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Innovation in sport organisations: the role of formal organisational structures and informal networks

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ABSTRACT

This study examines how formal organisational structures and informal networks shape innovation within sport organisations, using the football academy of KRC Genk as a case study. Drawing on qualitative interviews and social network analysis, we show that a formally established task force can drive innovation, and its effectiveness is contingent upon the members' capacity to build and engage with diverse informal networks. These networks facilitate both idea generation and implementation, especially in environments where innovation must align with core organisational values. While existing literature recognises the complementarity of formal organisational structures and informal networks, this paper offers new empirical insight into how this relationship operates in sport organisations. It demonstrates how task forces can build internal cohesion and leverage external knowledge to embed innovation across the organisation.

KEYWORDS

Sport organisation; social network analysis; innovation; idea journey; team dynamics

Introduction

The rapid uptake of innovation, data analytics, and advanced technological tools has fundamentally reshaped the sports landscape (Watanabe et al., 2021). This shift compels sport organisations to revisit strategic decisions, not only on the pitch but also in organisational structures, processes, and relationships off the pitch (Fried & Mumcu , 2016; Mondello et al., 2014). In this respect, the literature points to the significance of intraorganisational networks in achieving intended targets and managing conflicting dynamics (Gerke & Wäsche, 2019; Zeimers et al., 2019). Indeed, conceptualising and implementing innovative strategies requires coordination across different units and individuals (Gerke et al., 2021). This is particularly challenging in sport organisations, which operate in highly competitive, performance-driven environments. They need to balance long-term strategic goals with immediate performance demands (Slack & Parent,

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2006), while integrating expertise from diverse areas such as coaching, recruitment, sports science, and data analysis. This thus requires both the clarity provided by formal organisational structures and the adaptability fostered by informal networks.

Formal organisational structures, defined as "structures and systems [. . .] to produce programs and to adapt to changes in their environment" (Kikulis et al., 1992, p. 351), typically centre on specialisation of roles and formalisation of rules and regulations. Such structures create an overarching framework that supports accountability, division of labour, and resource allocation. By contrast, informal networks refer to the spontaneous, relational elements that emerge among individuals outside prescribed hierarchical pathways and that can show "how work and advancement actually take place in an organization" (Quatman & Chelladurai, 2008, p. 351). These informal ties can facilitate rapid information flows, encourage flexible problem-solving, and – at times – either reinforce or circumvent formal rules.

While the significance of intraorganisational networks in enhancing performance and ensuring the success of strategies is well documented (Barrett et al., 2022; Pieters et al., 2012)., the precise ways in which formal organisational structures, such as specialised task forces, and informal networks, such as impromptu "corridor conversations", intersect to promote or hinder innovation remain insufficiently understood. In particular, there has been limited examination of how these networks are structured, how individuals and roles are configured, and how decision-making processes unfold in practice. This study seeks to address the gap in the literature by examining how formal organisational structures and informal networks collectively influence the generation and implementation of innovative strategies in sport organisations. Building on Laursen and Salter's (2006) conceptualisation of "innovation strategy" as choices regarding internal and external sourcing of knowledge, this study aims to examine how structural mechanisms, individual actors, and relational dynamics intersect to advance (or impede) strategy formation and execution.

Against this background, this study poses the following research question: *How do formal organisational structures and informal networks influence the generation and implementation of innovative strategies in sport organisations?* To respond to this question, we present a single-case study of the football academy of KRC Genk, which instituted a formal task force – the Genk Methodology Task Force (GMTF) – to conceptualise and implement the "Blueprint", a strategic vision crafted to redefine the academy's approach to developing talented football players in the age of data and technology. Through this case study, we show that sport organisations adopt formal organisational structures to establish a clear innovation agenda aligned with their core values, while avoiding "pro-innovation bias", the assumption that innovation is by default almost always favourable (Sveiby et al., 2012). These formal organisational structures, designed to provide clarity and coherence, are also necessary to address communication barriers and mitigate resistance to change. Importantly, they are composed of individuals selected from within the organisation, reflecting a bottom-up approach, and based on their external expertise. The inclusion of external knowledge helps challenge the status quo within traditionally conservative environments, thus promoting innovative thinking. We further highlight how informal networks play a critical role in bridging the gaps that arise from the limitations of formal structures. While formal structures define roles, resources, and goals, informal networks facilitate the rapid exchange of ideas, challenge existing

assumptions, and play a significant role in both the idea-generation phase and the implementation phase. In the idea-generation phase, these networks encourage a wide diversity of opinions and foster creativity, while in the implementation phase, they help overcome resistance and ensure smoother adoption of new practices. This combined influence of formal structures and informal networks contributes to a better understanding of the success or failure of innovative strategies within sport organisations.

Literature review

The study of innovation from an intraorganisational perspective has gained significant attention, with researchers increasingly recognising the critical role that both formal organisational structures and informal networks play in shaping innovation processes (Marocco et al., 2024; Todorov et al., 2024). This literature review examines the intraorganisational perspective on innovation, first exploring how formal organisational structures and informal networks coexist and influence innovation processes. The review then examines innovation and networks specifically within sport organisations, before focusing on the particular context of the football industry to identify key gaps in our current understanding of how these structures and networks operate to influence innovative strategies.

Intraorganisational perspectives on innovation

In recent decades, an increasing number of management and organisation studies have started to look at the innovation process from an intraorganisational perspective (Aalbers, 2020; Lomi et al., 2014; Rodan & Galunic, 2004), highlighting the importance of both formal organisational structures and informal networks (McEvily et al., 2014; Maoret et al., 2020). This perspective recognises that "innovation is the multi-stage process whereby organisations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace" (Baregheh et al., 2009, p. 1334). More specifically, the innovation process is defined as the systematic development and strategic selection of ideas, followed by their transformation into actual innovations (Jacobs & Snijders, 2008). As discussed by Biancani et al. (2014), rules are used for allocating resources and planning activities, and they are needed to coordinate and supervise the functioning of the organisation. At the same time, the development and adoption of innovation within organisations requires multiple interactions and exchange of knowledge between actors, which can be established via informal networks based on personal relationships (Bakker et al., 2022; Karlsson & Björk, 2017; Scarbrough, 2003).

The coexistence of formal organisational structures and informal networks, and the impact they have on innovation, has been subject to several studies since the pioneering work of Allen (1977). Informal networks provide access to tangible and intangible resources (Burt, 1992) – but this occurs also via formal organisational structures (Maoret et al., 2020). Formal organisational structures and informal networks are not completely disconnected but reinforce each other and are usually established to achieve the same objectives (McEvily et al., 2014). Social behaviours are intricately tied to their context, making it impossible to separate them from the structural design of an organisation (Soda

& Zaheer, 2012). In this vein, DiToma and Ghinoi (2021) argued that formal organisational structures and informal networks coexist in organisations, while hierarchy is not always an effective mechanism of control due to internal and external challenges. Sosa et al. (2015), in their work on intraorganisational communication networks, pointed out that informal networks need some environmental specificities to occur, such as the presence of third parties between formal teams, while others (e.g. Rank, 2008) claimed that organisational managers play a key role in shaping both formal and informal networks. Nevertheless, scholars tend to agree that formal organisational structures enable the efficient allocation of resources, while informal networks support exploration and the exchange of new ideas (Mom et al., 2015; Wang et al., 2014); and that formal organisational structures can support the initial phases of the innovation process, while the last phases can be supported by informal networks (Maoret et al., 2020; Perry-Smith & Mannucci, 2017).

Recent contributions have further enriched our understanding of how these dual structures interact within organisations. Todorov et al. (2024), through a systematic review of empirical studies, highlight that both formal and informal innovation networks serve as key vehicles for knowledge transfer and coordination. Their findings suggest that network configuration – whether open-specialised or closed-diverse – can significantly influence the quality and speed of knowledge diffusion. Importantly, the intensity and quality of interaction between participants, rather than merely the presence of formal or informal ties, plays a decisive role in sustaining network performance and promoting innovation. Their analysis also reveals that informal networks can offer the flexibility required for rapid adaptation, while formal networks tend to provide structure and resilience, indicating the need for a balanced configuration that avoids overembeddedness or fragmentation. Complementing this, Marocco et al. (2024) offer a novel perspective on intraorganisational innovation by exploring how informal social structures can be leveraged to support innovation. Their findings highlight the importance of identifying influential actors and uncovering hidden network dynamics within formal organisations, reinforcing the view that innovation depends on both visible structures and informal relational pathways.

For a long time, organisations and managers have invested in organisational structures capable of supporting informality and knowledge exchange, but not all attempts have been successful (Allen et al., 2007). This can be explained by what Soda and Zaheer (2012) called consistency and inconsistency between formal organisational structures and informal networks. Too much overlapping between formality and informality produces overembeddedness, relational lock-in, and therefore the inability to access diverse sources of information, which is vital for innovation (Ibarra, 1992; Rank, 2008). At the same time, if interlinkages between formal organisational structures and informal networks are encouraged, organisations might find it difficult to maintain additional structures and individuals can feel the pressure of interacting with different actors with conflicting expectations.

Innovation and networks in sport organisations

The competitive pressures of the sports industry have elevated innovation into a fundamental requirement for organisations seeking lasting success (Seifried et al., 2017). A sport organisation, by its very nature, not only focuses on economic and social success but also strives to achieve excellence in sports performance (Ratten, 2010). In this context, innovation can offer crucial solutions in the quest to enhance

performance (Ringuet-Riot et al., 2013). In recent years, the study of sport management has increasingly recognised the significance of both formal organisational structures and informal networks (Gerke & Wäsche, 2019; Zeimers et al., 2019), and several studies have adopted a network approach for investigating these structures. Most of them focus on interorganisational networks (Bond et al., 2020; Jones et al., 2017, 2018; Sallent et al., 2011; Schyvinck et al., 2022), but there is also a growing stream of research specifically focusing on intraorganisational networks (Dizdari & Seiler, 2020; Shah et al., 2023; Takamatsu & Yamakita, 2022). Moreover, a recent literature review focusing on sports data in management research (Fonti et al., 2023) has contributed to advancing network-related theory, investigating how individuals' decisions affect their networks in sport organisations.

Existing studies, however, fail to focus on the specific impact of such structures on the innovativeness of organisations. For example, Schlesinger et al. (2015) have examined the process through which sport clubs recruit personnel, and they found that formal organisational structures (e.g. committees) provide guidance and play a key role at the beginning of the process, but at the same time informal networks become more relevant for achieving a smoother and goal-oriented process. In their analysis of a network of referees affiliated to the Italian National Olympic Committee, Manuti et al. (2016) discovered that both formal organisational structures and informal networks are needed for improving intraorganisational processes. Doherty et al. (2013), in the context of community sport clubs, stressed that establishing formal organisational structures is a critical challenge for sport clubs, which mainly rely on informal networks and connections. The intertwine between formality and informality has also been discussed by Delshab et al. (2021), who suggested that managers in community sport clubs should facilitate the diffusion of knowledge within organisations. Their paper focuses on knowledge management, and it is one of the few studies with a link to innovation. Furthermore, while the importance of innovation has been acknowledged in sport management, existing research has primarily focused on the later stages of the innovation process, such as adoption and implementation, neglecting the idea generation phase (Gerke et al., 2017; Kellison & Hong, 2015; Wolfe et al., 2006).

The gap in the literature is even more pronounced with regard to our current understanding of the football industry, which has undergone significant transformations facilitated by media coverage and the utilisation of big data (Leach & Szymanski, 2015). The increasing professionalisation of football clubs in the 1980s led to a focus on specialised training, enhanced skills, and increased complexity (Dowling et al., 2014). Within this evolving landscape, innovation has emerged as a crucial factor in enhancing the identity of sport organisations and players, ultimately improving overall performance. Occhino et al. (2013) examine different conceptualisations of social networks and their relevance in understanding how high-performance football coaches learn through these networks. In a related study, Parnell et al. (2021) focus on recruitment practices within the football industry, specifically investigating the role of sporting directors in creating middle-management positions within elite professional football clubs in England. These studies contribute to expanding our understanding of the role of networks and recruitment practices in football. However, the specific influence of

intraorganisational formal structures and informal networks on implementing innovative strategies, respectively, remains unexplored.

More specifically, despite the growing recognition of the importance of intraorganisational networks for a strategy's success (Gerke & Wäsche, 2019; Slack & Parent, 2006; Zeimers et al., 2019), and more specifically for assessing strategy-related aspects such as leadership, coordination, and external orientation (Naraine et al., 2016; Naraine & Parent, 2016), there is a notable gap in the literature when it comes to understanding *how* such networks are structured; moreover, it is still unclear what is their relationship with the evolution of successful – or unsuccessful – innovative strategies, considering both the generation and implementation of such strategies. To fill this gap, this study examines how formal organisational structures and informal networks established by individuals influence the development and implementation of innovative practices in sport organisations.

Methodology

Case study

This research adopts a case study approach (Yin, 2018), focusing on the football academy of KRC Genk. Our case study is selected based on its potential to be unusually revelatory, serving as an extreme exemplar, and offering opportunities for unusual research access (Eisenhardt & Graebner, 2007).

Firstly, it has the potential to be unusually revelatory because it bears several features that are unique for sport organisations. As demonstrated by Ryom et al. (2020), unique features can include (1) a culture of knowledge sharing, (2) the ability to `accommodate a broad diversity of players, and (3) an openness towards new ideas. In particular, the first and third feature are reflected in the way KRC Genk set up a dedicated task force – the GMTF – to develop the Blueprint, a unique and holistic training methodology focusing on various aspects of player development. What sets the GMTF apart was its composition of members across all levels of the academy, including several part-time members with full-time positions in various industries, ranging from education to manufacturing. This diversity brought a unique perspective to the task force, enhancing its approach to player development.

Secondly, the football academy of KRC Genk serves as an extreme exemplar for nurturing top-tier talent for European football, including stars like Kevin de Bruyne and Thibault Courtois, who were contenders for the 2023 Ballon d'Or and Yashin Trophy. The CIES Football Observatory recognises Genk as one of the best academies worldwide (Poli et al., 2023) – a sentiment shared by top managers such as Jürgen Klopp: "[. . .] Imagine the world of football, how it would be without all the wonderful players born or raised or educated at Genk?" (Klopp, 2019).

Thirdly, this study benefits from unique research access, as one of the researchers previously worked at the football academy of KRC Genk. This connection enabled in-depth insights into internal responses to the development and implementation of the Blueprint and the internal conflicts that were triggered. The existing relationship between the interviewer and the participants was essential in gaining access to key informants, many of whom may not have agreed to partake otherwise. This familiarity also fostered a sense of

trust, allowing participants to share detailed and honest insights, which enriched the data (Ganga & Scott, 2006). Introducing innovative methods often encounters resistance, sparking sensitive debates. For example, while data analysis is now prevalent in top clubs, designing training methods based on cognitive data is still controversial, posing challenges like measuring psychological factors and addressing fears of quantifying unpredictable elements.

Researcher positionality and bias mitigation

Among the research team of five, one of the researchers had an affiliation with the KRC Genk, a connection that enabled extensive data collection and participant engagement. This unique positioning, while potentially raising concerns about bias, was carefully managed to ensure methodological rigour. To address potential preconceived notions, we implemented a robust approach to research transparency and rigour. The researcher with club connections conducted semi-structured interviews, leveraging established relationships to facilitate in-depth participant interaction. Critically, all subsequent data analysis, including interviews and questionnaires, was undertaken by other independent authors with no prior organisational involvement, creating a clear separation between collection and interpretation (Corbin & Strauss, 2008).

Method

We used an exploratory sequential design (Fetters et al., 2013) where the qualitative phase of data collection and content analysis is followed by a quantitative phase using network data examined via Social Network Analysis (SNA), in order to provide a comprehensive view of the context in question. This approach ensured that by identifying key themes and patterns through qualitative research, the study was able to develop a quantitative instrument that meaningfully captured all relevant dimensions of the phenomenon. Data were first collected via semi-structured interviews and questionnaires; the data collection process started in May 2022 and concluded in July 2022. We included all coaching staff ($n = 49$), as they are responsible for defining and implementing novel training approaches and they are directly involved in the adoption of the Blueprint.

Interviews were undertaken to capture the depth, detail, and underlying meanings associated with innovative practices. A semi-structured interview approach was adopted with an open framework to encourage focused, conversational, and two-way communication. The approach is suitable for this exploratory research, which is investigating opinions, experiences and the expert knowledge of participants with respect to a topic that is scarce in literature and is allowing following up for further information and a clarification of the issues mentioned (Hutchinson & Wilson, 1992). The interviews centred around four key areas: the academy's vision, the importance of innovation, the recruitment process at KRC Genk, and the participants' experiences in the football industry. Additionally, we explored the relationships between staff and external entities. In total, we conducted 14 interviews until data saturation was reached. Saturation was defined as the point at which no new themes, insights or perspectives emerged, and subsequent interviews yielded repetitive information (Guest et al., 2006). Interviews were

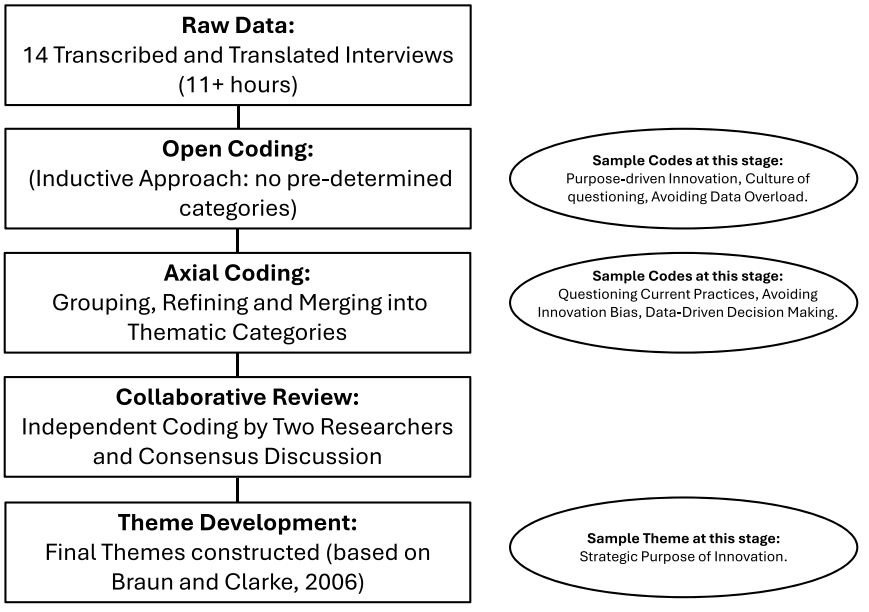

Figure 1. Visual overview of the coding process.

audio-recorded, transcribed, and translated from Dutch to English. The translation of interviews was conducted by a fluent bilingual speaker proficient in both languages, ensuring that the cultural and linguistic nuances of the target population were accurately captured. The qualitative data analysis was based on over 11 hours of interview material. All interview transcripts were anonymised and pseudonyms were used, to protect the participants identities, and in line with ethical guidelines. Transcripts were uploaded to NVivo for data analysis. All data were thematically analysed according to the guidelines set out by Braun and Clarke (2006). The process involved multiple cycles of coding (see Figure 1), including an initial open coding process, allowing key concepts to emerge without predetermined categories. This inductive approach was chosen to ensure that the findings were grounded in the participants lived experiences. In the second coding stage, axial coding was used to refine and group codes into broader thematic categories (Miles et al., 2014). This involved identifying relationships between codes, merging similar concepts, and combining subcategories into overarching themes. To further enhance rigour, coding was blindly conducted by two research team members, followed by discussions to resolve discrepancies and refine themes. Once themes were determined, the themes formed the foundation of the study's findings, as outlined in Braun and Clarke's (2006) approach to thematic analysis.

Building from the exploratory qualitative results, questionnaires were created for collecting intraorganisational network data. They were structured into three sections: the first section was dedicated to extrapolating personal information; the second section was dedicated to identifying individuals' alignment with the club's identity; and the third section was used for mapping informal advice network structures.

Wäsche et al. (2017) and Gerke et al. (2021) used SNA to investigate network structures which can emerge from both formal and informal relationships within sport organisations. In their view, the network perspective can be useful in sport research, because it enables researchers to understand the innovation drivers within an organisation, and what can be done for supporting the innovation process. Informal relationships within organisations have long been recognised as fundamental for supporting intraorganisational processes (Burt, 1992; Kilduff & Brass, 2010). In this respect, advice networks – as informal relationships – are particularly relevant because they enable individuals to share information related to their strategic view, make informed decisions, and provide feedback about specific activities. There is also a strong link between the way these networks are structured and the influence each single actor can exert in the organisational ecosystem (Sparrowe & Liden, 2005) – and thus affecting creativity and innovation.

We focused on two different types of advice: (i) exchange of advice for generating ideas; (ii) exchange of advice for implementing ideas. Social networks influence creativity and innovation (Perry-Smith & Mannucci, 2017; Phelps et al., 2012), and in our research we considered the exchange of advice as a trigger for enabling innovative approaches. Sharing advice is key for generating and implementing an idea. At the same time, these phases are inherently different and may be supported by different types of network structures. To gather the network data, we used a roster method (Wasserman & Faust, 1994). We included in the questionnaire the full list of 49 individuals working in the academy, and we asked respondents to indicate if they received or shared advice with any of the individuals in the list (during the season of 2021/22 season). In total, we received 36 questionnaires, which corresponds to a 73% response rate. Networks are first assessed by looking at their QAP correlation (Krackhardt, 1987) and density, measured as the proportion of active ties in the network over the total number of potential ties. Then, to identify bottlenecks and facilitators of innovation at node level, we used the following network statistics and algorithms: betweenness centrality and Burts' effective size. Betweenness centrality and effective size enable to detect the presence of brokers and structural holes (Borgatti, 2005; Burt, 1992; Everett & Borgatti, 2020), by identifying those actors with a strategic advantage in the diffusion process because of their network position. Betweenness centrality can be estimated for complete networks, and it is defined as "the share of times that a node i needs a node k (whose centrality is being measured) in order to reach a node j via the shortest path" (Borgatti, 2005, p. 60), while Burt's measure for effective size is estimated as the difference between the ego network size and the average number of connections of the alters within the ego network. Finally, we used the Girvan–Newman algorithm to map cohesive subgroups by using a deterministic approach: this algorithm searches for network communities by calculating the edge-betweenness for all connections in the network, and then progressively removing those with a higher score from the network, obtaining a series of communities where nodes are interconnected with other nodes within the same community but not with those outside the community (Girvan & Newman, 2002). Data were analysed using UCINET 6 (Borgatti et al., 2002).

Findings

This section explores the influence of formal organisational structures and informal networks in generating and implementing innovative practices within the football academy of KRC Genk. Through qualitative analysis, we first examine what innovation means for the academy and why it is central to their player development strategy. This context then helps explain the creation of the GMTF, a formal organisational structure designed to drive innovation while navigating the challenges and opportunities posed by informal networks. In doing so, we explore the academy's commitment to innovation and the rationale behind its structured approach. Our social network analysis then builds on these findings by examining how academy staff, both within and outside the GMTF, exchange advice to generate and implement new ideas, ultimately highlighting the role informal networks play in either enhancing or hindering the impact of formal organisational structures in practice.

The strategic purpose of innovation

The success of KRC Genk's academy is a direct result of their holistic and innovative approach to player development (Ryom et al., 2020). Their practices set them apart and have been a driving force behind their success, focusing not only on technical aspects such as game principles and exercises but also on innovative ways to manage players and coaches, such as setting rules for the use of social media. This forward-thinking approach to player development demonstrates KRC Genk's commitment to innovation and their willingness to try new and unconventional methods to achieve success (Table 1). Indeed, Nicky emphasises that "innovation is very important [. . .]. Football evolves and so do we all. Technologies evolve and it would be sad if you would stick with what worked a year, five years, or ten years ago". This highlights the need for coaches to remain open-minded and to constantly look for ways to improve and innovate their coaching techniques and strategies. In this regard, Teddy emphasises that "there are so many things in our proximity and in the world, which we shouldn't be shy to try to get the knowhow". While Teddy acknowledges that the academy still needs to specialise in areas such as mindfulness and lifestyle, "there surely is an open attitude towards innovation and reform". Related to innovation, Jaap highlights the increasing importance of data and analytics in football, stating that "if you don't work with data, you don't really know". Coaches must incorporate data analysis into their coaching techniques to identify areas for improvement and create strategies that cater to the development of their players. Overall, the academy staff stress the importance of innovation and keeping up with technological advancements to stay competitive in the sport. They highlight the need to be open-minded, creative and knowledgeable, to utilise innovation effectively and to stay ahead of the competition.

At the same time, academy staff members acknowledge that there is a danger to innovation, in particular because "people make a full swing and tend to go into extremes" (Jaap). They warn that innovation might go so far as to take away the need for human thought and creativity. Indeed, Jaap explains that some clubs have adopted a "data machine [. . .] that looks so far ahead, that it might even scare you". Almost every decision is based on algorithms, with no space left for creativity: "That is what I mean with

Table 1. Qualitative thematic analysis: key themes, sample codes and sample interview quotations.

Theme	Sample Codes	Sample Interview Quote
1. Strategic Purpose of Innovation This theme shows innovation must align with the long-term vision and core values of the organisation rather than being pursued for its own sake.	Avoiding innovation bias Questioning Current Practices Data-driven Decision Making	"[Innovation] goes hand in hand with defining your own vision. [. . .] Questions will always come back to: why? [. . .] Tell me why we should do that. That is innovation as well. Not a material innovation, but it is . . . why would we do that really?" (Jaap) "I think that we as an academy should do anything in our power to question everything. In all we do, it should be: Why do we do this? and what will be the result of that? We should measure much more, because we currently don't do that enough". (Andy) "We have to work more with [data] analyses, without over analysing things, because that is incorrect in my opinion. You can pull so much data from a game or a training session, you could kill someone with it, so to say, but that isn't needed. So the interpretation of data is enormously important". (Nicky)
2. Role of formal organisational structures This theme shows the importance of adopting a formalised vision and structured approach to innovation.	Structured approach to innovation Formalised Vision Balancing Innovation and Stability	"With this blueprint, we're actually trying to instil something that will put the club on a higher level. What kind of football would we like to play? And not only under 12, or under 15, but with our first team and how are these linked with one another". (Jaap) "We actually want to get to one vision about our values and the ways in which we treat each other, the company culture, so to say, the performance level and how that should be. We have taken steps already and there are certain things resulting from those steps. Creativity is one of those things". (Andy) "We always have to be open-minded to [innovation], without abandoning our vision. Because the club has a vision of its own, a specific way of working, of training, and we don't want to keep changing the way we're training continuously, year after year. It would leave people without point of reference" (Wes)

(*Continued*)

Table 1. (Continued).

Theme	Sample Codes	Sample Interview Quote
3. Role of informal networks This theme shows the importance of informal networks in ensuring open communication, breaking down silos, and facilitating collective decision-making within the organisation.	Clear communication Open dialogue Encouraging debate	"I think that everything is about a good connection, good communication and good decisions, but you can only make the right decisions when the communication is truly correct". (Nicky) "I think that when you are a club with apparently high ambitions, you do have to have to courage to say the things like they are. Agreed or not, and then get the idea off the table. When it's been on the table, you can have your arguments for or against it, but it can't be that when we are deciding on something together here, I suggest something to you and you say 'No', that I will take a different route to still get that decision pushed through. [. . .] If it happens, it is just wrong to me". (Denis) "There should just be more space for debate, in my opinion. I think that we don't have many discussions with each other [. . .] you want to create some kind of family among the coaches, but you're already separating them here. Without realising it, you make a separation. We got two separate rooms. There is a room with some of the trainers and there is another room with some other trainers. No, just put them all together". (Dwight)
4. Influence of external expertise This theme shows that external knowledge from other industries introduces fresh perspectives into the academy.	External industry Educational sector Research company influence	"Kaizen is actually a principle [. . .] based on all co-workers thinking like, how could I improve things? That way everything will see improvement in the long run". (Ryan) "I want to bring the expertise I acquire from [football] in [education] and vice versa. [. . .] Genk got an education person when they got me and that is my strength, my unique strength, my DNA". (Ole) "We, as physical department, collaborate with Catapult, a GPS tracking system, and with Optimal, a data processing system. Those are two separate companies, so the raw data is being imported in a system to make analyses. The people there, whom we are communicating with, they have so much know-how from other clubs, experiences, and from research. Those are two external sources that offer many new innovative ideas. Those are important things to me". (Peter)

"innovation, it can completely break loose and go so far that you don't even have to think anymore". In addition, several staff members warn of herd behaviour, where coaches blindly adopt innovation without understanding why. Ryan explains: "What bothers me in football is that people follow along without knowing why. They blindly copy". In this respect, Eric warns that there is a tendency to use many new tools without significant added value, reiterating that "we should not forget the foundations of professional football. It's still the ball, the field, and the players on the field".

Throughout the interviews, academy staff members also noted that the world of innovation in football is a complex one, and there are several challenges that coaches must navigate. One such challenge is dealing with different interpretations of the data, which vary depending on what your objectives are. Nicky explains: "Is your objective injury prevention, or is it the effectiveness in certain moments regarding a certain team tactical matter? Those are very different objectives which might be equally important [. . .] So the interpretation of data is enormously important". It can also be difficult to strike a balance between the intuition of a coach and the supposed objectivity of data. As Phil notes: "Of course, data is very important and we should do more with it [. . .] But sometimes you need to go from here, your gut feeling. You have to find a balance". Another challenge is innovation overload. With so many innovations available, it can be easy to get lost in the weeds and lose sight of the bigger picture. This can, for instance, lead to overusage of technological tools and to over-analysis of data, where coaches spend too much time looking at the numbers without really adding any value. Finally, there is the issue of communicating complex information. Even when coaches are able to make sense of information at hand, it can be difficult to convey that information to others in a way that is both understandable and actionable. This requires strong communication skills and the ability to distil complex information into more easily digestible insights. Overall, the successful use of innovation in the academy requires not just technical expertise, but also an understanding of the nuances of interpretation, analysis, and communication.

Against this background, there was a strong consensus among academy staff to understand the purpose and added value of innovation (Table 1). Jaap explains: "Questions will always come back to: why? [. . .] Tell me why we should do that". At the same time, Andy adds that "we as an academy should do anything in our power to question everything. In all we do, it should be: Why do we do this? And what will be the result of that?" To this end, they stress the importance of creativity in innovating, stating that "with every innovative idea we could use or bring to life, we have to consider carefully if it really is to just work innovatively". Andy suggests that coaches should consider creative ways to challenge top clubs with fewer resources, rather than just focusing on high-end technology and data, noting that "we as club [. . .] have to be very creative [to establish] ourselves among the top clubs with far less resources and far less history". While innovation can enhance performance, it must be sought in a way that complements, rather than replaces, human expertise and creativity. By finding a balance between innovation and traditional training methods, and by critically evaluating new approaches, coaches can help players reach their full potential while maintaining a strong foundation in knowledge and expertise.

When it comes to incorporating innovation into the academy, a key question is how to do so in a way that is both purposeful and valuable. What exactly makes an innovation valuable, and how can academies define the purpose and added value? According to

Nicky, the goal should not be to innovate for its own sake – instead, there should be a clear "why" that aligns with the academy's goals. As they note, "If a 'why' can be given as explanation and that matches with what you actually want to do in your academy, I think you got yourself a win-win situation". This is why it is crucial for academies to define their vision and goals from the outset. As Jaap explains, "innovation goes hand in hand with defining your own vision". Similarly, Ryan notes that it is not enough to simply adopt new ideas – coaches need to be convinced of the philosophy behind the innovation and the reasons why they should implement it: "We need to trigger trainers to know why they do things". In short, there needs to be a clear purpose and vision from the outset, with a focus on explaining the "why" behind new ideas and approaches.

The adoption of formal organisational structures in navigating change and building consensus

In order to create a clear purpose and vision, the academy established a formal organisational structure, the GMTF, and created the Blueprint. Indeed, Jaap makes explicit reference to it:

> According to our vision [. . .] we strongly believe in a holistic approach towards the future. Much stronger than we did in the past. To come back to that, [we have] the Blueprint we started to use within the academy. [. . .] With this Blueprint, we're actually trying to install something that will put the club on a higher level [. . .]. So, that is starting to form our foundation at the moment.

In order for the Blueprint to succeed in gaining support, the exchange of advice among staff members of the academy is fundamental. In this respect, supporting the generation of new ideas and their implementation requires different approaches. Brainstorming is one of these approaches, and it has been observed that the more individuals were able to informally receive and share advice with others, the more they feel they were working on something innovative. As Denis reports, "I think that when you are a club with apparently high ambitions, you do have to have the courage to say the things as they are. Agreed or not, and then get the idea off the table". Individuals affiliated to the GMTF strongly identify themselves with the Blueprint approach, and we see it as a potential driver for their network strategy when it comes to obtaining or sharing advice for generating new ideas. For example, in the academy there are varying viewpoints on whether the technical development or cognitive development of a player should take precedence. In this sense, the Blueprint's potential for success lies in its ability to reconcile these differences by creating a comprehensive vision that balances both perspectives. As Andy notes:

> There are different opinions on what Brain Mastery [cognitive training] is. Some say it is the Holy Grail, other say that Ball Mastery [technical training] would be that. I believe that we have to consider them in combination and therefore we worded that clearly in the Blueprint.

The narrative changes when it comes to practically implement ideas, because it seems that GMTF members tend to use their connections outside the academy. For example, Ryan is working for a large organisation in which they abide by the principle of Kaizen[1] which they in turn apply in their daily routines at the academy of KRC Genk: "Kaizen is actually a principle [. . .] based on all co-workers thinking like, how could I improve things? That way everything

will see improvement in the long run". Similarly, Ole states: "I want to bring the expertise I acquire from [football] in [education] and vice versa. [. . .] Genk got an education person when they got me and that is my strength, my unique strength, my DNA". These ties with external organisations are supposed to support the team in adopting new ideas, because they are fundamental for acquiring knowledge which is not available internally. At the same time, acquiring external knowledge may be wasted when there is no exchange of advice within the organisation, and this is what happened in the academy. As a result, the task force benefited from strong connections with outside sources of knowledge, but its members were not fully capable of spreading new (external) ideas within the academy – at the time of implementing such ideas. In this respect, Dwight argues that "there should just be more space for debate", which is reinforced by Jaap, who believes the academy should give "people the opportunity to connect with each other". As also Nicky explains: "I think that everything is about a good connection, good communication and good decisions, but you can only make the right decisions when the communication is truly correct".

In addition to encountering communication difficulties, certain aspects of the Blueprint, particularly the emphasis on cognitive training, faced resistance from some individuals. Teddy expressed his concerns:

> The only thing is, that when we're talking about the cognitive aspect, I have recently felt resistance to innovation in that domain. To that I say, well, we have tried to make headway, but as there are some [staff members] who aren't convinced, we'll respect [that]. And you can try to fight like Don Quixote. But sometimes you'd better say, I'm not picking this battle, because fighting is useless.

To this end, Jaap suggested that the GMTF should have involved club directors and other club members not directly involved with the academy, to create a stronger mandate: "We should've have engaged [the club direction], and maybe other people as well, in our working group back then, to make a much stronger mandate". Despite this resistance, the GMTF was able to successfully develop the Blueprint and effectively spread this vision by influencing other staff members through informal networks structures – as the analysis of the following subsection demonstrates.

Informal advice exchanges in idea generation and implementation

What emerged from the content analysis can be summarised as it follows: innovation and technological advancement are important, but they must be aligned with the organisation's values and achieved by nurturing an open-minded and collaborative environment; communication and the exchange of advice become fundamental in this process, but individuals must be aware of (a) over-enthusiastic behaviour towards innovation, (b) innovation overload, and (c) communication difficulties; the two phases of generation and implementation of innovative strategies follow different paths, and are influenced by different formal and informal (organisational and relational) aspects. Our next question than was: building from the first qualitative results, how can we use quantitative (network) data to generalise these initial findings?

As a first step in analysing the idea generation and idea implementation networks, we created their corresponding di-graphs[3] by using NetDraw from the Ucinet package (Borgatti et al., 2002). Figures 2 and 3 present the informal exchange of advice – for

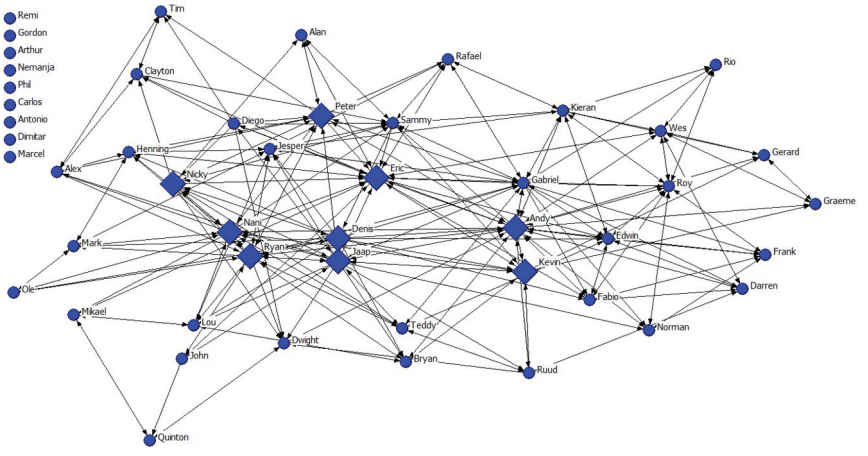

Figure 2. Idea generation advice network.

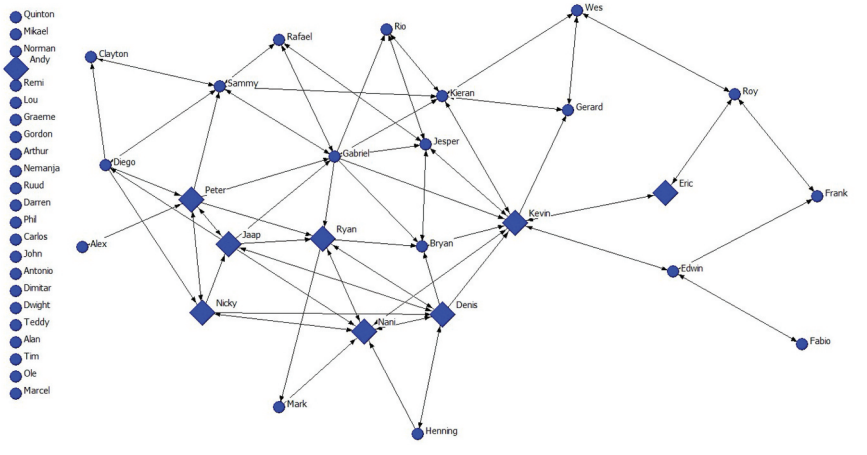

Figure 3. Idea implementation advice network.

generating and implementing an idea, respectively – between the coaching staff of the academy; diamond nodes with a larger size identify the GMTF members, while other staff members are represented by circle nodes with a smaller size.

In terms of global measures, the two networks present both similarities and differences. They can be considered similar because overall they present similar structural patterns: the QAP correlation is equal to 0.42 and statistically significant, which means that actors are likely to have similar relationships in both networks, but not completely overlapping. On the other hand, the idea generation network is three times denser than the idea implementation one (0.12 against 0.04). This means that members of the academy often tend to exchange advice with the same people for generating and implementing ideas, but when it comes to generating ideas, they seem inclined to connect with more people, compared to the advice network developed for implementing

ideas. Such a difference is not a surprising result. Often the generation of new ideas require diverse input and exploration of opportunities to trigger creativity. And as such, organisational members might reach out to more. Exploitation, instead, requires efficiency and therefore less connection to reduce redundancy. This is aligned with one of the main findings from the first exploratory qualitative part, where we noticed the presence of communication issues and the problem of conveying information to different members of the academy in a way that is both understandable and actionable. Denser networks can be problematic for reaching innovative solutions, because such structures promote conformity and *de facto* reduce the probability of coming up with something disruptive but potentially beneficial for the organisation (Perry-Smith & Mannucci, 2017). However, in the football academy of KRC Genk this might have been useful for brainstorming activities, as indicated by Denis when he discussed the importance of sharing thoughts and then getting ideas "off the table" if not agreed among team members.

The network statistics used for identifying brokers and individuals spanning structural holes are presented in Table 2. Six members of the GMTF are among the top brokers in the idea generation network, while five of them are considered top brokers in the idea implementation network. When considering effective size, for understanding who is able to fill structural holes and therefore "controlling" the advice network, the importance of GMTF members is even higher: most of them, if not all of all of them, are among the top actors for their capacity to fill structural holes in both the idea generation and idea implementation network. GMTF members seem to have a key position in the advice network, but we cannot assume that they act as a cohesive subgroup. This can be inferred only by looking at the cohesive subgroups obtained via the Girvan–Newman algorithm. Figures 4 and 5 show the communities detected using this algorithm in the idea generation and idea implementation network, respectively; in these figures, nodes belonging to the same community have the same colour. While in the former it is nearly impossible to detect the presence of separated communities, apart from those in the periphery of the network, in the latter we can see clear separated structures. One of them, with nodes highlighted in sky blue, almost overlaps with the GMTF, since six of its members are included in this community – which is made up of eight individuals. Hence, GMTF members are central in both informal networks, but while in the idea generation one, they do not form a separate community, when it comes to exchange advice for implementing ideas, they are more cohesive. Additionally, they use their external relationships to influence internal processes and practices, leveraging on this cohesive GMTF community they have been able to create when exchanging advice for implementing new ideas.

In this context, GMTF members act as prominent brokers capable of spanning structural holes. They connect individuals within the academy, and even if they are not a cohesive group in their networking approach – or perhaps it is exactly because they are not playing as a cohesive group in this phase of the idea journey – they are in a position that enables them to potentially influence the entire academy. Notably, Andy, a member of the GMTF explains: "We actually want to get to one vision about our values and the ways in which we treat each other, the company culture, so to say, the performance climate and how that should be".

Table 2. Betweenness centrality and effective size.

Name	GMTF member	Betweenness generation	Effective size generation	Betweenness implementation	Effective size implementation
Quinton		3.67	3.00	0.00	0.00
Mikael		29.22	3.29	0.00	0.00
Diego		24.01	5.46	29.28	3.42
Alex		35.26	4.73	0.00	1.00
Bryan		14.65	3.30	8.87	3.14
Mark		6.26	4.15	0.00	1.00
Norman		0.89	2.13	0.00	0.00
Jesper		64.90	6.86	49.95	3.60
Ryan	Y	158.81	12.32	43.92	4.72
Andy	Y	382.05	17.65	0.00	0.00
Remi		0.00	0.00	0.00	0.00
Clayton		25.33	4.00	0.00	1.00
Kevin	Y	24.27	6.81	244.81	7.73
Lou		18.80	4.85	0.00	0.00
Graeme		0.60	1.92	0.00	0.00
Sammy		104.03	9.57	81.46	4.60
Nicky	Y	26.67	8.11	48.67	3.07
Henning		20.43	5.50	0.00	1.00
Gordon		0.00	0.00	0.00	0.00
Arthur		0.00	0.00	0.00	0.00
Frank		1.48	2.27	5.67	2.00
Rio		0.23	1.64	1.58	1.80
Nemanja		0.00	0.00	0.00	0.00
Ruud		10.50	4.06	0.00	0.00
Darren		10.19	3.67	0.00	0.00
Phil		0.00	0.00	0.00	0.00
Roy		39.52	5.63	13.17	3.00
Edwin		21.89	5.79	83.00	3.00
Jaap	Y	94.01	14.72	28.69	4.33
Gabriel		90.36	12.59	119.25	7.50
Kieran		81.68	6.50	102.68	4.82
Carlos		0.00	0.00	0.00	0.00
Eric	Y	211.79	15.25	22.92	2.00
Nani	Y	67.06	10.53	121.39	5.23
John		14.99	3.14	0.00	0.00
Antonio		0.00	0.00	0.00	0.00
Dimitar		0.00	0.00	0.00	0.00
Dwight		37.16	4.88	0.00	0.00
Wes		72.56	5.25	22.58	2.33
Teddy		20.52	4.89	0.00	0.00
Alan		3.04	2.36	0.00	0.00
Peter	Y	74.17	8.93	63.92	5.55
Tim		0.65	2.17	0.00	0.00
Rafael		4.64	3.05	10.70	1.67
Ole		2.02	2.17	0.00	0.00
Denis	Y	14.96	10.65	68.80	5.09
Marcel		0.00	0.00	0.00	0.00
Fabio		5.06	3.58	0.00	1.00
Gerard		5.69	2.56	4.70	1.60

Discussion

The findings provide us several insights into how formal organisational structures and informal networks drove the generation and implementation of innovative strategies at the football academy of KRC Genk.

Firstly, from a formal point of view, through establishing the GMTF, the organisation demonstrated its commitment to the role of innovation, raising awareness amongst the whole academy about the importance of the topic and generating enthusiasm for

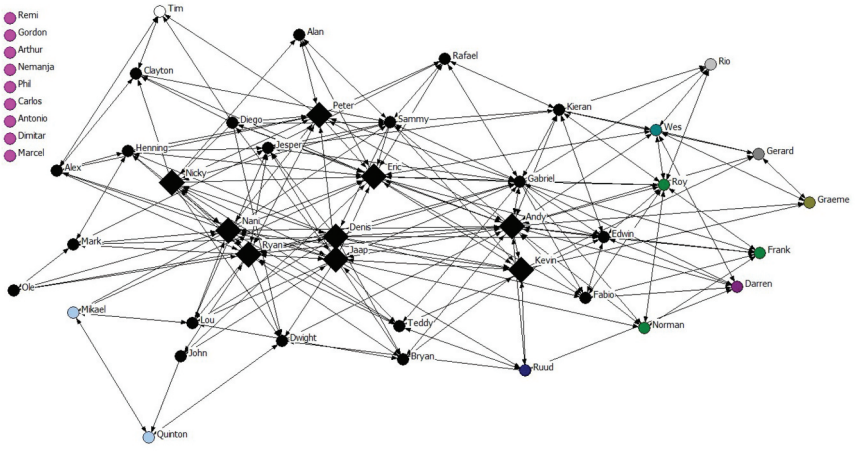

Figure 4. Idea generation advice network – community detection.

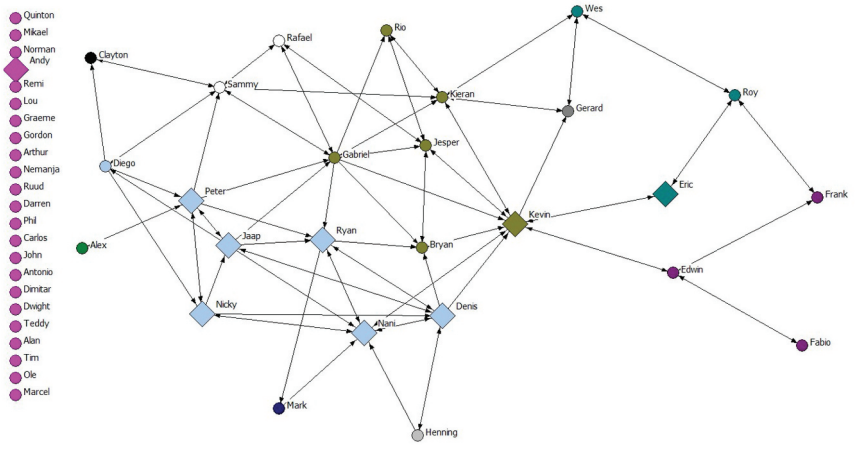

Figure 5. Idea implementation advice network – community detection.

potential change, all while cautiously avoiding pro-innovation bias. Secondly, GMTF was situated at the very core of KRC Genk itself, by being given the responsibility to design a Blueprint to drive the organisation in the future, while at the same time remaining fully anchored to their core values. In a way, a strong approach to innovation was not seen as a disruptive revolution, but as a strategic priority to be connected to the core principles, which distinguished the team from others. This was facilitated by the existence of practices promoting innovation, such as the openness to questioning established methods and to consider external inputs. Indeed, the bottom-up composition of the GMTF, integrating internal members with external expertise beyond football, was a deliberate strategy to introduce fresh perspectives into a traditionally conservative football environment.

Our findings highlight two more factors, which operate at the organisational level in terms of the informal networks of KRC Genk. Members of the task force took specific roles in the informal (advice) networks shaping the generation and implementation of ideas and changes for the team. Firstly, the GMTF plays a pivotal internal brokerage role; its members connect individuals, bringing together ideas, experiences and skills from everyone in the academy, avoiding fragmentation in the team and ensuring a cohesive network for the sharing of ideas is in place. At the same time, the members of GMTF integrate into a very cohesive group when implementing new ideas, while this tendency is less evident during the idea-generation phase. Such a fluid approach to their roles ensures that on the one hand, innovative inputs are maximised, as members of GMTF can seek input from all components of the academy, and on the other, efficiency at the time of implementing change, thanks to their strong coordination. This is the main novelty emerging from our study: formal organisational structures – such as the GMTF – can be a driving force in intraorganisational innovation processes, and their efficacy lies in their members' capacity to establish and engage with different informal networks. Figure 6 summarises the main findings of our work and outlines the novelty aspects illustrated above.

Such findings reinforce the broader literature on intraorganisational networks and organisational learning (McEvily et al., 2014; Maoret et al., 2020). Formal organisational structures create an environment conducive to innovation by setting strategic priorities and ensuring legitimacy. However, informal networks serve as critical mechanisms for information exchange and adaptability. These insights contribute to debates in management studies regarding the balance between formalisation and flexibility in fostering innovation (Soda & Zaheer, 2012; Wang et al., 2014). The role of informal networks in bridging communication gaps is particularly noteworthy, as it highlights the need for complementary structures to sustain the innovation process over time.

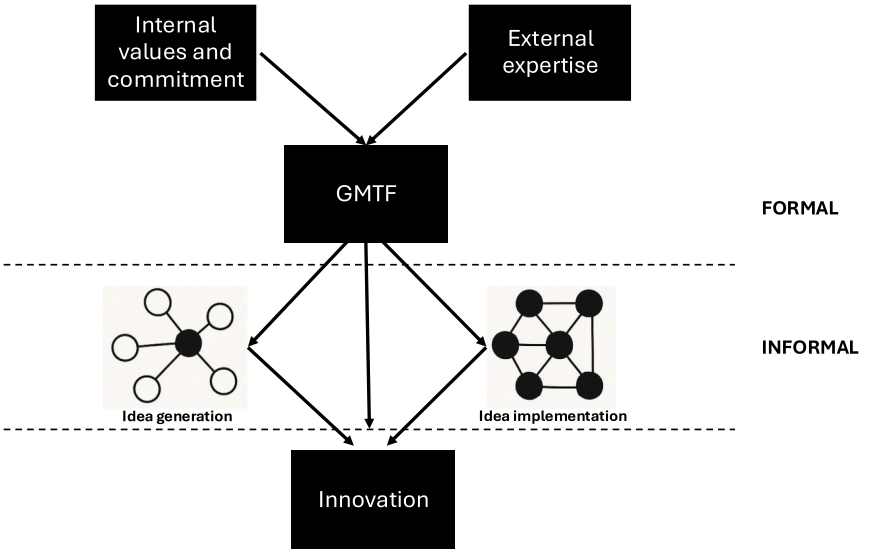

Figure 6. Visual overview of key findings.

Furthermore, our results corroborate the framework of Perry-Smith and Mannucci (2017), which emphasises how innovators can activate different networks at different phases of the idea journey. Our analysis, however, complements the framework adding a group-level dimension, showing how formal structures such as task forces play a strategic role in shaping intraorganisational innovation processes. Task forces can act as catalysts for idea generation and provide coherence in implementation, particularly in environments where innovation must align with long-standing organisational values.

Our findings reinforce the importance of promoting and actively managing networks (Delshab et al., 2022) as spaces to create and implement ideas, both internally as well externally. Organisations seeking to implement innovation effectively must consider both structural mechanisms and the relational dynamics of key individuals. Our findings suggest that innovation success depends on strategic brokerage roles that connect different actors within and beyond the organisation, ensuring that knowledge flows efficiently and resistance to change is mitigated.

Surprisingly, capacity constraints did not surface in our findings, which are commonly highlighted in the literature on radical change (Amis et al., 2004; Peachey & Bruening, 2011). This can potentially be explained by the unique composition of the GMTF's structure, with its access to external expertise and cross-functional integration, may have mitigated typical capacity concerns. Unlike organisations that struggle with resource limitations when implementing innovation, KRC Genk allowed for the efficient redistribution of knowledge and workload among team members. Additionally, the football world operates within a context where many individuals work out of a genuine and even "obsessive" passion for the sport (Anagnostopoulos et al., 2016) which can drive higher levels of commitment and adaptability. This suggests that composition diversity, combined with an intrinsic motivation, not only facilitates idea exchange but also alleviates some of the common constraints faced by organisations undergoing transformation.

Conclusion

Our study makes important contributions to addressing ongoing debates both within academic and practical spheres. Practitioners are indeed engaged in a vigorous debate about the integration of innovation into training and sport organisations. On the one hand, several teams are leveraging innovation to boost their competitive and economic results are visible, from established giants of European football such as FC Liverpool and SL Benfica, to less known but fast-growing teams like the Dutch AZ Alkmaar and Danish FC Midtjylland. On the other hand, some voices are pointing to an extreme and possibly irrational reliance on innovation in football, warning against the many risks of, for instance, using data analytics (Gamble et al., 2020).

Emblematic cases have been studied to demonstrate how Artificial Intelligence (AI) should be complemented by emotional intelligence to produce successful results – creating what has been labelled as "integrated intelligence" as illustrated by Lichtenthaler (2022) in the case of FC Liverpool. Our study includes an additional layer of "intelligence", which operates at the organisational level, and can be of relevance not only for the world of football but also for sport in general, as well as for any organisation trying to embrace the potential of innovation. By analysing the specific roles of formal organisational structures and informal networks, our study

contributes to expanding literature on research on innovation governance and knowledge diffusion (Thompson & Parent, 2022), refining our understanding of the complementary yet distinct roles that formal organisational structures and informal networks play in shaping both the generation and implementation of innovative strategies. Furthermore, our research highlights several management arrangements put in place by KRC Genk to successfully integrate formal organisational arrangements and informal networks: such solution can be of interest to practitioners in the football industry, as well as in other contexts facing innovation management challenges.

The study provides new insights into the management of radical change within organisations. Examples of past studies, focused on processes such as "deinstitutionalisation" (O'Brien & Slack, 1999) or "unlearning" (Delshab et al., 2021), emphasise the discontinuous nature of change with respect to an organisation's history. Our study, instead, offers a new perspective on the management of change, anchoring innovation within existing organisational priorities and values. In this respect, formal organisational structures may serve as "innovation anchors", framing change not as a radical departure from tradition but as an evolution consistent with an organisation's core mission.

While advancing our understanding of innovation in sport organisations, our study has some limitations which must be acknowledged. First, we adopted a single-case study, which cannot form the basis for statistical generalisations; however, with the help of in-depth analytic investigation in our study, we argue for analytical generalisability (Yin, 2018) allowing for building "minor theories" (Merton, 1967; Williams, 2016). In this respect, it is important to note that the unique composition of the GMTF likely affected the innovation process observed in KRC Genk. Unlike organisations with rigid hierarchical structures, the academy's approach encouraged bottom-up idea generation and facilitated informal interactions that supported innovation diffusion. This raises important questions about the transferability of findings. Organisations lacking similar composition diversity might experience different barriers, such as stronger resistance to new practices or a slower adoption of novel strategies due to entrenched hierarchies. This contextual factor should be considered when applying insights from this case to other sport organisations. Future research could explore whether the observed dynamics hold in settings with less cross-level integration or in organisations with a more traditional top-down governance model.

Another critical consideration is the role of the broader organisational setting in shaping innovation adoption within the academy. The GMTF operated within a football academy that was part of a larger club structure, which inevitably influenced decision-making, resource allocation, and strategic alignment. While the academy had relative autonomy in developing its Blueprint, broader club-level policies and leadership decisions played a role in determining the scope and feasibility of change. This aligns with prior work on intraorganisational networks, which emphasises that formal structures must be responsive to external pressures and overarching organisational goals (B et al., 2014; Rank, 2008). The impact of organisational embedding should therefore be further examined, particularly in cases where the balance of autonomy and central oversight differs from the case of KRC Genk.

Finally, further comparative studies across different organisational settings would help establish the boundary conditions of our findings, for example, by investigating the

influence of formal and informal organisational structure when pursuing different types of innovation. Additionally, a longitudinal approach would provide deeper insights into how these structures evolve over time and their long-term impact on organisational change (Ellwood & Horner, 2020).

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Disclosure statement

No potential conflict of interest was reported by the author(s).

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Data availability statement

The authors confirm that the data supporting the findings of this study are available within the article.

Ethics approval

This research was approved by the University Research Ethics Committee of the University of Greenwich, under approval number UREC/21.4.7.18.

Language Support

This paper has benefited from the use of ChatGPT-4.0 for language refinement and clarity improvements.

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