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Historical Roots of Entrepreneurship Ecosystems

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Abstract

Historical structures and developments can have a significant and long-lasting impact on the level and the quality of regional entrepreneurship. One explanation for such effects is the formation of a regional "culture", an informal institution which is long-lasting and influences individual behavior. Another explanation for the long-term effects of historical structures and events is the presence of a collective memory. This article reviews the empirical evidence of the historical roots of regional entrepreneurial activity and its potential explanations. Furthermore, the consequences for the development of theories and the policy implications are discussed. Finally, the article reviews promising avenues for further research.

Keywords: History, persistence, long-term effects, institutions, culture, collective memory

JEL classification: L26, M13, N9, O1, R11

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1. Definition and Core Concepts

The concept of entrepreneurial ecosystems (EE) emphasizes that actors are shaped by their context, which influences their actions, choices, and success (Wurth, et al., 2022). A number of studies have highlighted the role of history in regional entrepreneurship (Fritsch & Wyrwich, 2023). It was shown that historical structures and events can have a significant and long-lasting impact on regional levels of self-employment and new business formation. As a result, regional levels and the quality of entrepreneurial activity is frequently found to be persistent over long periods of time.

This article examines the historical origins of entrepreneurial activity within regional ecosystems. It summarises the empirical evidence, reviews potential explanations for these findings and considers the implications for theory development and policy. Moreover, avenues for further research in this field are discussed.

2. Key findings and insights

The emergence of regional entrepreneurship

A first and important issue for explaining the dynamics of regional entrepreneurship is the emergence of commercial economic activity and self-employment. In rural regions in particular, economic activity has long been dominated by agriculture. Other sectors and types of entrepreneurial activity often developed as a result of ‘first nature’ geography such as quality of the soil, favorable climate, presence of natural resources, and good accessibility (e.g., location close to navigable waters). Accessibility of a location can boost trade and the exchange of knowledge that may stimulate specialization and the division of labor. Poor soil quality can stimulate entrepreneurship and specialization in manufacturing due to low agricultural opportunity costs (Runst & Wyrwich, 2023).

There are well-documented examples of regions that at one point in history experienced a boost of entrepreneurial activities that shaped their economic performance for a long period of time. Examples are the discovery of silver deposits in the Ore Mountains of Saxony (Germany) in the 12th century, the gold

rush in North America in the mid-19th century, and the emergence of small-scale manufacturing in the area of Baden-Wuerttemberg (Germany) during the 18th and 19th century. Such a boost of entrepreneurship can lead to the cultivation of certain entrepreneurial personality traits such as openness, risk-taking, and tolerance in local populations (Obschonka et al., 2021). Other natural resources such as coal deposits regularly induced the emergence of large-scale industries such as coal mining and steel, which implied regional conditions that were un conducive to new business formation and often led to low levels of entrepreneurship even after the large-scale industries had vanished (Stuetzer et al. 2016).

Persistence of regional entrepreneurship

Empirical studies show that regions with high levels of start-ups tend to maintain such high levels over periods of several decades, though correlations weaken over longer time spans. While data on new business formation are only available for some recent decades, self-employment records cover longer time periods. Studies for a number of countries confirm strong regional persistence in regional self-employment over more than a century despite disruptive changes in the socio-political environment (see the review in Fritsch & Wyrwich, 2023).

A striking example of historical imprinting of regional entrepreneurial activity is the area of Kaliningrad. Once German, it became Russian after World War II, with its original population displaced, followed by decades of socialism and a turbulent transition to a market economy. Yet, regional self-employment patterns from 1925 still predicted those in 2010. Silesia, Poland, like Kaliningrad, saw its German population after World War II replaced by population from former Polish territories that were annexed by the Soviets. Despite several decades of communist rule and a post-1990 transition to a market system, it was found that current start-up activity in Silesia aligns with the distribution of historical knowledge-intensive industries in the mid-1920s.

A particularly long-term imprint on entrepreneurship and innovation has been found for regions of Germany that were under Roman rule about 1,800 years ago. Fritsch et al. (2024) show that these regions still exhibit higher levels of entrepreneurial activity and innovation today. This persistence may stem from Roman cultural, institutional and technological influences, particularly the road

infrastructure that they built. Quite remarkably, current populations in many of these regions display more entrepreneurial personality traits compared to non-Roman areas (Obschonka et al., 2025).

In sum, research clearly indicates that historical roots of regional entrepreneurial activity can be far-reaching. In particular, it has been found for quite a number of countries that relatively high and low levels of regional entrepreneurship often show a rather pronounced tendency to persist over time. The variety of national contexts of these studies suggests that such persistence is a general pattern not tied to specific places or conditions, highlighting its importance in explaining regional differences in entrepreneurial activity.

How is regional entrepreneurship transferred over time?

Understanding the mechanisms by which the effects of historical imprints on entrepreneurial activity are transferred over time is important for any policy that attempts to influence regional entrepreneurship. These mechanisms are, however, still rather unclear and subject to ongoing discussion.

Stability of regional conditions such as legal framework, industry structure, human capital, and knowledge stock may explain persistence in entrepreneurship levels over some few decades. However, these factors can hardly account for long-term correlations since they are frequently subject to significant changes and adjustments to external developments.

An explanation for persistence of relatively high levels of regional entrepreneurship could be the inheritance of entrepreneurial personality traits and firms as well as the transfer of entrepreneurial values and attitudes from parents to their offspring. A high share of self-employed in the regional population should result in shared values reflecting entrepreneurial attitudes and behaviours. It also means the presence of relatively many entrepreneurial role-models that could stimulate the foundation of new businesses. There is indication that a positive role model effect is stronger for those entrepreneurs that are economically successful. High levels of regional entrepreneurship boost legitimacy, social acceptance and political support that encourage more people to choose entrepreneurship as a career option. Together, role models, peer effects, social acceptance, and political

support create a self-reinforcing cycle, making once established high levels of entrepreneurship self-perpetuating.

By contrast, regions dominated by large-scale industries tend to have a low proportion of self-employed people, implying a relatively small number of entrepreneurial role models and few firms that can be inherited. Much of the employment in such regions is in large firms, where entrepreneurial values and attitudes tend to play only a minor role. Often, the political and administrative sector in such regions is more attuned to the requirements of large firms than small firms and start-ups.

An explanation of the long-term persistence of regional entrepreneurship is the presence of a 'culture' that is more or less favorable to entrepreneurial activity. Culture is an informal institution that is commonly defined as a "collective mindset" or an "aggregate psychological trait" of the local population. Since it is related to values and attitudes it is more than just a certain tradition. Culture evolves much slower than often rapidly changing formal rules (formal institutions) and tends to be rather resilient to social, economic, and political changes. This endurance of culture may explain the persistence of entrepreneurship even in disruptive environments.

Only little is known about the emergence and the development of a local culture. Empirical analyses indicate that the properties of a regional culture are related to the characteristics of the local economy. Accordingly, a particularly entrepreneurial culture is likely to emerge in regions that have high levels of entrepreneurial activity as is typically the case in industries with low entry barriers. Such an entrepreneurial culture should favor values like 'individualism', 'self-realization', and 'responsibility' as well as personality traits such as 'openness', 'extraversion', and 'conscientiousness' (Obschonka et al., 2021). If the small firms of an entrepreneurial region are economically successful and develop into large entities, a once established entrepreneurial culture will for some time persist because culture generally changes only slowly.

Similarly, a region dominated by a few large firms may develop a 'non-entrepreneurial' culture that is characterized by fulfilling orders within a hierarchical structure and a 'nine to five' mentality while entrepreneurial values

such as individualism, autonomy, and self-realization are considered neutral or even negative. Hence, the dominance of large-scale industries in a region can create a non-entrepreneurial legacy that remains even when these industries have vanished decades ago.

Culture can contribute to explaining persistence of entrepreneurship also in regions where political developments, such as anti-entrepreneurial policies in a socialist regime, impeded entrepreneurial peer effects, or where population exchange prevented the transfer of values and personality traits. The persistence of entrepreneurship in these situations can be explained by collective memory, understood as a shared awareness of past occurrences such as the historical entrepreneurial success of a region (Fritsch & Wyrwich, 2023). As part of the regional culture, this memory can endure through stable and disruptive periods, shaping individual behavior. Empirical evidence shows that certain events can trigger a revival of historical narratives (Ochsner & Roesel, 2024), which reinforces the idea that collective memory can act as a latent catalyst for entrepreneurship.

Effects of regional culture on regional performance

Although there is hardly any information about the characteristics of the regional culture in past periods available, one can use historic self-employment levels as a proxy for how well the local culture aligned with entrepreneurial activity at that time. Empirical evidence on the effects of culture on regional performance is still rather rare. Studies generally suggest a positive relationship between historic self-employment levels, patent applications per capita, and economic prosperity. The strength of this relationship varies with the length of the time period and between countries. In a study of West Germany, Fritsch and Wyrwich (2017) found that startup activity has a considerably higher impact on GDP and employment growth in regions with high historical entrepreneurship levels. In East Germany, Fritsch and Wyrwich (2022) demonstrated a significant positive correlation between the percentage of self-employed individuals at the end of the socialist era and the speed of economic recovery after reunification. These findings suggest that entrepreneurial regions are more resilient and experience less severe effects from external shocks.

Dynamics of regional entrepreneurship: What we (do not) know

The empirical evidence on the evolution of regional entrepreneurial activity clearly reveals an important role of historical factors in that process. The pronounced long-term persistence of entrepreneurial activity that was found in many regions is a clear indication for such historical roots. Key factors in explaining the persistence of regional entrepreneurial activity are the transmission of values, attitudes, and identities in the regional population and a long-lasting regional culture. Another way by which historical roots may become effective is a collective memory of the past that can be dormant for a period of time but may be reinvented by certain events.

Research on regional entrepreneurial dynamics is at an early stage and our knowledge about these phenomena is still rather incomplete. Currently, empirical evidence is confined to a few countries, with the availability of historical data as the main limitation. In particular, studies for less developed countries are missing. But even in the more developed countries, the information about the characteristics of the entrepreneurs in earlier periods, about the type of their firms, and their economic success is very limited. More and better data are needed for more countries to throw further light on the relevant relationships. Another serious bottleneck is information on important elements of regional cultures, such as the values of the regional population and their development. In particular, information about historical cultures and their evolution is missing.

3. Practical and Policy Implications*Theory Development*

Empirical evidence shows that the level and the characteristics of entrepreneurial activity in a region are deeply shaped by historical developments that lead to the formation and co-evolution of a long-term culture. Such a regional culture includes values, beliefs, and identities of the population, which affect individual behaviors, local policies, and regional development. Local cultures show marked geographical variation, making them region-specific rather than driven at a national level. This highlights the significance of informal institutions – ‘soft’ factors that are ‘in the air’ – as key elements of a regional ecosystem impacting its performance. As a consequence, such informal institutions and their co-evolution

with the regional economy should be accounted for in a respective theory that could provide relevant guidance for policy. Therefore, a main task is to explain the emergence and the evolution of a regional culture, how it is shaped by historical developments and how it affects regional performance.

Regional culture has properties of a capital stock: long-lasting and subject to ‘investment’ and ‘depreciation’ over time. Current approaches to entrepreneurial ecosystems lack the integration of regional culture and its elements in a dynamic framework. Theories should be able to explain how a regional culture emerges, how factors such as regional identity, values, and attitudes of the population are transmitted over time. What are the factors that contribute to the self-consolidation of a particular culture and what are the factors that can initiate significant changes? Furthermore, theories should explain how the elements of a regional culture mold individual behavior and entrepreneurial activity and in which way they affect regional development.

The persistence of regional entrepreneurship could be considered a form of path dependency, whereby past activity influences current and future performance (Martin & Sunley, 2006). However, a local culture favorable to entrepreneurship is a unique case in that it does not create negative lock-in effects, but rather helps to overcome such lock-in constellations by promoting the recognition and seizing of new opportunities thereby stimulating structural change and renewal. Therefore, it may be misleading to classify the persistence of entrepreneurial activity as a path dependency phenomenon.

Policy implications

Policies targeting regional entrepreneurship should account for a region-specific culture that is manifest in the values, attitudes, and personality traits of the population and can be significantly shaped by the regional history and the experiences of the population. To safeguard that the region-specific factors are sufficiently accounted for, main parts of the policy should be implemented at the local level.

In regions with a strong entrepreneurial culture, policy should focus on preserving that culture and addressing bottlenecks. In regions where the culture is not favorable to entrepreneurial activity, more effort may be needed to provide

information about the nature and the possibilities of entrepreneurship and to support entrepreneurial values. This may include a key role for the educational system. Given the pronounced persistence of regional culture, policies aimed at fostering this culture are unlikely to produce quick results. For this reason, stimulating an entrepreneurship friendly culture should not be the first priority of a policy that aims to foster entrepreneurial activity in a region.

Due to its slowly changing character the regional culture can be considered a form of durable 'informal capital'. Once established, a regional culture conducive to entrepreneurship will have a lasting impact. A supportive infrastructure can significantly stimulate and reinforce an entrepreneurship-friendly regional culture. This infrastructure may include consulting services, financial services, mentorship, political support, and a supportive public administration. "Entrepreneurial" universities that promote the application of academic knowledge by providing shared facilities and stimulating start-ups could also be an important supportive element (Etzkowitz, 2004).

4. Future Directions

Historical developments can have rather significant long-term effects on a region's entrepreneurial activity. Recent research has revealed an important role of factors such as traditions, mentalities, values, and attitudes of the regional population in these processes (Obschonka et al., 2021). However, the historical roots of entrepreneurship have only recently become a subject of research and our knowledge of the related phenomena is still rather incomplete. Much more research in diverse historical and national contexts alongside better data is necessary to shed more light on the relevant relationships and uncover causal mechanisms.

As in other research areas, interdisciplinary teamwork is essential for achieving meaningful breakthroughs in our understanding of the historical roots of entrepreneurship and development. Economists, historians, sociologists, psychologists, as well as political and cultural scientists must collaborate for achieving significant progress in this field.

Key challenges for future research are broadening the evidence by expanding the analysis of the link between entrepreneurial culture and regional

performance across countries and metrics. Little is known about the emergence and development of culture and the respective time frame. What events and circumstances can be regarded as origins of a certain culture? What are the main elements of a culture such as role models, personality traits, economic structure, and social capital and how do these elements affect different types of entrepreneurial activity? How is the interplay of these factors across diverse regions and contexts? What is the role of formal institutions in the development of regional culture? Answers to these questions would be helpful to better understand a key antecedent of entrepreneurial ecosystems as well.

Key references

- Fritsch, M., & Wyrwich, M. (2017). The Effect of Entrepreneurship for Economic Development—An empirical analysis using regional entrepreneurship culture. *Journal of Economic Geography* 17, 157-189. <https://doi.org/10.1093/jeg/lbv049>
- Fritsch, M., & Wyrwich, M. (2023). Entrepreneurship in the Long Run: Empirical evidence and historical mechanisms. *Foundations and Trends in Entrepreneurship*, 19, No. 1, 1-125. <https://doi.org/10.1561/0300000100>
- Fritsch, M., Obschonka, M., Wahl, F., & Wyrwich, M. (2024). On the Roman Origins of Entrepreneurship and Innovation in Germany. *Regional Studies*, 58, 1446-1463. <https://doi.org/10.1080/00343404.2023.2276341>
- Huggins, R., & Thompson, P. (2021). *A Behavioural Theory of Economic Development*. Oxford: Oxford University Press. <https://doi.org/10.1093/oso/9780192866264.001.0001>
- Wurth, B., Stam, E., & Spigel, B. (2023). Entrepreneurial Ecosystem Mechanisms. *Foundations and Trends in Entrepreneurship*, 19, 224–339. <https://doi.org/10.1561/0300000089>

Additional references

- Etzkowitz, H. (2004). The Evolution of the Entrepreneurial University. *International Journal of Technology & Globalization*, 1, 64-77. <https://doi.org/10.1504/IJTG.2004.004551>
- Fritsch, M., & Wyrwich, M. (2022). Initial Conditions and Regional Performance in the Aftermath of Disruptive Shocks: The Case of East Germany after Socialism. *Industrial and Corporate Change*, 31, 1428-1459. <https://doi.org/10.1093/icc/dtac033>
- Martin, R., & Sunley, P. (2006). Path dependence and regional economic evolution. *Journal of Economic Geography*, 6, 395–437. <https://doi.org/10.1093/jeg/lbl012>

- Obschonka, M., Fritsch, M., & Stuetzer, M. (2021). *The Geography of Entrepreneurial Psychology*. Cheltenham: Elgar.
<https://doi.org/10.4337/9781788973380>
- Obschonka, M., Wahl, F., Fritsch, M., Wyrwich, M., Rentfrow, P.J., Potter, J., & Gosling, S.D. (2025). Roma Eterna? Roman Rule Explains Regional Well-Being Divides in Germany. *Current Research in Ecological and Social Psychology*, 8, 100214. <https://doi.org/10.1016/j.cresp.2025.100214>
- Ochsner, C., & Roesel, F. (2024). Activated History - The Case of the Turkish Sieges of Vienna. *American Economic Journal: Applied Economics*, 16, 76-112. <https://doi.org/10.1257/app.20190686>
- Runst, P., & Wyrwich, M. (2023). Poor soil as a fertile breeding ground: the role of historical agricultural specialization for the persistence of regional differences in crafts. *Annals of Regional Science*, 71, 575–600.
<https://doi.org/10.1007/s00168-022-01137-7>
- Stuetzer, M., Obschonka, M., Audretsch, D.B., Wyrwich, M., Rentfrow, P.J., Coombes, M.J., Shaw-Taylor, L., & Satchell, M. (2016). Industry structure, entrepreneurship, and culture: An empirical analysis using historical coalfields. *European Economic Review*, 86, 52–72.
<https://doi.org/10.1016/j.euroecorev.2015.08.012>

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