situation. Therefore, an increasing number of scholars have proposed that the research on knowledge

transfer can focus on SMEs, especially the collaboration between universities and SMEs (Anand et al., 2020; Anand and Dalmaso, 2020; Massaro et al., 2016).

At present, in the context of knowledge transfer, many research focuses are concentrated on the importance of universities-enterprises collaboration (Kunttu et al., 2018; Han, 2017; Ankrah and Tabbaa, 2015a). Furthermore, many of these studies involving the influencing factors of knowledge transfer are mostly related to the internal organization, such as trust and communication. However, the process of universities-enterprises knowledge transfer is complex and tortuous, and the influence of external factors on it should not be ignored (Hu, 2016).

Therefore, studying the issue of university-enterprise knowledge transfer from the external environment, including the background of the market economy and regional policies, is currently the focus of attention in the academic circle (Fuller, 2019; Martin et al., 2019; Pittaway et al., 2020). Campbell A et al. (2020) proposed that the influence effects of different factors on knowledge transfer are different. For example, the influence effects of regional policies and intellectual property policies are different after analysis. After further studying regional policies and intellectual property policies, researchers in related fields can deepen their understanding of universities-enterprises knowledge transfer, and have more confidence in the research on university-enterprise collaboration (Hayter and Rooksby, 2016). Therefore, exploring the topic of university-enterprise knowledge transfer from the perspectives of regional policies and intellectual property policies holds great potential (Hayden et al., 2018).

LITERATURE REVIEW

Knowledge Transfer and University-Enterprise Knowledge Transfer

Knowledge transfer is the process of transferring experience from one unit to another, with the subjects including individuals and groups (Argote et al., 2000). The forms of knowledge transfer include various formal and informal channels such as contracts and non-contracts, patent licensing, etc. (Sengupta and Ray, 2017). Therefore, the understanding of knowledge transfer should not be regarded as the end once the knowledge transfer is completed. Instead, the process of knowledge transfer and its impact should be explained (Mohan and Kumar, 2015).

The process of knowledge transfer is very complex and is influenced by many factors. Some factors may affect the success of knowledge transfer while also hindering it in other aspects (Jabri and Busaidi, 2018). Reviewing the relevant literature on knowledge transfer, the factors that affect the knowledge transfer process include dynamic factors and obstructive factors (Jabri and Busaidi, 2018). However, most of the studies consulted are theoretical rather than empirical, and the research on SMEs is also very limited (Jabri and Busaidi, 2018).

Since this study aims to explore the knowledge transfer between universities and enterprises, in addition to understanding knowledge transfer, it is also necessary to explain the relevant contents of universities-enterprises knowledge transfer. University-enterprise knowledge transfer is an important activity of interaction between the academic and industrial sectors (Sierra et al., 2017; Veer and Rowley, 2017). In a broad sense, knowledge transfer encompasses the content of university-enterprise knowledge transfer, that is, the knowledge of universities is utilized by enterprises to achieve innovative value (Sierra et al., 2017).

The process of universities-enterprises knowledge transfer has obvious linear characteristics, which means that the entire process is full of complexity and twists and turns. This particular process is influenced by the diversity of transfer paths and methods, and there are also reasons for the uncertainty of transfer results (Vesper et al., 2021; Ankrah and Tabbaa, 2015). During this process, university-enterprise knowledge transfer will face challenges from both internal and external factors (Fawad et al., 2020; Pereira and Franco, 2022; Silva et al., 2022). This is because the influencing factors of knowledge transfer are inherently divided into internal and external ones. Therefore, when studying the process of universities-enterprises knowledge transfer, it is also necessary to comprehensively consider the influences of internal and external factors.

The internal factors influencing the university-enterprise knowledge transfer include trust, communication and motivation (Fawad et al., 2020; Pereira and Franco, 2022; Silva et al., 2022), external factors include government support, regional differences, and laws (Rosli et al., 2018; Trein et al., 2021; Wei and Wang, 2018). However, previous studies have more often suggested that internal factors such as trust and communication have a more significant influence on the knowledge transfer process (Asrar and Anwar, 2016). Asrar and Anwar (2016) holds that there is still a significant research gap in the study of external factors, including policies, that influence the knowledge transfer process.

Regional Policy

Regional policies are targeted policies formulated by national and regional governments regarding the coordination of regional relations and the stable development of regions, based on full consideration of regional differences (Friedmann and Alonso, 2001). When social resources are unreasonably distributed among regions,

regional policies, a means with regulatory functions, are also needed to guide the rational allocation of resources (Bosch et al., 2010). For instance, if the resource advantage exists only in one or a few regions, then other regions will face the risk of resource shortage, and even the phenomenon of trade congestion may occur in the regions with advantageous resources (Bosch et al., 2010).

Generally speaking, regions that are obviously at a disadvantage in economic development or social stability need regional policies more to regulate and save themselves (Nigar et al., 2017), and regional policies have always existed as saviors, encouraging companies or enterprises in these regions to develop the economy for a long time (MBN, 2020). To avoid the expansion of regional differences, the governments of these regions pin their hopes on targeted regional policies to improve the backward situation of their regions in many aspects such as economy, culture and society (MBN, 2020). Furthermore, regional policies play a significant role in achieving sustainable economic development in the local area and can even determine the direction and focus of regional development to a certain extent (Šabić and Vujadinović, 2017). Considering the importance of regional policies, when formulating regional policies, the government also needs to balance the collaborative relationships among member organizations within the region, complement each other, support each other, and jointly contribute to regional economic development (Mendez et al., 2024).

Theoretically, regional policies consist of two goal orientations: correcting imbalances and enhancing growth efficiency, and are achieved by transferring funds and resources to backward regions (Lammers, 2018). Fratesi (2023) takes regional development policies as an example and proposes that the government makes targeted adjustments and optimizations to policies in order to promote local economic development, including financial subsidies, tax reductions and exemptions, and incentives for innovation, in order to change the current situation of economic backwardness in this region. In addition to regional development policies, in response to the specific needs of regional development, regional policies distinct from others can also emerge, such as regional innovation policies and regional cultural policies (Fratesi, 2023).

Through the summary of the literature, this study holds that the viewpoint of Fratesi (2023) emphasizes the characteristics of complexity and instability of regional policies, and suggests that the government needs to adjust regional policies in a timely manner, which is closely related to the impact of regional policies on the universities-enterprises knowledge transfer to be discussed in this study. Therefore, this study adopted his viewpoint and proposed that regional policies are the general term for a series of policies formulated by the government to promote the coordinated development of all aspects in a specific region and constantly adjusted according to the actual situation. Although the concept of regional policy repeatedly emphasizes the factor of regional differences, there is no further explanation of exactly what causes regional differences and what the resulting consequences are. Therefore, an in-depth exploration of the impact of regional policies in this study is conducive to enriching the definition of regional policies.

Intellectual Property Policy

The concept of intellectual property is very rich. The World Trade Organization (2016) holds that intellectual property are intangible assets created by humans. For instance, patents, copyrights and trademarks all fall within the scope of intellectual property. Bochańczyk (2019), based on the interpretation of the WTO, proposed that intellectual property are the rights of the creators of ideas to apply their creations within a certain period of time. In 2021, the World Trade Organization further pointed out that there are differences in the manifestations of intellectual property among countries (WIPO, 2022a). Furthermore, in order to promote knowledge innovation and dissemination, intellectual property demonstrate their own exclusive characteristics by encouraging creators to participate in the activities of creating new products and inventing new technologies (Kevin, 2022).

Although intellectual property is an intangible asset, it still enjoys the same legally protected rights as tangible property. This is not only the right of enterprises but also the ownership of individuals' intangible assets (Kenton, 2024). Intellectual property precisely grant these enterprises and individuals the exclusive rights to their creations (WTO, 2023). Whether it is technology or invention and creation, no intellectual knowledge achievement is allowed to be used by any organization or individual without the consent of the creator or the rights owner (Saha and Bhattacharya, 2011).

Combining the viewpoints of scholars, this study holds that intellectual property are the legal rights to protect the innovation achievements and intellectual property of enterprises and individuals in order to encourage their participation in innovation. For instance, intellectual property such as patents, copyrights and trademarks can all become the intellectual achievements of enterprises after they participate in innovation activities (Depoorter et al., 2019). Therefore, intellectual property can enhance the innovation ability of enterprises by encouraging their innovation (Depoorter et al., 2019; Elmawazini et al., 2022; Haber, 2015).

However, in the definition of intellectual property, the negative impacts of intellectual property are often overlooked, including what changes will occur in the outcome of knowledge transfer if the ownership of intellectual property is not clear (Dwyer et al., 2023). For instance, when an effective intellectual property agreement is signed

between a university and an enterprise, the university-enterprise knowledge transfer can proceed smoothly. Conversely, if the intellectual property agreement is invalid, the knowledge transfer cannot be completed (Arundel and Wunsch, 2021). Therefore, a sound intellectual property policy can create a favorable cooperative environment for local innovation entities, protect their economic interests, and stimulate their innovation enthusiasm and research and development passion (Wan et al., 2023; Arundel and Wunsch, 2021). On the contrary, an incomplete or lacking intellectual property policy can lead to the loss of confidence and enthusiasm for innovation among innovation entities due to the unclear ownership of rights, and eventually they give up participating in innovation activities (Dwyer et al., 2023).

Therefore, the impact of intellectual property should be actively incorporated into the definition of intellectual property, which is of great significance for enriching the definition of intellectual property. When intellectual property can build a bridge of trust between universities and enterprises, their confidence in the success of knowledge transfer will be enhanced (Dwyer et al., 2023). In view of this, the correct criteria for determining intellectual property policies should at least include the certainty of external resources and the stability of internal benefits (Ali and Tang, 2023). With the support of such an intellectual property policy, universities and enterprises will build sufficient confidence in their collaboration after successfully obtaining intellectual property and look forward to and facilitate the next collaboration (Geiger, 2021).

METHODOLOGY

This article is based on library retrieval and conducts a literature review with the influencing factors in the process of knowledge transfer as the theme. The references of this article are derived from online databases such as Scopus, Web of Science and Google Scholar. Furthermore, in order to better understand the viewpoints of this study, the forms of the literature cover journal articles, research reports and chapters in a book.

Previous studies on this perspective were confined to this period (1960- Now). The first study was initiated by the research of Freda and Shields (1960) and is still ongoing until now. Unlike other studies that view knowledge transfer from the perspective of local or foreign partners, this study analyzes the process of knowledge transfer among university enterprises from the perspective of the external environment. Furthermore, the current research has established a conceptual framework for the influencing factors of university-enterprise knowledge transfer in the collaboration between universities and SMEs.

Furthermore, in order to propose a conceptual framework, this study also analyzed previous meta-analyses, critical literature reviews, and different studies on knowledge transfer and its influencing factors among different organizations (enterprises and enterprises, government and universities, universities and enterprises), to comprehensively understand the potential factors that may influence universities-enterprises knowledge transfer. Since the references of this study are only taken from articles in journals, chapters in books and full-text documents, the limitations of this paper may be due to the limited database resources mentioned earlier. Therefore, the search results also exclude different studies related to universities-enterprises knowledge transfer.

RECOMMENDATION

In recent years, scholars have shown great research enthusiasm for the performance of knowledge transfer under the influence of the market economy and regional environment (Fuller, 2019; Martin et al., 2019; Pittaway et al., 2020). For policymakers of regional policies, it is very important to consider the role of regional policies in the universities-enterprises knowledge transfer and to facilitate the smooth progress of knowledge transfer (Karanikić and Bezić, 2021).

With the continuous deepening of research, future researchers can conduct comparative studies on the policies of more countries and regions, and extend different research frameworks to various policy fields (Martin, 2019). In order to promote the smooth progress of knowledge transfer, how local governments formulate regional policies that meet the needs of university-enterprise collaboration to encourage universities to establish long-term partnerships with enterprises is a problem that should be considered in the future.

Apart from the policy level, there are still many complex interest relationships in the intermediate environment of collaboration between universities and enterprises that have not been considered well to a large extent (Miller et al., 2018). For example, the influence of intellectual property-related mechanisms on university-enterprise knowledge transfer (Hayter et al., 2016). Flexible and definite university intellectual property policies are more conducive to building trust between universities and enterprises and generating confidence in the success of knowledge transfer. Therefore, more disciplines have begun to pay attention to intellectual property, especially the role played by patent protection in knowledge transfer (Hall et al., 2014). In future research, we should continue

to consider how to utilize intellectual property to protect the achievements of scientific and technological transformation in the process of knowledge transfer (Jipeng and Weijiang, 2018).

Through literature review, it can be found that regional policies and intellectual property policies have obvious instability. Therefore, combining regional policies and intellectual property policies for discussion from multiple aspects is an important means to study the external influencing factors of universities-enterprises knowledge transfer (Giuri et al., 2019). Future research can also conduct in-depth practical studies on the theme that universities-enterprises knowledge transfer affects enterprise innovation from the perspectives of regional policies and intellectual property policies.

CONCLUSION

This study reveals the significance of universities-enterprises knowledge transfer for the collaboration between universities and enterprises. Moreover, this process is complex and tortuous, emphasizing the importance of researching the influencing factors of universities-enterprises knowledge transfer. This paper conducts a retrieval and analysis of the literature resources in the electronic library and, based on a critical literature review of universities-enterprises knowledge transfer between, proposes that the influencing factors of universities-enterprises knowledge transfer can be divided into internal and external ones, and emphasizes the particularity of the external influencing factors (regional policies and intellectual property policies).

However, previous studies have rarely discussed the influence of regional policies and intellectual property policies on the universities-enterprises knowledge transfer. This study reviews the limited literature in the academic circle on the influencing factors of universities-enterprises knowledge transfer, further demonstrating the significance of external influencing factors of universities-enterprises knowledge transfer, as well as the research gap of regional policies and intellectual property policies in this research field. Furthermore, this study also proposes that the relationship between regional policies and intellectual property policies will also have an influence on the universities-enterprises knowledge transfer. The research on these issues is of positive significance for improving the efficiency of universities-enterprises knowledge transfer.

REFERENCE

- Ali, S. and Tang, H., (2023). "Is intellectual property beneficial to knowledge management? Literature review on organizational knowledge protection". *Journal of the Knowledge Economy*, 14(4), pp.4100-4118.
- Al-Jabri, H. and Al-Busaidi, K.A., (2018). "Inter-organizational knowledge transfer in Omani SMEs: influencing factors". *Journal of Information and Knowledge Management Systems*, 48(3), pp.333-351.
- Anand, A. and Dalmasso, A., (2020). "Supervisor effects on employee knowledge sharing behaviour in SMEs". *Journal of the Knowledge Economy*, 11(4), pp.1430-1453.
- Anand, A., Muskat, B., Creed, A., Zutshi, A. and Csepregi, A., (2021). "Knowledge sharing, knowledge transfer and SMEs: evolution, antecedents, outcomes and directions". *Personnel review*, 50(9), pp.1873-1893.
- Ankrah, S., and Omar, A. T., (2015). "Universities-industry collaboration: A systematic review". *Scandinavian Journal of Management*, 31(3), pp. 387-408.
- Argote, L., Ingram, P., Levine, J.M. and Moreland, R.L., (2000). "Knowledge transfer in organizations: Learning from the experience of others". *Organizational behavior and human decision processes*, 82(1), pp.1-8.
- Arundel, A., (2021). "Evaluating Knowledge Transfer Policies and Practices: Conceptual Framework and Metrics". In *Harnessing Public Research for Innovation in the 21st Century: An international assessment of knowledge transfer policies*, Cambridge University Press, pp.35-67.
- Asrar-ul-Haq, M. and Anwar, S., (2016). "A systematic review of knowledge management and knowledge sharing: Trends, issues, and challenges". *business & management*, 3(1), p.1127744.
- Bochańczyk-Kupka, D., (2019). "Intellectual property as intangible good". *Ekonomia i Prawo. Economics and Law*, 18(2), pp.123-131.
- Bosch, N., and Espasa, M. (Eds.), (2010). "The Political Economy of Inter-Regional Fiscal Flows: Measurement, Determinants and Effects on Country Stability". Edward Elgar Publishing.
- Campbell, A., Cavallade, C., Haunold, C., Karanikic, P., Piccaluga, A. and Dinnetz, M., (2020). "Knowledge transfer metrics". *Towards a European-wide set of harmonised indicators*, Karlsson Dinnetz, M.(Ed.), EUR, 30218.
- Chunyan, L and Chen Y., (2018). "Study on the Features and Connotations of Knowledge Transfer in the Industry-University-Research Collaborative Innovation Team". *Science and Technology Management Research* 1(27).
- Depoorter, B., Menell, P. and Schwartz, D. eds., (2019). "Research Handbook on the Economics of Intellectual Property Law: Vol 1: Theory Vol 2: Analytical Methods". Edward Elgar Publishing.

- Elmawazini, K., Atallah, G., Rafiquzzaman, M. and Guesmi, K., (2022). "Do regulatory policies matter to corporate innovation?". *International Review of Financial Analysis*, 84, pp.102398.
- Fawad Sharif, S.M., Naiding, Y., Xu, Y. and Rehman, A.U., (2020). "The effect of contract completeness on knowledge leakages in collaborative construction projects: a moderated mediation study". *Journal of Knowledge Management*, 24(9), pp.2057-2078.
- Fratesi, U., (2023). "Regional policy: Theory and practice". Routledge.
- Friedmann, J., (2001). "Regional development and planning: The story of a collaboration". *International Regional Science Review*, 24(3), pp.386-395.
- Fuller, D., Beynon, M. and Pickernell, D., (2019). "Indexing third stream activities in UK universities: exploring the entrepreneurial/enterprising university". *Studies in Higher Education*, 44(1), pp.86-110.
- Geiger, C., (2021). "Intellectual Property and Investment Protection: A Misleading Equation". *Gestaltung der Informationsrechtsordnung-Festschrift für Thomas Dreier zum*, 65, pp.7-19.
- Giuri, P., Munari, F., Scandura, A., and Toschi, L. (2019). "The Strategic Orientation of Universities in Knowledge Transfer Activities". *Technological Forecasting and Social Change*, 138, pp.261-278.
- Haber, S., (2015). "Patents and the Wealth of Nations". *Geo. Mason L. Rev.*, 23, p.811.
- Hall, B., Helmers, C., Rogers, M., and Sena, V. (2014). "The Choice between Formal and Informal Intellectual Property: A Review". *Journal of Economic Literature*, 52(2), pp.375-423.
- Han, J., (2017). "Technology commercialization through sustainable knowledge sharing from university-industry collaborations, with a focus on patent propensity". *Sustainability*, 9(10), p.1808.
- Hayden, M.C., Petrova, M.K. and Wutti, D., (2018). "Direct associations of the terminology of knowledge transfer-differences between the social sciences and humanities (SSH) and other scientific disciplines". *TRAMES: A Journal of the Humanities & Social Sciences*, 22(3).
- Hayter, C.S. and Rooksby, J.H., (2016). "A legal perspective on university technology transfer". *The Journal of Technology Transfer*, 41, pp.270-289.
- Hu, Y., (2016). "Analysis of the influence factors of knowledge transfer in university-industry collaborative innovation". In *6th International Conference on Electronic, Mechanical, Information and Management Society*, Atlantis Press, pp.1355-1359.
- Karanikić, P., and Bezić, H. (2021). "Measuring the knowledge transfer performance at universities". *Ekonomika misao i praksa*, 30(1), pp.189-203.
- Kenton, W. (2024). "What Is Intellectual Property, and What Are Some Types?". Investopedia. Available at: <https://www.investopedia.com/terms/i/intellectualproperty.asp> (Accessed June 07, 2024).
- Kevin, J. H. (2022). "Intellectual Property Law: A Brief Introduction". Congressional Research Service. Available at: <https://crsreports.congress.gov> (Accessed 13 April, 2022).
- Kunttu, L., Huttu, E. and Neuvo, Y., (2018). "How doctoral students and graduates can facilitate boundary spanning between academia and industry". *Technology Innovation Management Review*, 8(6), pp.48-54.
- Lammers, K., (2018). "European Regional Policy". Available at: <https://nbnresolving.org/urn:nbn:de:0156-55995239>. (Accessed April, 2017).
- Martin, L.M., Warren-Smith, I. and Lord, G., (2019). "Entrepreneurial architecture in UK universities: still a work in progress?". *International Journal of Entrepreneurial Behavior & Research*, 25(2), pp.281-297.
- Massaro, M., Handley, K., Bagnoli, C. and Dumay, J., (2016). "Knowledge management in small and medium enterprises: a structured literature review". *Journal of Knowledge management*, 20(2), pp.258-291.
- MBN., (2020). "What Is Regional Policy: Definition and Examples". Available at: <https://marketbusinessnews.com/financial-glossary/regionalpolicy-definition-meaning> (Accessed 25 April, 2020).
- Mendez, C., Pegan, A. and Triga, V., (2024). "Creating public value in regional policy. Bringing citizens back in". *Public Management Review*, 26(3), pp.811-835.
- Miller, K., McAdam, R., and McAdam, M. (2018). "A systematic literature review of university technology transfer from a quadruple helix perspective: toward a research agenda". *R&d Management*, 48(1), pp. 7-24.
- Mohan, A. and Kumar, R.S., (2015). "Knowledge transfer: a basis for competitive advantage in organizations". *International Journal of Transformations in Business Management*, 17(5).
- Nigar, H., Gareth, M. and John, B., (2017). "A Dictionary of Economics". Oxford University Press.
- O'Dwyer, M., Filieri, R. and O'Malley, L., (2023). "Establishing successful university-industry collaborations: barriers and enablers deconstructed". *The Journal of Technology Transfer*, 48(3), pp.900-931.
- Pereira, R. and Franco, M., (2022). "Cooperation between universities and SMEs: A systematic literature review". *Industry and Higher Education*, 36(1), pp.37-50.
- Pinto, H. and Fernández-Esquinas, M., (2018). "What do stakeholders think about knowledge transfer offices? The perspective of firms and research groups in a regional innovation system". *Industry and Innovation*, 25(1), pp.25-52.

- Pittaway, L., Aissaoui, R., Ferrier, M. and Mass, P., (2020). "University spaces for entrepreneurship: a process model". *International Journal of Entrepreneurial Behavior & Research*, 26(5), pp.911-936.
- Puerta Sierra, L.M., Marín Vargas, M.E. and López Torres, V.G., (2017). "An institutional framework to explain the university: industry technology transfer in a public university of Mexico". *Journal of technology management & innovation*, 12(1), pp.4-12.
- Rosli, A., De Silva, M., Rossi, F. and Yip, N., (2018). "The long-term impact of engaged scholarship: how do SMEs capitalise on their engagement with academics to explore new opportunities?". *International Small Business Journal*, 36(4), pp.400-428.
- Rossi, F., De Silva, M., Baines, N. and Rosli, A., (2022). "Long-term innovation outcomes of university–industry collaborations: the role of ‘bridging’vs ‘blurring’boundary-spanning practices". *British Journal of Management*, 33(1), pp.478-501.
- Šabić, D. and Vujadinović, S., (2017). "Regional development and regional policy". *Zbornik radova-Geografski fakultet Univerziteta u Beogradu*, (65-1a), pp.463-477.
- Saha, C.N. and Bhattacharya, S., (2011). "Intellectual property rights: An overview and implications in pharmaceutical industry". *Journal of advanced pharmaceutical technology & research*, 2(2), pp.88-93.
- Sengupta, A. and Ray, A.S., (2017). "Choice of structure, business model and portfolio: organizational models of knowledge transfer offices in British universities". *British Journal of Management*, 28(4), pp.687-710.
- Trein, P., Biesbroek, R., Bolognesi, T., Cejudo, G.M., Duffy, R., Hustedt, T. and Meyer, I., (2021). "Policy coordination and integration: A research agenda". *Public Administration Review*, 81(5), pp.973-977.
- Veer Ramjeawon, P. and Rowley, J., (2017). "Knowledge management in higher education institutions: enablers and barriers in Mauritius". *The Learning Organization*, 24(5), pp.366-377.
- Vesperi, W., Melina, A.M., Ventura, M., Coppolino, R. and Reina, R., (2021). "Organizing knowledge transfer between university and agribusiness firms". *Systems Research and Behavioral Science*, 38(3), pp.321-329.
- Wan, Q., Yuan, L., Yao, Z. and Xu, Y., (2023). "Impact of intellectual property protection on the innovation efficiency in China's hi-tech industry". *Technology Analysis & Strategic Management*, 35(1), pp.107-122.
- Wei, Jipeng, and Weijiang Wang., (2018). "Research on Intellectual Property Protection in Colleges and Universities". *Advances in Social Science, Education and Humanities Research*, 233, pp.1162-1169.
- WIPO. (2022a). IP Policies for Universities and Research Institutions. Available at: <https://www.wipo.int/technology-transfer/en/ip-policies.html>. (Accessed 2023).
- WTO. (2023). "What Are Intellectual Property Rights". Available at: https://www.wto.org/english/tratop_e/trips_e/intel1_e.htm. (Accessed 2023).
- Zhen, J., Guo, Z., Qu, Y. and Ren, H., (2021). "The relationship between intellectual property risk and stability of asymmetric research and development alliance". *Complexity*, 2021(1), pp.2949067.
- Ali, Shoaib, and Heng Tang. "Is intellectual property beneficial to knowledge management? Literature review on organizational knowledge protection." *Journal of the Knowledge Economy* 14, no. 4, pp. 4100-4118, 2023.
- Al-Jabri, Himyar, and Kamla Ali Al-Busaidi. "Inter-organizational knowledge transfer in Omani SMEs: influencing factors." *VINE Journal of Information and Knowledge Management Systems* 48, no. 3, pp. 333-351, 2018.
- Anand, Amitabh, and Audrey Dalmasso. "Supervisor effects on employee knowledge sharing behaviour in SMEs." *Journal of the Knowledge Economy* 11, no. 4, pp. 1430-1453, 2020.
- Anand, Amitabh, Birgit Muskat, Andrew Creed, Ambika Zutshi, and Anikó Csepregi. "Knowledge sharing, knowledge transfer and SMEs: evolution, antecedents, outcomes and directions." *Personnel review* 50, no. 9, pp. 1873-1893, 2021.
- Ankrah, Samuel, and AL-Tabbaa Omar. "Universities - industry collaboration: A systematic review." *Scandinavian journal of management* 31, no. 3, pp. 387-408, 2015.
- Argote, Linda, Paul Ingram, John M. Levine, and Richard L. Moreland. "Knowledge transfer in organizations: Learning from the experience of others." *Organizational behavior and human decision processes* 82, no. 1, pp. 1-8, 2000.
- Arti. [2024, Jun. 13]. What Is Regional Policy: Definition and Examples. INVEZZ. [Online]. Available at: <https://marketbusinessnews.com/financial-glossary/regionalpolicy-definition-meaning> [Accessed: 12 Sep 2025].
- Arundel, Anthony. "Evaluating Knowledge Transfer Policies and Practices: Conceptual Framework and Metrics." *Harnessing Public Research for Innovation in the 21st Century: An international assessment of knowledge transfer policies*, Cambridge University Press, pp. 35-67, 2021.
- Asrar-ul-Haq, Muhammad, and Sadia Anwar. "A systematic review of knowledge management and knowledge sharing: Trends, issues, and challenges." *Cogent business & management* 3, no. 1, 2016.
- Becker, Sascha O., Peter H. Egger, and Maximilian Von Ehrlich. "Effects of EU regional policy: 1989-2013." *Regional science and urban economics* 69, pp. 143-152, 2018.

- Bochańczyk-Kupka, Dominika. "Intellectual property as intangible good." *Ekonomia i Prawo. Economics and Law* 18, no. 2, pp. 123-131, 2019.
- Bosch, Núria, and Marta Espasa, eds. *The political economy of inter-regional fiscal flows: measurement, determinants and effects on country stability*. Edward Elgar Publishing, 2010.
- Campbell, Alison, Cecile Cavallade, Christophe Haunold, Petra Karanikic, and Andrea Piccaluga. *Knowledge Transfer Metrics-Towards a European-wide set of harmonised indicators*. 2020.
- Depoorter, Ben, Peter Menell, and David Schwartz, eds. *Research Handbook on the Economics of Intellectual Property Law: Vol 1: Theory Vol 2: Analytical Methods*. Edward Elgar Publishing, 2019.
- Elmawazini, Khaled, Gamal Atallah, Mohammed Rafiquzzaman, and Khaled Guesmi. "Do regulatory policies matter to corporate innovation?." *International Review of Financial Analysis* 84, pp. 102398, 2022.
- Fawad Sharif, Sayed Muhammad, Yang Naiding, Yan Xu, and Atiq Ur Rehman. "The effect of contract completeness on knowledge leakages in collaborative construction projects: a moderated mediation study." *Journal of Knowledge Management* 24, no. 9, pp. 2057-2078, 2020.
- Fratesi, Ugo. *Regional policy: Theory and practice*. Routledge, 2023.
- Freda, Jon S., and Joyce L. Shields. "An Investigation of the Adoption Process in Training Technology Transfer." (1980).
- Friedmann, John. "Regional development and planning: The story of a collaboration." *International Regional Science Review* 24, no. 3, pp. 386-395, 2001.
- Fuller, Daniel, Malcolm Beynon, and David Pickernell. "Indexing third stream activities in UK universities: exploring the entrepreneurial/enterprising university." *Studies in Higher Education* 44, no. 1, pp. 86-110, 2019.
- Geiger, Christophe. "Intellectual Property and Investment Protection: A Misleading Equation." *Gestaltung der Informationsrechtsordnung-Festschrift für Thomas Dreier zum 65.*, pp. 7-19, 2021.
- Gezici, Ferhan. "New regional definition and spatial analysis of regional inequalities in Turkey related to the regional policies of EU." *Australasian Journal of Regional Studies*, The 12, no. 1, pp. 103-124, 2006.
- Giuri, Paola, Federico Munari, Alessandra Scandura, and Laura Toschi. "The strategic orientation of universities in knowledge transfer activities." *Technological Forecasting and Social Change* 138, pp. 261-278, 2019.
- Haber, Stephen. "Patents and the Wealth of Nations." *Geo. Mason L. Rev.* 23, pp. 811, 2015.
- Hall, Bronwyn, Christian Helmers, Mark Rogers, and Vania Sena. "The choice between formal and informal intellectual property: a review." *Journal of Economic Literature* 52, no. 2, pp. 375-423, 2014.
- Han, Junghee. "Technology commercialization through sustainable knowledge sharing from university-industry collaborations, with a focus on patent propensity." *Sustainability* 9, no. 10, 2017.
- Hashimzade, Nigar, Gareth Myles, and John Black. *A dictionary of economics*. Oxford University Press, 2016.
- Hayden, Markus C., Margarita K. Petrova, and Daniel Wutti. "Direct associations of the terminology of knowledge transfer-differences between the social sciences and humanities (SSH) and other scientific disciplines." *TRAMES: A Journal of the Humanities & Social Sciences* 22, no. 3, 2018.
- Hayter, Christopher S., and Jacob H. Rooksby. "A legal perspective on university technology transfer." *The Journal of Technology Transfer* 41, no. 2, pp. 270-289, 2016.
- Hu, Yanhua. "Analysis of the influence factors of knowledge transfer in university-industry collaborative innovation." In *6th International Conference on Electronic, Mechanical, Information and Management Society*, pp. 1355-1359. Atlantis Press, 2016.
- Karanikić, Petra, and Heri Bezić. "Measuring the knowledge transfer performance at universities." *Ekonomika misao i praksa* 30, no. 1, pp. 189-203, 2021.
- Kenton, W. (2025, Aug. 05). What Is Intellectual Property, and What Are Some Types? Investopedia. [Online]. Available at: <https://www.investopedia.com/terms/i/intellectualproperty.asp> [Accessed: 12 Sep 2025].
- Kevin, J. H. [2022, April. 04]. Intellectual Property Law: A Brief Introduction. Congressional Research Service. [Online]. Available at: <https://crsreports.congress.gov> [Accessed: 12 Sep 2025].
- Kunttu, Leena, Essi Huttu, and Yrjö Neuvo. "How doctoral students and graduates can facilitate boundary spanning between academia and industry." *Technology innovation management review* 8, no. 6, pp. 48-54, 2018.
- Martin, Lynn M., Izzy Warren-Smith, and Gemma Lord. "Entrepreneurial architecture in UK universities: still a work in progress?." *International Journal of Entrepreneurial Behavior & Research* 25, no. 2, pp. 281-297, 2019.
- Massaro, Maurizio, Karen Handley, Carlo Bagnoli, and John Dumay. "Knowledge management in small and medium enterprises: a structured literature review." *Journal of Knowledge management* 20, no. 2, pp. 258-291, 2019.

- Mendez, C., Pegan, A. and Triga, V. "Creating public value in regional policy. Bringing citizens back in". *Public Management Review* 26, no. 3, pp.811-835, 2024.
- Miller, K., McAdam, R., and McAdam, M. "A systematic literature review of university technology transfer from a quadruple helix perspective: toward a research agenda." *R&d Management* 48, no. 1, pp. 7-24, 2018.
- Mohan, A. and Kumar, R.S. "Knowledge transfer: a basis for competitive advantage in organizations." *International Journal of Transformations in Business Management* 5, no. 3, pp. 1-7, 2015.
- O'Dwyer, M., Filieri, R. and O'Malley, L. "Establishing successful university–industry collaborations: barriers and enablers deconstructed." *The Journal of Technology Transfer* 48, no.3, pp.900-931, 2023.
- Pereira, Rosivalda, and Mário Franco. "Cooperation between universities and SMEs: A systematic literature review." *Industry and Higher Education* 36, no. 1, pp. 37-50, 2022.
- Pinto, Hugo, and Manuel Fernández-Esquinas. "What do stakeholders think about knowledge transfer offices? The perspective of firms and research groups in a regional innovation system." *Industry and Innovation* 25, no. 1, pp. 25-52, 2018.
- Pittaway, Luke, Rachida Aissaoui, Michelle Ferrier, and Paul Mass. "University spaces for entrepreneurship: a process model." *International Journal of Entrepreneurial Behavior & Research* 26, no. 5, pp. 911-936, 2022.
- Puerta Sierra, Lizbeth Magdalena, Ma Enselmina Marín Vargas, and Virginia Guadalupe López Torres. "An institutional framework to explain the university: industry technology transfer in a public university of Mexico." *Journal of technology management & innovation* 12, no. 1, pp. 4-12, 2017.
- Rosli, Ainurul, Muthu De Silva, Federica Rossi, and Nick Yip. "The long-term impact of engaged scholarship: how do SMEs capitalise on their engagement with academics to explore new opportunities?." *International Small Business Journal* 36, no. 4, pp. 400-428, 2018.
- Rossi, Federica, Muthu De Silva, Ning Baines, and Ainurul Rosli. "Long - term innovation outcomes of university – industry collaborations: the role of ‘bridging’ vs ‘blurring’ boundary - spanning practices." *British Journal of Management* 33, no. 1, pp. 478-501, 2022.
- Šabić, Dejan, and Snežana Vujadinović. "Regional development and regional policy." *Zbornik radova-Geografski fakultet Univerziteta u Beogradu* 65-1a, pp. 463-477, 2017.
- Saha, Chandra Nath, and Sanjib Bhattacharya. "Intellectual property rights: An overview and implications in pharmaceutical industry." *Journal of advanced pharmaceutical technology & research* 2, no. 2, pp. 88-93, 2011.
- Sengupta, Abhijit, and Amit S. Ray. "Choice of structure, business model and portfolio: organizational models of knowledge transfer offices in British universities." *British Journal of Management* 28, no. 4, pp. 687-710, 2017.
- Trein, Philipp, Robbert Biesbroek, Thomas Bolognesi, Guillermo M. Cejudo, Robert Duffy, Thurid Hustedt, and Iris Meyer. "Policy coordination and integration: A research agenda." *Public Administration Review* 81, no. 5, pp. 973-977, 2021.
- Veer Ramjeawon, Poonam, and Jennifer Rowley. "Knowledge management in higher education institutions: enablers and barriers in Mauritius." *The Learning Organization* 24, no. 5, pp. 366-377, 2017.
- Vesperi, Walter, Anna Maria Melina, Marzia Ventura, Raffaella Coppolino, and Rocco Reina. "Organizing knowledge transfer between university and agribusiness firms." *Systems Research and Behavioral Science* 38, no. 3, pp. 321-329, 2021.
- Wan, Qunchao, Ling Yuan, Zhu Yao, and Yong Xu. "Impact of intellectual property protection on the innovation efficiency in China's hi-tech industry." *Technology Analysis & Strategic Management* 35, no. 1, pp. 107-122, 2023.
- Wei, Jipeng, and Weijiang Wang. "Research on Intellectual Property Protection in Colleges and Universities." *In 3rd International Conference on Contemporary Education, Social Sciences and Humanities*, 233, pp. 1162-1169. Atlantis Press, 2018.
- WIPO. Understanding Industrial Property, 2nd ed., *Switzerland*, 2016.
- WIPO. [2022]. IP Policies for Universities and Research Institutions. World Intellectual Property Organization. [Online]. Available at: <https://www.wipo.int/technology-transfer/en/ip-policies.html> [Accessed:13 Sep 2025].
- WTO. [2023]. What Are Intellectual Property Rights. The World Trade Organization. [Online]. Available at: https://www.wto.org/english/tratop_e/trips_e/intel1_e.htm [Accessed: 13 Ser 2025].
- Zhao, Xi, Yuming Liu, Xianyi Lang, Kai Liu, Xiaoxu Yang, and Lin Liu. "Study on the Characteristics and Operational Mechanisms of Industry – University – Research Collaborative Innovation in Megaprojects: The Case from China." *Systems* 12, no. 1,2 pp. 553, 2024.

Zhen, Jie, Zhuopin Guo, Yiying Qu, and Hao Ren. "The relationship between intellectual property risk and stability of asymmetric research and development alliance." *Complexity*, no. 1, pp. 1-12, 2021.