VET CENTRES IN THE FACE OF RIS FAILURES

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ABSTRACT:

This paper aims to highlight the relevance of Vocational Education and Training centres (VETCs) in Regional Innovation Systems (RISs). To that end, a literature review is conducted. First, the role of VETCs is placed within the dynamics of regional innovation to define their function. An initial examination is then carried out to determine their aptitude for facing system failures. Findings suggest that VETCs are key actors within RISs and are in an excellent position to handle system deficiencies. For this to happen effectively, specific mechanisms must be in place, and more empirical exploration is required.

Keywords: Vocational Education and Training centres (VETCs), Regional Innovation Systems (RISs), system failures

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The purpose of this article is to shed light on the role of VETCs within RISs. Thus, the first part discusses the position of VETCs in territorial innovation, while the second part outlines their contribution to addressing potential system failures.

i. VET centres within evolving regional innovation systems

Even though the connection between VETCs and regional innovation processes is gaining ground (Lavía et al., 2021; Lund & Karlsen, 2020; Navarro, 2018; Olazaran et al., 2019; Porto Gómez et al., 2018; Simon & Beddie, 2017), their role within RISs remains unclear.

RISs, a term first coined by Cooke (1992), refer to the institutional and socio-cultural settings that seek to stimulate the innovation capacity of regions (Asheim et al., 2003; Coenen et al., 2016; Tödtling & Trippl, 2005). This approach lays the foundation for knowledge flows, leading to collective learning, continuous innovation, and entrepreneurial activity (Lund & Karlsen, 2020). RISs generally consist of two subsystems: one focusing on knowledge exploration and the other on knowledge exploitation (Asheim et al., 2011). As such, the former has traditionally been primarily comprised of the knowledge infrastructure of education and research institutions, while the latter consists of firms, their support agents, and respective activities (Lund & Karlsen, 2020). However, neither of these subsystems can be considered steady any longer, as both are undergoing a broadening of their underpinnings.

VETCs – like all other territorial actors – can be framed within the structure of RISs, where actors are interdependent and constantly interact with one another. In this regard, they have traditionally been classified as teaching institutions, strongly connected to sectoral and industry demands, with their sole mission being the provision of a qualified workforce (primarily in specific sectors of the labour market). Nevertheless, VETCs are now seen as multifaceted entities that also fulfil a variety of mandates in the territory, focused on enhancing diverse capacities in students, enterprises, the labour market, and society. In a nutshell, VETCs are increasingly evolving into multifunctional centres (Navarro, 2018), expanding their role to integrate not only initial education but also non-traditional functions (Rosenfeld, 1998). These include continuous education and other activities designed to boost

territorial development (such as applied research, technical services, promoting entrepreneurship, creating local development strategies, and fostering knowledge linkage). The latter are discretionary functions that emerge in response to a series of trends observed in current economies (Navarro, 2014).

As such, VETCs tend to co-evolve with emerging scenarios (Frenken & Boschma, 2015). In practical terms, this means that VETCs are more flexible and connected to industry, business, and the professions (Lyytinen, 2011) than other educational institutions. Moreover, this approach has broader implications for VETCs: (i) it enhances their institutional capacity through a decentralised, regional, and autonomous perspective; (ii) it raises the standard of education and professional skills; and (iii) it boosts their regional effect by strengthening the skilled labour force and sustainable innovation processes.

In this spirit, VETCs are increasingly recognised as innovation catalysts within RISs, and this is the case in the two RIS subsystems related to exploring and exploiting knowledge (CEDEFOP, 2008; Lavía et al., 2021; Lund & Karlsen, 2020; Rodríguez-Soler & Brunet Icart, 2018; Rosenfeld, 1998). Yet despite several theoretical works acknowledging the role of VETCs in RISs, these institutions have been under-represented in empirical studies (Lund & Karlsen, 2020), partly conditioned by biases that have prevailed in the approach to territorial innovation. To overcome these challenges, the concept of RISs needs to be expanded and certain untapped dimensions should be recognised. This step would shed light on key aspects of VETCs previously overlooked in RISs. In brief:

1) The focus has tended to be on exploring knowledge while leaving the subsystem of knowledge exploitation in the shadows (Navarro, 2018). In this sense, codified or analytical knowledge has been in the spotlight at the expense of the tacit or synthetic knowledge closely related to VETCs (Lund & Karlsen, 2020). Consequently, Tödtling et al. (2020) stress the importance of paying attention to how regions make use of their innovations to solve concrete problems on the ground. In this regard, VETCs do have a say in the matter.

2) The emphasis has been on high-tech and large firms, with SMEs and traditional sectors being ignored (Navarro, 2017). Arendt and Grabowski (2019) point out that strengthening the mechanisms for firms (especially SMEs) through RISs brings advantages to businesses in

any sector. As evidenced by the literature (Albizu et al., 2017; Brunet Icart & Rodríguez-Soler, 2017; Lavía et al., 2021; Matthies, 2023; Porto Gómez et al., 2018), VETCs are direct innovation providers to SMEs.

3) Within RISs, innovation has been understood in a narrow sense, limited to sophisticated technological and business innovation (Coenen & Morgan, 2020; Tödling & Trippl, 2021) that leaves behind alternative, unconventional, or inconspicuous forms of innovation that could be addressing concrete societal needs (Bryden & Gezelius, 2017; Coenen & Morgan, 2020; Raven & Walrave, 2020). This affects VETCs as they are considered to be involved in both sophisticated and inconspicuous innovation (Toner & Woolley, 2016). In addition, their contribution to creating an environment conducive to learning has not been acknowledged as innovation (Matthies, 2023).

4) The multi-level approach to regional innovation remains underdeveloped (Larrea & Estensoro, 2021). Despite the importance of incorporating the local layer in RISs, the mechanisms for linking the local and regional levels remain unclear. In this context, VETCs are acknowledged as territorially embedded strategic actors that can help bridge those two layers and give capillarity to innovation processes (Ibid.).

By exploring these overlooked dimensions of RISs, we can understand the impact of VETCs, leading to the conclusion that they play a crucial role in territorial innovation. As such, they can be active agents in RISs and successfully contribute to compensating for system-level malfunctions or deficiencies, also known as 'system failures' (Asheim et al., 2013).

ii. VET centres confronting system failures

The literature on RISs highlights that barriers from several areas might hinder the innovation process. Among other areas of concern, special attention should be given to the structural obstacles that stem from the system level. Indeed, since innovation processes take place in an interactive context involving various actors, their interplay adds complexity, and consequently, the system itself becomes a potential source for innovation deficiencies. In simple terms, structural barriers to the effective functioning of RISs are increasing.

This is the idea behind the notion of "system failures", referred to as weaknesses at the system level occurring in structural settings where "the complex interactions that take place among the different organizations and institutions involved in innovation do not function effectively"(Asheim et al., 2013, p. 7). Thus, actors and activities do not coordinate appropriately. Consequently, the proper generation, diffusion, and application of innovation are obstructed (Lewis, 2023), resulting in RISs not realising their potential. In this respect, three main types of system failures have been foregrounded (Albizu et al., 2012; Asheim et al., 2003; Martin & Trippl, 2014):

Table 1: Foremost system failures

System failure	Description of malfunctions
Organisational thinness	Key components of RISs are insufficiently developed or even missing. These include, among others, limited innovation capabilities in the territory and weak support for SMEs at the system level.
Lock-in	Institutional, social, or cultural over-embeddedness, implying that the system is unable to adapt to new socio-technological paradigms.
Fragmentation	Deficient interaction and knowledge flow within the RIS, which leads to modest systemic innovation activities.

Source: own elaboration based on Martin and Trippl (2014)

In view of these system failures and their respective concrete malfunctions, we argue that VETCs can contribute to addressing each one through specific undertakings.

1) ORGANISATIONAL THINNESS: *VETCs are agents of the doing, using and interacting (DUI) mode of innovation, enabling them to boost territorial capabilities, particularly for SMEs.*

For the subject matter, SMEs are of special interest, not only due to their importance in local economies but also because they are notably dependent on an enabling environment. However, their needs for innovation are not adequately fulfilled by other actors in the system, such as universities, consultants, and service agencies (Olazaran et al., 2019). Two specific aspects of SMEs might contribute to this shortfall: one is their innovation practice characterised by its incremental nature and involving little disruption, and the other is their external interactive dynamics distinguished by closeness and trustworthiness.

In this regard, VETCs are much better positioned to meet the innovation needs of SMEs than the abovementioned entities (Lavía et al., 2021). Indeed, VETCs are known for providing synthetic knowledge and the DUI mode of innovation[1], which align with the particular features of SMEs. Furthermore, VETCs count on well-established mechanisms to help SMEs access territory-based assets. Given the difficulty of transferring such assets, the long-standing territorial commitment of both SMEs and VETCs facilitates the intensive and trustworthy connection between them. However, further research is needed to determine specific methods for effectively creating this connection in RIS frameworks.

2) LOCK-IN: *VETCs' flexibility and adaptability, along with the 'pull effect' they exert in their environment, contribute to the region overcoming negative lock-in.*

If the context is evolving, RIS components must adapt as well. Therefore, VETCs must maintain their flexibility to stay in line with the industry, labour market, and the rest of societal demands (Martilla et al., 2008). In concrete terms, it is not the organisational structure of the VET skeleton alone that makes this mandate possible, but rather the following factors: (i) its particular place in local and regional economic development, and (ii) its constant and direct interaction with the different societal spheres (Toner & Woolley, 2016). Consequently, VETCs offer valuable operational flexibility for alleviating structural mismatches between physical and human capital and boosting innovation capabilities in society and firms (Lewis, 2023). To summarise, VETCs possess interesting mechanisms to co-evolve with the rest of RISs (Toner, 2010), placing them in a unique position to both embrace and drive the evolution of such systems (López de Guereñu, 2018).

3) FRAGMENTATION: *VETCs are recognised for their capacity to bring actors together and unify the territory. As locally and regionally embedded 'proximity' agents, they have the ability to combat fragmentation within RISs (Larrea & Estensoro, 2021; Toner, 2010).*

Proximity is determined by two factors: geographical and cultural proximity. Regarding the former, the geographic dissemination of VETCs enables them to reach unattended locations, be more easily accessible to a wide range of actors and understand the specific characteristics of diverse places. This is particularly sensitive to SMEs, as locally and regionally anchored

[1] Doing, Using and Interacting (DUI) mode refers to informal learning processes and experience-based *know-how* (Jensen, 2007).

actors that struggle to access established innovation circuits. As such, geographically dispersed organisations, like VETCs, can play a role in bringing knowledge to SMEs and in acting as intermediaries with other actors (Moodie, 2006). Thus, the territorial scope of the VET skeleton skyrockets (Porto Gómez et al., 2018). When it comes to cultural proximity, the longstanding relationships woven with surrounding actors help bring the community closer while strengthening mutual trust (Lavía et al., 2021).

Furthermore, it cannot be overlooked that broadening the mandate of VETCs has implications for their ability to address system fragmentation. VETCs are becoming more prevalent in different societal spheres as they expand their mission to include non-traditional functions; therefore, their potential to unify the diverse actors and realms within the territory is even more interesting (Homs, 2008).

iii. Concluding remarks

If VETCs are recognised as contributing agents to RISs (European Commission, 2019), we can also conclude that they are well-positioned to play an important role in tackling the RIS system failures described above. However, this cannot be taken for granted and needs to be systematically implemented through specific mechanisms. Some initiatives are already being developed to promote innovation within VETCs, with one such example being the Tkgune programme implemented in the Basque VET system, which has been considered a model of excellence by the European Commission (European Commission, 2019). In this article, we attempt to shed light on and acknowledge the key role of VETCs in RISs, highlighting their unique contribution to this framework. We also argue that by expanding the concept of RISs, VETCs will be recognised as crucial agents within them. Therefore, we believe that VETCs could be in a privileged position to directly assist in overcoming RIS system failures. To better understand the active function of VETCs in RISs, further empirical research is needed.

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