



Operationalization of competition performance: challenge accepted

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Abstract

It is indisputable that competition exerts an influence on firm performance. However, a critical question persists: How should we comprehensively measure the performance of competition itself?. This paper addresses the inconsistencies in understanding competition performance by proposing a comprehensive and multi-dimensional approach to its operationalization. The methodology employed to develop an operationalization framework covered field and desk research implemented sequentially. The first stage used a meta-systematic literature review to identify how competition performance has been operationalized and measured in quantitative studies to date. The second stage used online focus group interviews to verify and develop the findings from the desk research. This stage aimed to gain a shared approach to the understanding and operationalization of competition performance based on discussion and confrontation of the literature with the (consistent, inconsistent, but also contradictory) opinions of experienced competition researchers. This study offers a noteworthy contribution by presenting a definition and five specific recommendations for the operationalization of competition performance, and highlighting approaches to be avoided. These findings enhance our comprehension of the competition performance construct, thereby advancing the knowledge in the field.

Keywords Coopetitive performance · Coopetitor performance · Measurement · Operationalization framework · Competition performance

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1 Introduction

The concept of cooptation has gained significant traction within the domain of strategic management research and practice (Amata et al. 2022; Ritala et al. 2009). Nowadays, it is acknowledged as a cognitively distinct theory (Czakov et al. 2014; Gnyawali and Charleton 2018) which remains conceptually embedded in a set of varied theoretical contexts (e.g. strategic alliances, the network view, the knowledge-based view, and the behavioural view—Corbo et al. 2023; Czakov et al. 2020a; Devece et al. 2019). However, the strongest embeddedness is found in game theory and the resource-based view (Bacon et al. 2020; Meena et al. 2023).

Cooperation refers to the simultaneous pursuit and execution of both cooperation and competition within one—dynamic, multidimensional, complex and mutual—relationship (Bouncken et al. 2018; Christ et al. 2017; Crick and Crick 2019; Dorn et al. 2016; Garri 2021; Jakobsen 2020; Kwon et al. 2020; Monticelli 2018; Peng et al. 2018; Raza-Ullah 2020). From the perspective of strategic inter-organizational relationships (Amata et al. 2022; Bengtsson et al. 2020), cooptation is acknowledged as “*a dynamic and paradoxical relationship, which arises when two companies cooperate in some areas (such as strategic alliances), but simultaneously compete in other areas*” (Bengtsson and Kock 2000: 411). So far, it has been recognized as an emergent or purposeful strategy (Chin et al. 2008; Dorn et al. 2016; Le Roy and Czakov 2016), a strategy as practice (Darb and Knott 2022), or a strategizing process (Le Roy et al. 2019; Lundgren-Henriksson and Kock 2016) leading to firm performance (Chatterjee et al. 2023; Crick and Crick 2020; 2023; Vlasisavljevic et al. 2022) or even superior firm performance (Garri 2021; Le Roy and Czakov 2016; Raza-Ullah and Kostis 2020) based on syncretic cooptation rent and resulting from cooptation capabilities (Bengtsson et al. 2016; Rai et al. 2022).

Cooperation generates different outcomes (Le Roy and Czakov 2016) which can be aggregated into four general categories (Bengtsson and Raza-Ullah 2016): innovation-based, knowledge-related, firm performance, and relational outputs. The positive implications of cooptation may explain its rapid popularization (Bouncken et al. 2015; Devece et al. 2019; Dorn et al. 2016; Gast et al. 2015; Köseoglu et al. 2019). It should be noted, however, that the literature is dominated by a focus on the performance-related effects of cooptation (Meena et al. 2023), as performance is acknowledged as the most important outcome of cooptation (Bouncken et al. 2023; Crick 2019; Dorn et al. 2016). However, despite the great popularity of performance-related results in cooptation research (Zou et al. 2023), there are still many inconsistencies, cognitive contradictions and even logical misunderstandings in the field.

According to the existing stock of knowledge, the performance-related outcomes of cooptation are seen as different types of functional performance (for instance financial or market performance), as a direct proxy for firm performance, or as cooptation performance (CP) resulting purely from cooptative relationships. In the

literature, it quite often remains unclear which approach is adopted. Moreover, these approaches are frequently mixed in a single study.

Chronologically first and still the most frequently used, CP is considered through the functional approach, in which it is seen through the outcomes generated in a specific functional area, for example, innovation performance (e.g., Gnyawali and Park 2009; Ritala and Hurmelinna-Laukkanen 2009), financial performance (Bouncken et al. 2023; Monticelli et al. 2018; Peng et al. 2018), social performance (Bouncken et al. 2023), or market performance (Le Roy and Czakon 2016; Ritala 2009; 2012). The second approach to CP is the paradoxically cooperative approach that refers to the cooperation-based operationalization of competition performance focusing on the benefits shared within competing partners (Ghobadi and D'Ambra 2012; Jakobsen 2020), which at the same time intensively cooperate and compete (Crick 2019). The third approach concentrates on the multilateral benefits gained from cooperative partnerships (Bengtsson and Kock 2000; Peng et al. 2018). This approach may be labelled as relational as the benefits through which CP is considered are narrowed down to those gained through balanced cooperative relationships among partners (Raza-Ullah 2021). The last approach to CP is temporal and is viewed through the lens of competition success, where firm success is a multi-faceted construct including short- and long-term achievements (Raza-Ullah 2020; Riccardi et al. 2022).

Although co-competition outcomes and the performance of competitors are generating growing research interest, notable gaps exist in the literature. Firstly, a joint, comprehensive and multi-dimensional approach to conceptualizing and operationalizing competition performance is lacking. Indeed, there is limited knowledge of both successful competition (Garri 2021) and competition performance (Bengtsson et al. 2016; Meena et al. 2023), while understanding what factors contribute to successful outcomes in competition scenarios is essential. In particular, we need a better understanding of competition outcomes (Bouncken et al. 2015; Czakon et al. 2020b; Dorn et al. 2016), including those gained in a long-term perspective (Czakon et al. 2020a; Ricciardi et al. 2022).

Also, there is notable research fragmentation and methodological shortcomings as—so far—researchers have focused on loosely related themes, while a more detailed focus on CP is needed (Garri 2021). Moreover, there is a deficit of proposals on operationalizing and measuring competition performance (Crick 2019; Rai 2016; Ritala 2012; Narayan and Tidström 2020). Finally, there is no consensus on the types of reliable and applicable measuring proxies for CP, as some scholars use proxies linked with alliance success (Rai et al. 2022) or cooperation per se (Crick and Crick 2019; Czakon et al. 2020a). It is our conviction that these shortcomings are detrimental to advancing competition theory, and prevent the making of meaningful comparisons and generalizations, as mentioned by various competition scholars (e.g., Bengtsson and Raza-Ullah 2016; Bouncken et al. 2015; Crick 2019; Czakon et al. 2014; Gnyawali and Charleton 2018; Gnyawali and Song 2016; Gelei and Dobos 2023).

Beyond the cognitive gaps identified above, an additional justification for directing our attention toward CP lies in its preeminent status within competition literature. As Meena and colleagues (2023) show in their systematic literature review (SLR), there are six areas of investigation within the competition field. Among them are two

related to performance—(1) the outcomes of coopetition on firms, and (2) coopetition leading to innovation performance. Additionally, bibliometric analyses evidence that among the six building blocks of the citation network within the coopetition field are those focusing on coopetition outputs (Köseoğlu et al. 2019)—i.e., innovation with coopetition. Also, Walley (2007) identifies coopetition and performance among eight themes in the coopetition field, while Chim-Miki and Batista-Canino (2017) place the recognition of successful coopetition among three streams of research in the tourism management context, and coopetition outcomes are identified among five research dimensions by Gernsheimer and colleagues (2021). Therefore, in our paper, we directly address a research question posed as a result of an SLR carried out by Chim-Miki and Batista-Canino (2017: 10), namely, “*How (should) we measure the performance generated by coopetition?*” Specifically, we aim to develop an operationalization framework for coopetition performance.

To achieve the above goal, a two-step research process was conducted. Firstly, following a domain-based approach, we carried out a meta-systematic review of existing SLRs (Kraus et al. 2022; Paul et al. 2021) on coopetition published to date. In particular, we explored the reviews in order to determine whether and how CP was operationalized and measured. Secondly, field research was conducted to discuss, revise and supplement the SLR findings. This part of our research inquiry was implemented using three online focus group interviews (FGIs) with researchers experienced in the coopetition phenomenon.

As a result of our investigation, this paper contributes to coopetition literature by developing a coopetition performance definition and an operationalization framework covering five operationalization recommendations. Conceptually, this work offers an understanding of coopetition performance as a distinct, multi-dimensional and dynamic type of performance. From an operational and methodological perspective, our research points to the importance of considering both relational and temporal measures of CP covering short- and long-term perspectives, but at the same time recommends a multi-item, subjective and situational approach to CP measurement.

2 Theoretical background

Coopetition performance has been considered in terms of achieving success and successful outcomes (Bouncken and Friedrich 2012; Rai et al. 2022). It is also used interchangeably with cooperating firm success (Riccardi et al. 2022) as it “*refers to managers’ assessment of coopetition success*” (Raza-Ullah 2020: 8). Importantly, when it comes to CP, the literature highlights that always “*coopetitive performance—should be considered—in a collaborative development setting*” (Johansson et al. 2019: 1). It should be noted that coopetition performance is inseparably linked with coopetition, thus, it is attributed only to coopetitors, so to those adopting a coopetition strategy, undertaking coopetitive behaviours, or exploiting coopetitive relationships in an emergent manner (Bouncken and Friedrich 2012; Rai et al. 2022; Raza-Ullah 2020; 2021; Raza-Ullah and Kostis 2020).

In this sense, CP can be understood as performance resulting from exploiting coopetitive relationships, whether in a long- or short-term perspective. It should be

emphasized that in terms of coepetition performance nomenclature, the literature lacks consistency. The term coepetitive performance (Johansson et al. 2019; Petter et al. 2014; Raza-Ullah 2020; 2021) is interchangeably used to refer to coepetitive relationship performance (Raza-Ullah and Kostis 2020) or the performance effects of coepetition (Bouncken and Friedrich 2012). As we see the focus on coepetition-specific outcomes as the most important, we adopt the term *coepetition performance*, literally explained as the performance of coepetition and thus attributed only to organizations executing a coepetition strategy, or following coepetitive strategizing process(es) or simple coepetitive rules as part of their strategic approach.

2.1 Coepetition and performance—the interlink between them

The literature shows a large-scale impact of coepetition on performance (e.g., Bouncken et al. 2018; Bouncken and Kraus 2013; Czakon et al. 2014; Raza-Ullah 2020), as well as on the strategic (Pellegrin-Boucher et al. 2013) and superior (Garri 2021; Le Roy and Czakon 2016; Raza-Ullah and Kostis 2020) performance of a firm. It should be noted that a higher level of performance is one of the most critical outcomes of exploiting coepetitive relationships (Kraus et al. 2019; Ritala 2012).

For coepetitors, competition brings the benefits of both cooperation and competition by enabling simultaneous access to complementary external resources and gaining from the synergy effect, but also by strengthening market power, constantly improving coepetitors' business and leveraging competitiveness (Bengtsson and Kock 2000; Monticelli et al. 2018; Pellegrin-Boucher et al. 2013). Coepetition increases firm performance (Crick and Crick 2023; Dorn et al. 2016; Le Roy et al. 2019), and depending on the theoretical view, it can be emphasized that it widens coepetition partners' market opportunities (Czakon et al. 2014), or allows them to find new ways of operating (Christ et al. 2017) or reducing costs (Osarenkhoe 2010). According to Cozzolino and Rothaermel (2018), CP is the only option that allows firms to respond to discontinuous technological changes. Thus—as Christ et al. (2017) noted—it helps handle the costs, risks and uncertainties associated with the innovation process, but also positively impacts the firm's internal structures and processes (Dorn et al. 2016), helps to optimize resource allocation and exploitation (Czakon et al. 2020a), accelerates and improves organizational learning (Bendig et al. 2018; Chin et al. 2008), and leverages firm performance (Crick and Crick 2023; Raza-Ullah 2021; Zou et al. 2023).

Nonetheless, in the literature, coepetition is shown as having a somewhat non-linear, u-shape relationship with firm performance (Crick 2019; Chatterjee et al. 2023; Darbi and Knott 2022; Ritala and Hurmelinna-Laukkanen 2009), but also—in a more general view—with the outcomes generated by the firms adopting a coepetition strategy (Czakon et al. 2020b). It has been acknowledged that alongside the positive effects, coepetition also has negative impacts on firm performance (Gernsheimer et al. 2021). The possible negative effects on performance mean that coepetition may lead both to strategic advantages and disadvantages (Della Corte and Sciarelli 2012). Current research suggests that one primary reason for low performance is the manifestation of paradoxical tension (Fernandez et al.

2014; Séran et al. 2023) and the resultant emotional ambivalence that likely causes negative consequences for performance, particularly when organizations lack the required management capabilities, including coopetition capability (Rai et al. 2022). Summing up, coopetition is related to performance, thereby providing a basis for considering the specific performance-related outcomes of coopetition.

2.2 Polymorphism of performance-related outcomes of coopetition

Although researchers are increasingly contributing to the area of performance-related outcomes of coopetition, not much attention has been paid to the consolidation of coopetition impacts or coopetition performance per se (Bengtsson and Raza-Ullah 2016; Feela 2020; Garri 2021). Our literature screening concludes that CP has been analysed using different approaches often focused on narrow types of performance-related outcomes (see Table 1).

According to the results of an SLR conducted by Bengtsson and Raza-Ullah (2016), supplemented by the claims of Crick (2019), very different approaches to

Table 1 Proxies identified for coopetition performance

Proxy	References
Firm/organizational/company/ business performance	Monticelli et al. 2018; Peng et al. 2018; Zrahia 2018; Köseoğlu et al. 2019; Feela 2020; Crick and Crick 2020; Garri 2021; Gernsheimer et al. 2021; Vlasisavljevic et al. 2022; Chatterjee et al. 2023
Strategic performance	Pellegrin-Boucher et al. 2013
Superior performance	Le Roy and Czakon 2016; Raza-Ullah and Kostis 2020; Garri 2021
Innovation performance	Ritala and Hurmelinna-Laukkanen 2009; Bouncken et al. 2018; Gnyawali and Park 2009; Bouncken and Kraus 2013; Ritala et al. 2016; Klimas and Czakon 2018; Monticelli et al.; Peng et al. 2018; Kraus et al. 2019; Park and Kim 2020; Raza-Ullah 2020; Gernsheimer et al. 2021; Vlasisavljevic et al. 2022
Open innovation performance	Bacon et al. 2020
Green innovation performance	Albort-Morant et al. 2018
Financial performance	Monticelli et al. 2018; Peng et al. 2018; Zrahia 2018; Chen et al. 2019; Vlasisavljevic et al. 2022
Market performance	Ritala 2012; Czakon et al. 2014; Bouncken et al. 2015; Le Roy and Czakon 2016
Knowledge performance	Bouncken and Kraus 2013; Monticelli et al. 2018
Social performance	Christ et al. 2017
Individual performance	Ritala 2012; Chim-Miki and Batista-Canino 2017; Klimas and Czakon 2018; Vlasisavljevic et al. 2022; Wang et al. 2019; Corbo et al. 2023
Project performance	Fernandez and Chiambaretto 2016; Bendig et al. 2018
Team performance	Baruch et al. 2012
Collective performance	Chim-Miki and Batista-Canino 2017
Short-term performance	Ritala 2012; Rusko et al. 2016; Czakon et al. 2020a, b; Ricciardi et al. 2022
Long-term performance	Kylanen and Mariani 2012; Ricciardi et al. 2022

the performance-related outcomes of coopetition may be considered. Chronologically first, the focus was placed on traditional, short-term economic performance (Dorn et al. 2016; Monticelli et al. 2018; Ritala 2012), including both the profits and costs of coopetition (Gast et al. 2015), joint productivity (Chim-Miki and Batista-Canino 2017; Le Roy and Czakon 2016) and increased value creation (Bouncken et al. 2015; Czakon et al. 2020a), but also value appropriation (Ritala and Hurmelinna-Laukkanen 2009) or sale value (Bengtsson and Raza-Ullah 2016). Secondly, due to the strong reasoning for the suitability of coopetition and open innovation models (Gnyawali and Park 2009), a second type of performance, namely innovation performance, has started to be investigated intensively (Kwon et al. 2020; Le Roy and Czakon 2016). This stream covers a wide range of innovation performance perceptions, including product innovation output (Bouncken et al. 2015; Czakon et al. 2020a), fostering innovation (Bouncken et al. 2015), innovativeness (Dorn et al. 2016; Klimas and Czakon 2018), or even creativity (Kraus et al. 2019). Thirdly, there is also a view that narrows the perspective to market performance (Ritala 2012; Devece et al. 2019), including market position, quality of service support (Bengtsson and Raza-Ullah 2016), and market power (Bouncken et al. 2015; Czakon et al. 2020a). Finally, other, less frequently considered performance-related outcomes can be indicated, such as customer performance, outputs for customers (Dorn et al. 2016), labour performance (Czakon et al. 2014), technological performance (Gnyawali and Park 2009; Liu et al. 2020), project performance (Ghobadi and D'Ambra 2012), or knowledge performance including absorptive capacity and inter-organizational learning (Bendig et al. 2018; Monticelli et al. 2018). All of the above consider the performance-related outcomes of coopetition as specific functional-level types of performance that impact firm performance. Nonetheless, one may also find works in which performance-related outcomes are seen as direct proxies for firm (business, organization) performance (Crick and Crick 2020; Feela 2020; Liu et al. 2020; Pellegrin-Boucher et al. 2013; Xie et al. 2023), while in other works it is clearly stated that coopetition performance is not a part of firm performance, but does have an impact upon it (Ritala 2009). Moreover, it is also possible to find research considering the performance-related outcomes of coopetition as specific only for those maintaining cooperative relationships (Raza-Ullah 2020; 2021; Raza-Ullah and Kostis 2020). In this so-called relational approach (i.e. the cooperative relationship as a source of CP), while firm performance can benefit from coopetition performance, this is only the case when coopetition relationships are used, so it is not reasonable to view firm performance through CP nor the other way around. Last but not least, given the dynamic nature of coopetition, the performance-related outcomes used to be viewed either from a short-term (e.g., Rusko et al. 2016) or a long-term perspective (e.g., Kylanen and Mariani 2012), and the dynamic view that considers both time perspectives has only appeared recently (Ricciardi et al. 2022). Performance in terms of coopetition success is conceptualized by short-term success as present-time success when it concerns firm power, financial and market performance and the capacity of long-term success, which itself is linked with optional capital and the profitability of the business model (Ricciardi et al. 2022) as coopetition evolves (Dorn et al. 2016; Jakobsen 2020; Klimas et al. 2023).

Our literature review shows that the conceptual approaches to understanding the performance-related outcomes of coopetition may be found in the four leading operationalization approaches used in the empirical works.

First are functional approaches, in which the operationalization is narrowed down to some functional reflections of firm performance. These reflections are considered to be the final (definite) outcomes of coopetition strategy adoption—that is, innovation performance (Chen et al. 2021; Corbo et al. 2023), financial/economic performance (e.g., Chim-Miki and Batista-Canino 2017; Dorn et al. 2016; Estrada and Dong 2020; Garri 2021; Monticelli et al. 2018; Ritala 2012), market performance (e.g., Bouncken et al. 2015; Devece et al. 2019; Le Roy and Czakon 2016; Le Roy et al. 2022), and knowledge performance (e.g., Garri 2021; Monticelli et al. 2018).

Second is the two-sided approach, in which the paradoxical—simultaneously cooperative and competitive—nature of coopetition is usually captured as a proxy for general firm performance (Petter et al. 2014). In this approach, coopetition performance is operationalized through both competitive and cooperative behaviours, competition and cooperation intensity, competition and cooperation propensity, the value of competitive and cooperative flows, etc. (e.g., Bengtsson and Raza-Ullah 2016; Bengtsson et al. 2016; Bouncken and Kraus 2013; Crick and Crick 2020).

Third are relational approaches, in which operationalization of CP refers to performance resulting from the maintenance, development and exploitation of cooperative relationships (Raza-Ullah 2021; Raza-Ullah and Kostis 2020). In these approaches, CP is considered at the strategic (not functional) level of analysis; hence it is understood to be different from firm performance in leading to coopetition-specific syncretic rent (Lado et al. 1997).

In the fourth approach, coopetition is acknowledged as a dynamic phenomenon (Amata et al. 2022; Crick and Crick 2019; Pellegrin-Boucher et al. 2013). Therefore, besides static multi-item approaches considering coopetition performance only in the short term, the recent literature recommends and demonstrates how to grasp CP's long-term and changeable facets. For instance, Ricciardi and colleagues (2022: 321) operationalize coopetition performance as “*a multi-faceted construct including short-term, present-time success (in terms of financial performance, market performance, and firm power) and capacity of long-term success (in terms optional capital and business model viability)*”.

The identified four leading approaches to CP operationalization are presented in Fig. 1. As can be seen, alongside these four complex approaches, there are also some less comprehensive ideas for CP operationalization (i.e. labour performance—Czakon et al. 2014, technological performance—Gnyawali and Park 2009, customer performance—Dorn et al. 2016, and project performance—Ghobadi and D'Ambra 2012) which remain outside the mainstream of past research interest.

Taking into account the lack of a commonly accepted view on the operationalization of CP, and considering the need to develop a comprehensive approach, in the next step we attempted to reveal how the identified approaches (Fig. 1) are perceived—when confronted with one another—by scholars who deal with the issue of coopetition in their research work.

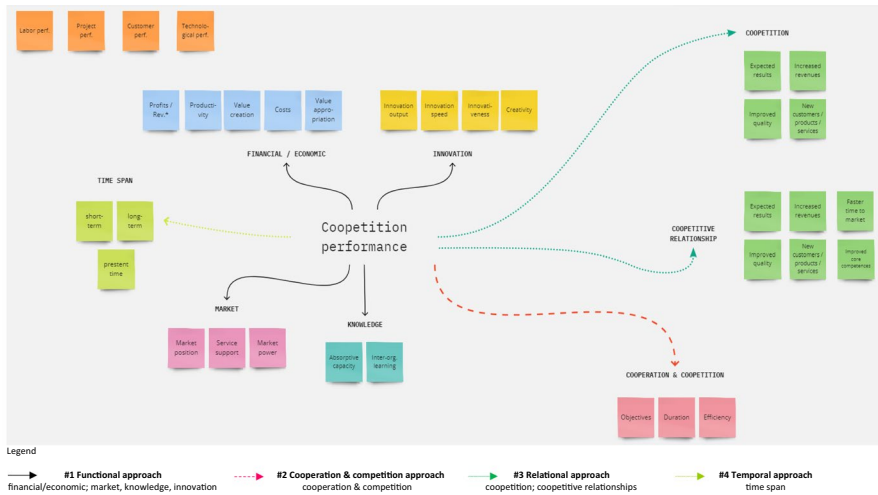


Fig. 1 Miro board presenting approaches to competition performance operationalization identified in the meta-systematic literature review Source: visualisation made using the virtual Miro board via <https://miro.com/>

3 Methodological design

The development of the operationalization framework for CP was implemented in two stages. First, the literature was analysed using desk research to identify if and how CP had been operationalized and measured by researchers so far. Second, using field research, the findings from the desk research were verified and developed in order to offer a coherent and comprehensive operationalization of CP. In both stages, a qualitative approach was followed.

3.1 Literature review

The desk research was performed using a systematic approach (Kraus et al. 2022, 2024; Sauer and Seuring 2023). As the competition field is rich in systematic literature reviews (Czakov et al. 2020a), we saw it reasoned to use a meta-systematic review of SLR on competition published to date (Paul et al. 2021).

To identify the existing SLRs on competition, the Scopus database was used with a combination of “literature review”/“SLR” and “competition” as search criteria identified in the title and/or abstract. Moreover, we used the following inclusion criteria: published/early cite article; the literature review was a systematic one, the full paper was available, and the term “performance” appeared in the text of the paper.

Next, following the domain-based approach (Paul et al. 2021), we focused on the identified eleven SLRs (Bengtsson et al. 2016; Bengtsson and Raza-Ullah 2016; Bouncken et al. 2015; Corbo et al. 2023; Czakov et al. 2014; Devece et al. 2019; Dorn et al. 2016; Gast et al. 2015; Gernsheimer et al. 2021; Köseoğlu

et al. 2019; Meena et al. 2023) that considered a more or less detailed view of coepetition performance (i.e. the themes considered were linked with CP: (1) conceptualization, (2) operationalization, but also (3) drivers/antecedents/factors/drivers/triggers, as these may also be used as proxies essential for building up multi-item operationalization).

The meta-systematic review proved that alongside coepetition antecedents (factors, drivers, triggers, motives, etc.), the second most relevant and current area of investigation is the last component of the Input-Process-Output approach (Dorn et al. 2016), namely coepetition outcomes (Klimas et al. 2023). Nevertheless, the works identified in the analysed reviews showed that although coepetition outcomes have attracted a huge amount of interest among researchers so far, there is no consistent view on operationalization. At the same time, some of the existing approaches were not methodologically correct. Therefore, it is reasoned and required to explore how to comprehensively operationalize CP in a disjointed view of firm performance, or its selectively and purposefully chosen dimensions such as innovation or market performance.

The findings from the preliminary review stages of our study were used to prepare the theoretical part of the article. Concerning operationalization, it should be stressed that the literature analysis showed no consistency in the field of CP operationalisation. Conversely, one can find many different, sometimes contradictory approaches (compare Ricciardi et al. 2022 *versus* Raza-Ullah and Kostis 2020). It can be seen, however, that most scholars follow multi-item, hence static and short-term approaches when measuring CP.

Our desk review was the very first exploratory stage in the study. In order to verify its findings, in-depth information was needed on the perception of the approach to coepetition performance operationalization that was the most relevant (in terms of merit scope) and appropriate (in terms of construct validity).

3.2 Group interviews

The field research was carried out using the online focus group interview technique (FGI). We decided to use this qualitative technique for several reasons. Firstly, we wanted to use the field research to develop both the general concept of the questionnaire and the specific questions that should be asked and are usually addressed using focus group interviews (Powell et al. 1996; Smithson 2000). Secondly, we saw this data collection technique as valuable (Sweet 2001) as we were interested in obtaining and confronting several perspectives, organizing a contentious discussion of experts (Moore et al. 2015) in the investigation of coepetition, and achieving a shared (collectively agreed) approach to CP operationalization. Thirdly, the FGI technique ensured a relatively informal atmosphere during the interviews, encouraging participants to partake in in-depth discussion (Parker and Tritter 2006), which was particularly important given the complexity of the issue discussed, i.e. operationalization of the latent construct. Fourthly, we used synchronous online FGIs in order to overcome time and space constraints (Moore et al. 2015). Finally, due to the focus on methodological issues, including transposition from conceptual

to rigorous operationalisation, we saw expert scholars with practical experience in cooptation research as relevant key informants.

The interview participants were eight Polish cooptation researchers, among whom there were three assistant professors, three associate professors and two full professors. The national focus can be reasoned twofold. On the one hand, the cooptation phenomenon is considered to be industry- and country-dependent (Czakov et al. 2014). On the other hand, investigations in some way related to CP have so far been carried out, for instance, in Sweden (Raza-Ullah 2020; 2021; Raza-Ullah and Kostis 2020), New Zealand (Crick 2020; Crick and Crick 2019, 2021) and Italy (Ricciardi et al. 2022), while other national contexts including the Polish one remain unexplored. Additionally, it is worth noting that although only Polish researchers were interviewed, we believe that a broader than national scope of perceptions was captured as they are members of the international community of cooptation scholars (i.e., members of CENA—Cooptation-Ecosystems-Networks-Alliances—a community actively operating online via LinkedIn, Facebook and Research Gate, and/or presenters of articles under the auspices of CENA since 2016 during the annual conferences of the European Academy of Management).

In recruitment for the FGIs, the following selection criterion was used: at least two articles on cooptation published in journals indexed by JCR (identified using Web of Science) or 1 article and doctoral dissertation on cooptation (identified using the governmental platform for academics—Nauka Polska) and being a member of the CENA community (<https://www.facebook.com/groups/cenacommunity>). In total, twelve cooptation scholars were identified, of which eight agreed to participate in the FGIs, one refused due to health reasons, and three were intentionally excluded as they are linked with the research project related to cooptation performance.

In total, three FGIs were conducted. Indeed, as suggested in the methodological literature (Sweet 2001; Moore et al. 2015), three were enough to achieve the saturation effect and reveal straightforward suggestions about the most appropriate and shared approach to cooptation performance operationalization (more details can be found in 4. Findings). To ensure a proper balance between the heterogeneity (e.g. areas of interest in the field of cooptation, type of cooptation investigated so far, methodological approach used so far in research on cooptation) and homogeneity (i.e. experience in cooptation research) of our interlocutors, as required in group interviews (Sweet 2001; Hollander 2004), our FGIs were organized with scientists who varied in terms of research tenure (we used the academic degree as a proxy), but similar in terms of interest in cooptation—see details in Table 2. Our online FGIs were organized in April 2022 and performed using MS Teams, allowing participants for real-time conversational interactions and thus leveraging group dynamics (Fox et al. 2007), with a synchronous (Moore et al. 2015) online focus group interview technique being applied (Halliday et al. 2021). The principal investigator – also experienced in cooptation research and conducting FGIs—acted as a moderator. As reasoned by Smithson (2000), the fact that the moderator represented the same background as the interlocutors minimizes moderator bias.

The interviews were carried out using two research tools. The first was a focus group guide covering open-ended, general questions referring to (1) the general understanding of cooptation performance in a subjective and temporal sense,

Table 2 Details of the online focus group interviews and the participants

No.	Date	Duration	Code	No. of interviewees	Type of interviewees	Main area of interest	Focus in the cooperation field	Methodological approach
1.	April 11, 2022	89'	FG1	3	Assistance professors	Strategic management	Cooperation factors & inter-organizational cooperation Social relationships & synergic rent Public institutions NGOs Firms Public institutions NGOs	Qualitative
						Strategic management	Public institutions NGOs	Qualitative
						Strategic management	Firms Networks	Quantitative
2.	April 13, 2022	62'	FG2	2	Full professors	Strategic management Quantitative research	Intra-firm cooperation at industry level & green cooperation Trust-based cooperation & cooperation outcomes Firms	Quantitative
						Strategic management Research methodology	Cooperation factors & cooperation measurement Firms	Mixed
3.	April 21, 2022	91'	FG3	3	Associate professors	Strategic management	Cooperation factors & cooperation outcomes Innovation-based cooperation & cooperation performance Firms networks Firms networks	Mixed
						Strategic management	Firms networks	Mixed
						Tourism management Qualitative research	Trust-based cooperation & competition factors Regions firms individuals	Qualitative

and (2) rigorous but also comprehensive operationalization of CP considering its conceptual complexity. The second tool was a graphical board presenting the approaches to CP operationalization identified as a result of a systematic literature review. The interactive board was prepared using Miro (www.miro.com)—Fig. 1. The interviewees were asked about these approaches, their pros and cons, their hierarchization regarding the relevance for comprehensive operationalization of CP, and the methodologically reasoned options for their extension, deepening, shortening, blending, etc. Following Moore, McKee and McLoughlin (2015), we found it valuable to utilize the Miro board as it interactively stimulated interviewees to engage in conversation, pose questions, and provide deeper argumentation for their ideas, as well as facilitating the moderation of the online FGIs.

The interviews were video recorded, transcribed and analysed using ATLAS.ti 7.1 software. During the data analysis process, the content of the interviews was deductively and thematically coded using the following literature-based codes: operationalization difficulties, functional approach, cooperation and competition approach, relational approach, and temporal approach. The following section presents the findings using a thick description and interpretative narration (Denham and Onwuegbuzie 2013). In the thematic analysis, all direct quotations are in italics, while the authors' comments and explanations are in plain font.

4 Findings

The qualitative research deepened the perception of coopetition performance regarding its operational understanding and operationalization—the overall insights from our field study are included in Table 3.

The starting point for the discussion was to find out how interviewees operationally understood the concept of CP. In support of the literature (e.g., Rai et al. 2022; Raza-Ullah 2021), we found no consensus on either the understanding or operationalization of coopetition performance (Sect. 4.1.). The discussion then centred around the four main operationalization approaches identified from the literature review, presented to the interview participants on a Miro board (Fig. 1), which was successively updated during each online interview – a summary of all the FGIs is shown in Fig. 2 (Sect. 4.2.). Moreover, our interlocutors noted that many existing measurements have methodological and logical shortcomings (presented in Sect. 5. Discussion).

4.1 General understanding of coopetition performance

All of our focus groups proved that finding one common definition of CP is difficult. Interestingly, this aspect was particularly widely and fiercely discussed in the second group, whose participants were full professors.

One of the main concerns related to the unit of analysis—whether coopetition refers to a company cooperating with its competitor (i.e., an organizational level of analysis; a one-sided perspective is acceptable) or to a single relationship (i.e., a

Table 3 General insights obtained in online focus group interviews

Exemplary citation	Subthemes	Themes
<p>General understanding of cooperation performance</p> <p>(...) <i>the performance of a single relationship, this is an avenue that will result in a plethora of complications and complexities</i> (ref. to measurement) [FG2; O1]</p> <p>(...) <i>a company that is in cooperation. It has cooperation performance, but it also has performance itself</i> (ref. to performance not induced by cooperation strategy adoption)? <i>Well, because then something has to be different about this performance</i> (ref. this something has to be measured) [FG2; O2]</p> <p><i>If we have cooperation performance, then the next question is about this value created</i> (ref. to the way how they relate to each other, to the problem of separation) [FG2; O1]</p> <p>Operationalization of cooperation performance</p> <p><i>I was thinking about such elements, if only in the context of the market being important, to increase market share, that is, this market share and what XXX was saying, the creation of a new market altogether.</i> [FG1; O1]</p> <p><i>For me, a little bit of measuring that efficiency or something like that is important—in that cooperation performance—ultimately</i> (ref. measurement of cooperation performance) <i>is just through these financial dimensions really.</i> [FG3; O3]</p> <p><i>This</i> (ref. cooperation strategy) <i>helps me to increase, for example, the number of innovations, more radical ones and so on.</i> [FG3; O3]</p> <p><i>When entering into cooperation with a competitor, we certainly seek and acquire some knowledge</i> [FG1; O3]</p> <p><i>Remember about</i> (ref. to otherwise unattainable) <i>access to new resources for events, ventures, but let's remember also that competition also allows us to maximize such full use of our own limited... resources, and their better allocation</i> [FG3; O2]</p> <p><i>Sometimes cooperation, I would go on to say, with a competitor who is, for example, a stronger player, more well-known and so on, brings us a certain prestige, but also such internal strength, we strengthen ourselves and thus build up our competitiveness. In fact, we are perhaps also creating new competitive factors</i> [FG3; O2]</p>	<p>Level of analysis – relational vs organizational</p> <p>Cooperation performance vs firm performance</p> <p>Cooperation performance vs. value created</p> <p>Market performance</p> <p>Financial performance</p> <p>Innovation performance</p> <p>Knowledge performance</p> <p>Cooperation performance</p> <p>Competition performance</p>	<p>Measurement difficulties</p> <p>#1 Functional approach</p> <p>#2 Cooper & compet. approach</p>

Table 3 (continued)

Exemplary citation	Subthemes	Themes
<p>(ref. to coopetition outcomes) <i>What we have, but also what I have gained, and what I wouldn't have gained on my own. [...] And it seems to me that this is (...) if it could be measured somehow, what this coopetition has given me, what I've achieved, what results I wouldn't have been able to achieve at all on my own from my perspective.</i> [FG1; O3]</p>	<p>Coopetition-specific results / coopetition performance</p>	<p>#3 Relational approach</p>
<p>(reg. to coopetition performance measurement) (...) <i>show the results of this coopetition [...] that it is a specific cooperation (ref. cooperation with competitors), giving specific results, with results that are different from normal cooperation.</i> [FG3; O1]</p> <p><i>For example, those people who very often manage such cultural institutions, or public entities in general, (...) you don't see such a strategic, far-reaching view at all, especially in local government</i> [FG1; O2]</p> <p><i>We are focusing on the results of coopetition here and now (...) because the different types of objectives can be, for example, in addition to such financial ones, they also have social ones, more timeless as well as operational, relevant for today (...). As a result of the situation, they (ref. to CEOs of public institutions) cannot afford any far-reaching plans, because they have a contract signed for a specific period of time</i> [FG1; O1]</p>	<p>Coopetition-specific results / coopetition performance</p>	<p>#4 Temporal approach</p>
<p><i>In such a more far-reaching perspective, this coopetition allow us to better implement not only the strategy, which incidentally is always for a longer time horizon, but more broadly</i> (ref. to the fulfilment of the vision, mission but also the dominant logic of the firm) [FG1; O1]</p>	<p>Short-term perspective</p>	<p>Short-term perspective</p>
<p><i>In my opinion, at each stage of this relationship we can already identify certain benefits or outcomes of actually cooperating and competing at the same time, i.e. this coopetition</i> [FG3; O2]</p>	<p>Long-term perspective</p>	<p>Real-time perspective</p>

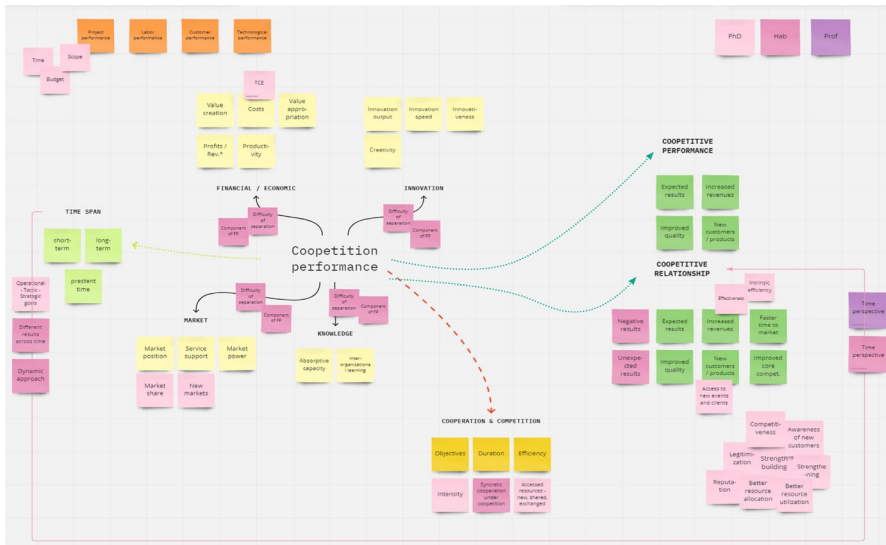


Fig. 2 Miro board presenting interviewees' opinions on cooperation performance obtained in online focus group interviews Source: visualisation made using the virtual Miro board via <https://miro.com/>

dyadic level of analysis; a two-sided perspective is needed). Some of the statements given by respondents were as follows:

For me, the term in general (ref. to competition performance) is questionable. Or, in other words, the unit of analysis is unclear. Because can a relation have its own performance? And even if it has its own performance, it would follow that this performance of the relationship could have a positive or negative impact on the performance or productivity of the organisation itself [FG2; O1].

This, in turn, raises further dilemmas in distinguishing between CP and firm performance:

I don't know how I would.... If you've got a company that's competing, this performance is only about competition, which was also influenced by other factors. I don't know if I would be able to answer what results from what [FG2; O2].

How to separate what I do through competition from what I don't do. Well, it's ... We get into the realms of speculation. And it becomes very subjective [FG2; O1].

Notably, respondents' statements clearly indicated that CP is not the same as competition results for performance. Also at issue was the distinction between the category of cooperation performance and value created: 'we have this value, which is appropriated, but it may be an individual value appropriated, but also a common, shared value is created, which is non-appropriable and likewise a public value, which is non-appropriable' [FG2; O1].

To conclude, the respondents stated that CP results from coopetition strategy (either intentional or emergent Czakon et al. 2020a; Pattinson et al. 2018; Wang and Chen 2022), coopetition practices (Dahl et al. 2016; Darbi and Knott 2022), or coopetition strategizing (Le Roy et al. 2019; Lundgren-Henriksson and Kock 2016). It is a secret ingredient in the business pie of coopectitors. This remains in line with the understanding of CP as attributed only to organizations executing a coopetition strategy as suggested by Bouncken and Friedrich (2012), Johansson et al. (2019), Petter et al. (2014), Raza-Ullah (2020; 2021), Raza-Ullah and Kostis (2020), and Ricciardi et al. (2022). In light of our interviewees' statements, CP can be seen as primarily related to the perception of coopetition success, as asserted by Ricciardi et al. (2022), and the perceived advantages concerning the degree of achieving the objectives attributed to a particular coopetition relationship (situational approach). Based on the participants' opinions, CP appears as a relatively subjective measure of the effectiveness of coopetition strategy, coopetition strategizing and coopetition practices.

Furthermore, the interviewees emphasized that coopetition can yield diverse effects, necessitating the separate evaluation of each coocompetitive relationship in terms of the level of CP achieved. They also highlighted that the perception of CP and its levels undergo varying assessments by coopectitors involved in specific coocompetitive relationships, thereby leading to different interpretations of CP generation among the actors engaged in the same coocompetitive relationship. Additionally, they underscored the critical importance of carefully selecting appropriate proxies, indicators and measures in this context. This rationale not only justifies the operationalization gap in the CP domain, but also supports recommendations regarding the imperative focus on operationalization and measurement in coopetition research (Gnyawali and Song 2016).

4.2 Operationalization of coopetition performance

Analysis of the literature revealed a relatively narrow approach to CP operationalization (Raza-Ullah 2021; Ricciardi et al. 2022), with the research focused mainly on single groups of generic outcomes (Table 1), such as financial, market or innovation performance, in addition to being considered from the perspective of one party to the coopetition relationship. The focus groups allowed us to show a broader perspective, revealing more and less accepted, acknowledged or recommended approaches to CP operationalization from among those discussed during the interviews (Fig. 1).

4.2.1 #1 Functional approach

Statements referring to the functional approach indicated that such outcomes can occur in different areas, e.g. market, finance or innovation, depending on the external contexts and internal characteristics. All of the considered functional

performances (Fig. 2; Table 3) were commented on intensively, while in the opinion of our interlocutors, their relevance results from the goals which are targeted by cooperation strategy; hence, they do not appear to be generally specific for competitors or cooperation only. Furthermore, the participants emphasized that within the functional perspective, it is not clear how many of these performances are exclusively the outcome of exploitation of the cooperation relationship and how many are derived from the organisation's other activities not related at all to cooperation and cooperative relationships.

Well yes, now it's only the question if is it possible to exclude this molecule (ref. functional performances) from cooperation performance itself? I mean, I don't know how to... Because even if you have this approach, it's such a multidimensional approach that you have market, financial,...innovation... then you have certain dimensions, yes, but these are dimensions of firm performance as well [FG2; O2].

It was noted that there can be significant difficulties in identifying what is a CP, especially when the measurement is done during a specific unit of time. Furthermore, there was no consensus among the participants whether these functional performances are equally valuable or important for the organisation. In their comments, different respondents focused on and emphasized other functional areas as being essential for consideration.

'Financial results, ... this is, for me, probably the most universal measure of any activity, any strategy or any company's approach to something. After all, in the end it is the financial results that really matter' [FG3; O3]. This may suggest that cooperation can lead (along with other types of performance) to financial performance, but only if a cooperation strategy is adopted.

At the same time, during the discussion, those participants who were empirically experienced in investigating cooperation in public entities, non-governmental entities or cultural institutions pointed out that these types of entities have other objectives, e.g. increasing efficiency in the implementation of their mission, and thus place financial performance to one side.

This blue part (ref. to financial/economic performance marked in blue on the Miro board), it is typically assigned to companies, but does not work at all for the other two, equally important sectors (ref. to NGOs and public institutions) [FG1; O2].

It was also suggested that we should try to explore the extent to which particular functional performances are relevant to company performance:

Maybe we should try these using a traditional approach, where we have these financial, innovation, market, knowledge and so on, in a kind of block approach to indicate—I don't know, in an analysis, for instance using factor analysis (...)—what their importance is [FG3; O1].

However, throughout the interviewees' statements, serious doubts were expressed as to whether it was possible to isolate the exclusive effects of the

co-competition relationship within the framework of functional outcomes. It was also observed that there is a risk that co-competition performance operationalized in this way may cover non-co-competition outcomes, thus giving a biased measurement. In addition, it was noted that both the specificity of co-competition objectives and the momentum of the measurement (e.g. when the measurement is done across the co-competition life cycle) significantly determine the measurement results at the functional level. Therefore, even with the use of many different functional performances, they would not guarantee the universality of the constructed measure or operationalise real co-competition-related outcomes.

4.2.2 #2 Cooperation and competition approach

Another widely discussed approach to CP operationalization was the two-sided approach, based on the paradoxical nature of co-competition, which suggests the simultaneous measurement of cooperative and competitive behaviour—that is the cooperation and competition approach. A great deal of attention was paid to this concept, especially during the first interview with the least experienced co-competition scholars (i.e. assistant professors). The interviewees identified many elements that referred to both the cooperation and competition dimensions.

First was the cooperative aspect of CP. In the area of cooperation outcomes, access to new resources and efficient use of existing resources through cooperation with a competitor were particularly highlighted:

'It is only through cooperation with this competitor, through this (...) I don't know, even the elements of infrastructure or technology they make available to us, that we are able to use resources which we would not normally use ourselves, even though we have them' [FG1; O2]. Generally, the interviewed scholars discussed the cooperation facet only slightly and not in depth. Most of their comments focused on the results of specific co-competition strategy adoption (note: the results of co-competition, not cooperation) not achievable without this relational strategy. The ongoing considerations of the particular outcomes of simultaneous cooperation and competition (i.e., leaving behind two paradoxical facets) remain in line with the comments from the discussion about the relational approach, as that proposed by Raza-Ullah (2020, 2021) and Raza-Ullah and Kostis (2021).

Second was the competitive aspect of CP. The discussion of the competitive component of co-competition was narrowed to competitiveness reached through co-competition. This was widely discussed during the FGIs, but competitiveness was commented on rather as an additional result of co-competition, not necessarily reflecting the competition dimension of co-competition. In general, our interviewees pointed particularly to improved image and social legitimacy, which shows co-competition as giving different opportunities for leveraging perceived reputation.

Cooperation with a stronger, more well-known, more prestigious entity (ref. to the competitor) meant that some of the elements hitherto attributed to this great player were transferred to this weaker one, who would never have been noticed, who would not have had the opportunity to stand out in some way

or to exist somewhere on the market more widely. (...) it's also related to this power, really, because sometimes we just get warmed in this glow, we become visible on the market [FG1; O3].

The aspect of such an increase in social legitimacy, through cooperation with a more well-known, respected competitor who was highly trusted by the public, for example [FG1; O2].

Third was the two-faceted nature of CP. The final consensus about operationalization based on combined consideration (estimation, evaluation) of the level (intensity, volume) of both cooperation and competition, was that this does not necessarily capture the essence of CP, but reflects the meaning of coepetition *sensu stricto*. Moreover, according to the respondents, the "paradoxical" approach is not relevant when measuring CP as it does not matter much if (and to what extent) coepetitors exploiting coepetition (no matter at which specific stage of the coepetition life cycle) behave cooperatively and competitively, or whether the intensity of both behaviours was equal or not. In their opinion, for coepetition performance, the issue of the simultaneous manifestation of cooperation and competition does not count. However, assessing the propensity to exhibit more of one or the other behaviour is particularly important at an earlier stage, namely at the stage of deciding whether to enter into coepetition. Therefore, instead of considering coepetition outcomes (e.g. coepetition performance), this approach should be considered when thinking about the drivers of coepetition adoption. Last but not least, this part of our FGIs also showed that competitiveness—as either targeted or generated by coepetition—is not neutral for coepetition performance. Indeed, the participants saw competitiveness as a potential component of a coepetition performance measure, suggesting that it would provide a valuable scale element to determine the extent to which coepetition enables its participants to build an advantage over other competitors: *'cooperation (...) with a competitor who is, for example, a stronger player, more well-known and so on, brings us a certain prestige and power'* [FG1; O2].

4.2.3 #3 Relational approach

Next was the relational approach, in which CP operationalization is closely linked to managers' assessment of the general effectiveness of the executed coepetition strategy. Supporting the literature (Raza-Ullah 2020; 2021; Raza-Ullah and Kostis 2021), our focus groups showed that the CP measures considered under this approach focus on the benefits gained by partners involved in the coepetitive relationship. Indeed, combining forces in response to the challenges of the environment can lead to better outcomes, especially as both partners may be seeking both a collaborative and competitive advantage. Interview participants noted that: *'This is probably one of the elements, one of the motives for actually building, creating these coepetitive relationships, that is strengthening the position of coepetitors in relation to other competitors on the market (ref. remaining outside coepetitive relationship/s). (...) In the same way as creating, increasing entry barriers thanks to coepetition, for other potential competitors who would appear or who are already slowly starting to operate on this market, and then these opportunities are limited for them'* [FG1; O3].

It was also strongly and frequently emphasized that coopetition advantage is achieved when firms tackle complex, uncertain and unpredictable challenges together, or take advantage of opportunities by pooling and sharing a wide range of resources. The interviews showed that competitive and cooperative advantages are achieved mainly by maximising the use of resources and by consistently striving to stay ahead of the competition outside the cooperative (formal or informal) arrangements.

Based on our research, coopetition performance is therefore considered through the lens of achieving the expected outcomes of either intentionally executed coopetition strategies or emergently implemented coopetition strategizing processes, or by following simple strategic rules assuming coopetition-specific effects: *'It is always the case that there are some results, some outcomes that we expect and there is always something that unintentionally comes out of such coopetition, (...) there are specific outcomes that we are often even more satisfied with than those we planned at the beginning'* [FG3; O2].

This calls attention to the need to consider a wide range of outcomes that were not taken into account when the decision to initiate action to enter a cooperative relationship was made, i.e., unexpected results. Indeed, such not pre-planned, unforeseen results were claimed to be very important when comprehensively thinking about CP as they can bring significant benefits and appear quite commonly (if not always) among coopetitors.

For example, it was the improvement of relationships, the building of networks, which, as they often said, was even more beneficial for the financial situation of their company than the de facto objective of this cooperation [FG3; O2].

During the discussion, it was also highlighted that the unexpected results of coopetition may not always be positive, therefore, the consequences and negative results should be considered as well.

As [FG3; O2] was talking about these intended and unintended results, I immediately thought of positive and negative results, ...for example, some increases in costs, the loss of, I don't know, employees or something else [FG3; O3].

To recap on the discussions on the relational approach, the participants in all focus groups found this operationalization approach to be the most promising, but incomplete. According to the interviewees, considering unexpected outcomes, including negative ones, would enable a more comprehensive approach to CP operationalization. The most frequently highlighted issues included the syncretic nature of cooperative relationships and their outcomes, the specificity of this relational strategy when compared to other strategic movements, and the situational approach not focusing on general and commonly considered issues, but rather on the specific outcomes gained from a single clear coopetition strategy. Other than the actual content of the discussions, it should also be emphasized that the relational approach was definitely the most enthusiastically and loudly commented upon. Moreover, alongside para-verbal communication, non-verbal communication was also the most intense when discussing this approach to CP.

4.2.4 #4 Temporal approach

In terms of constructing a measure of coepetition performance, all the interviewed groups noted that it is necessary to measure it using a dynamic approach, referring to the dynamic nature of coepetition itself (Klimas et al. 2023; Köseoğlu et al. 2019). This common insight fits in with the tenets of the fourth considered approach to CP operationalization, namely with the time-based approach.

The interviewees repeatedly pointed out that time is a vital aspect of CP operationalization, mainly as various outcomes may appear at different stages of a coepetitive relationship.

I would not see a merely static study as sufficient here. Because, in my opinion, at each stage of this relationship we can already identify certain benefits or results (...). And all of them are more or less measurable, but in my opinion focusing only on the final results, (...) is not sufficient [FG3; O2].

As coepetition relationships are characterised by different combinations of cooperation and competition, which are both dynamic in terms of their level and intensity (e.g., Garri 2021), the temporal aspect when measuring CP is very important: *'what I would certainly add here is that the time aspect in this coepetition performance is very important'* [FG3; O2].

It was agreed across all the focus groups that coepetition outcomes can occur in both the short and long term, so the measures used for the evaluation of CP should enable them both to be captured. Generally, the time perspective and dynamic approach to CP operationalization emerged as a primary concern. This was notably highlighted by one of the attendees, who had researched various aspects and types of coepetition using different methods and different empirical contexts: *'we were thinking about coepetition's impact on short- and long-term success. But these were very vague measures. If you compact it down to something more concrete, I think that would attract a lot of interest'* (ref. of coepetition scholars) [FG2; O1].

In general, our desk research confirmed CP as suited to the situational approach (Rafi Ul Shan et al. 2022), as well as context-sensitive (Czakov et al. 2014; Pattinson et al. 2018), dynamic (Dorn et al. 2016; Meena et al. 2023), and distinct from functional performances (Rai et al. 2022) due to its specificity and relevance only for coepetitors (Raza-Ullah 2020). Our findings indicate that coepetition performance is a multidimensional phenomenon. This is also evidenced by the interviewees, who emphasised the need to develop an integrated measure combining different coepetition aspects. The inclusion of essential observations from the interviews with experienced coepetition researchers has further enhanced the list of theoretical arguments regarding proposals for how to measure CP.

5 Discussion

It is acknowledged that coepetition impacts performance (Gernsheimer et al. 2021; Meena et al. 2023). However, the question remains unanswered as to the proper understanding and operationalization of coepetition performance (Chim-Miki and

Batista-Canino 2017). Indeed, although performance remains one of the most often explored issues in coepetition studies (Gernsheimer et al. 2021; Köseoğlu et al. 2019), the focus is usually placed mainly on coepetition's impacts on firm performance (e.g., Crick 2019; Dorn et al. 2016; Estrada and Dong 2020), or its understanding is equated with knowledge of a wide range of functional performances, or was not explained at all (Gast et al. 2015; Kraus et al. 2019; Le Roy and Czakon 2016). Furthermore, empirical works specifically focusing on coepetition performance are few in number, and there are methodological and measurement limitations (Crick and Crick 2019).

At the same time, it is more frequently highlighted that further development of the coepetition concept requires development of sound operationalizations and valid measurements of coepetition-related constructs (Gnyawali and Song 2016; Johansson et al. 2019; Rai et al. 2022; Gelei and Dobos 2023), including also the commonly acknowledged operationalization of CP (e.g., Raza-Ullah 2020; 2021; Raza-Ullah and Kostis 2021; Ricciardi et al. 2022). Therefore, our research investigated how we should operationally perceive CP.

The integration of the findings from the FGIs and the results from the SLR shows that when measuring CP it would be beneficial to use operationalization that covers the relational and result-based dimension of coepetition outcomes, as well as the dimension that considers the passing of time.

Supporting methodological calls to use already existing scales (Crick and Crick 2019; Czakon et al. 2020a; Klimas et al. 2022), we propose using the scale developed by Raza-Ullah and Kostis (2020), however, in a modified version. On the one hand, we found evidence justifying extending the pool of six originally considered coepetition results to nine. On the other hand, among our interviewees, we found strong support for assessing performance in different time frames, as proposed by Ricciardi and colleagues (2022). Four specific recommendations frame the integrative operationalization emerging from our investigation.

Recommendation no. 1: Coepetition performance measured as strategic-level performance possibly leading to functional-level performances, but not considered part of them.

Although CP can—depending on its specific type, aims and level—lead to functional-level performances (including innovation, market, financial, knowledge performance, etc.), it should be fully distinguished as it results directly from coepetition strategy. On the one hand, CP is not considered at the functional level of firm strategies, but rather at the business or corporate level (Czakon et al. 2020b; Ritala 2012). On the other hand, it results from syncretic coepetition capability (Bengtsson et al. 2020; Rai et al. 2022) which may, but does not have to, be linked with innovation strategy, market strategy, knowledge strategy, etc. ‘*When developing a measurement tool following the functional approaches one may think about the manager who needs to measure coepetition performance, who needs to know what part of firm performance was generated because of coepetition and what part resulted from other activities*’ [FG2; O2].

Supporting conceptual claims, our study shows that the CP operationalization framework cannot be seen as synonymous with function-level performances such as market, financial, customer, marketing or innovation performance (Crick 2020;

Johansson et al. 2019; Rai 2016; Rai et al. 2022; Xie et al. 2023). These should be seen as a wide range of predefined performance-related outcomes of coopetition (Darbi and Knott 2022; Klimas et al. 2023; Raza-Ullah 2020; 2021), not coopetition performance per se or even proxies for CP. Conversely, coopetition performance seems to be a different, additional, syncretic and distinct component of firm performance that is achievable by organizations adopting coopetition strategies. Therefore, it directly impacts firm performance. As our interlocutors said, ‘a *firm involved in coopetition generates coopetition performance and generates firm performance (ref. considered separately) as well*’ [FG2; O2]. Another interviewee [FG2; O1] suggested that there are two different stories, one about organizations exploiting relational rent, or even coopetition rent, and the second about organizations which do not exploit such rent, with the performances of the two basically based on different pillars.

Further, as CP results from coopetition strategy adoption and execution, it should be seen at a strategic, not functional, level. It should be noted, however, that besides a direct effect there is also an indirect effect exerted by CP on firm performance (Feela 2020) via its direct impact on functional performances such as market, innovation or financial performance (Bendig et al. 2018; Crick 2020; Crick et al. 2021). Additionally, our FGIs have shown that the functional approach is not appropriate as the entire scope of performance (e.g. innovation, market, financial) does not result from coopetition strategy adoption. Therefore, if CP were reduced to a functional level and equated with the functional dimensions of performance, then the level measured would not reflect reality, i.e. it would be overestimated as it would also include outcomes not related to coopetition – ‘*With the functional approach it is multidimensional, there is market, financial, innovation, (...) all these are dimensions of firm performance. When the firm executes a coopetition strategy, it is not the case that all these dimensions result from coopetition, there are impacts made by other decisions and strategies, functional strategies to the greatest extent*’ [FG2; O2].

Recommendation no. 2: Coopetition performance should be measured as resulting from simultaneous cooperation and competition (i.e. from coopetition), and not measured through these two in themselves.

CP results from coopetition, i.e., simultaneous cooperation and competition (Bengtsson and Kock 2000). This means that it takes one of the forms implied by coopetition, and as such should not be measured in the same way as coopetition (e.g., Bouncken and Friedrich 2012; Crick 2020; Yang and Zhang 2022). It should be noted that CP underlies coopetition-based rent as it is more than the simple sum of competitive advantage and collaborative rents (Czakon et al. 2014; Lado 1997). It is highlighted that it is not enough to rely on alliance capability to make a coopetition strategy successful, instead a distinct coopetition capability is needed (Bengtsson et al. 2020).

Coopetition covers two paradoxical facets simultaneously (Bengtsson and Kock 2000): cooperation and competition (Baruch et al. 2012; Bengtsson et al. 2020; Raza-Ullah 2020; 2021). Indeed, it is acknowledged that when adopted properly, coopetition strategy covers two sub-strategies—cooperative and competitive (Le Roy and Czakon 2016), and only with such a two-sided approach

to a relational business-to-business strategy can it lead to superior performance (Bengtsson and Raza-Ullah 2016; Garri 2021; Klimas and Czakon 2018). This suggests that the cooperative and competitive facets of coopetition should be covered by the conceptualization of coopetition, not coopetition performance seen as a result of coopetition. It is claimed that ‘*to accurately measure coopetition activities (note—not the results of such activities), academics must establish a tool that captures the propensity of these cooperative and competitive behaviors*’ (Crick and Crick 2020: 209). Indeed, such an approach to the operationalization of coopetition using a multi-item and two-sided approach (covering cooperation and competition-related questions) was developed by Bouncken and Friedrich (2012) and used later on, for instance, by Hameed and Naveed (2019) also in a slightly expanded version (e.g., Bouncken and Kraus 2013; Crick 2020; Yang and Zhang 2022). Given the above, the issue of the dual face of coopetition and its paradoxical nature is not relevant at the stage of CP measurement because this aspect is ensured at the stage of coopetition establishment (Bouncken and Kraus 2013; Chim-Miki and Batista-Canino 2017)—‘*when talking about coopetition performance, it is no longer relevant to separate the two (ref. to cooperation and competition); at this stage they are inseparable*’ [FG2; O1]—as one of our interviewees claimed.

Recommendation no. 3: Coopetition performance measured as a peculiar performance type concerning competitors only.

Coopetition-based performance should always be considered in a cooperative development setting (Johansson et al. 2019), seen as a building block of firm performance specific for organizations implementing coopetition strategy (Rai et al. 2022; Raza-Ullah 2020; 2021; Raza-Ullah and Kostis 2020) and dependent on coopetition-specific goals (Le Roy and Czakon 2016), coopetition experience (Estrada and Dong 2020; Rai et al. 2022) and coopetition capability (Bengtsson et al. 2020; Raza-Ullah et al. 2019). Following the literature, but also using supportive findings from our field research (Table 3 and 4), we claim that CP can be measured using the scale developed by Raza-Ullah and Kostis (2020). This approach was discussed as the most appropriate of those under consideration (Fig. 1), and it generated the most positive responses. The interviewees spent the majority of the time commenting on this particular approach, and the majority of detailed comments and remarks referred to it and its particular sub-components. One can summarize that in the light of our FGIs ‘*I like this green one (the relational approach was market in green on the Miro board—see Figs. 1 and 2) the best in general*’ [FG2; O2].

Nonetheless, to make the operationalization more comprehensive, we decided to expand the original scale using newly added items focused on competitiveness, and negative and unexpected results. CP is understood through coopetition-specific effects (Bouncken and Friedrich 2012; Rai et al. 2022). However, one should note that these results should cover both positive results gained from successful coopetition (Raza-Ullah 2020; Ricciardi et al. 2022), as well as negative ones obtained when coopetition fails (Bengtsson et al. 2020; Crick 2020). Moreover, CP is seen as specific for organizations adopting coopetition strategy. Given that coopetition strategy may be adopted as a purposeful strategy or be used as an emergent approach based on a flexible strategizing process (Czakon et al. 2014; Le Roy et al. 2019), it

Table 4 Summary of online focus group findings

Code	#1 Functional approach	#2 Cooperation & competition approach	#3 Relational approach	#4 Temporal approach
FG1	Market results Market share New market creation & entering new market Financial results Transaction cost reduction Knowledge-related results Know-how Innovation-related results New technologies, infrastructure	Cooperation-related performance Cooperation addressing very specific goals Efficiency in mission execution Competition-related performance Improved competitive advantage Higher competitiveness Improved image, reputation Social legitimization, trust Broadening customer base	Results achievable only through cooperation Access to new resources and optimization of own resource allocation and exploitation Maximization of internal efficiency and performance	Short and long period of results verification Time-dependent goals including strategic, tactical and operational
FG2	The risk of an instrumental and thoughtless approach to measurement Not always relevant	Not to separate cooperation and competition	Thematic results Effectiveness Efficiency	Time perspective Short-term outcomes Long-term outcomes

Table 4 (continued)

Code	#1 Functional approach	#2 Cooperation & competition approach	#3 Relational approach	#4 Temporal approach
FG3	<p>Financial performance as a final functional performance resulting from innovation, knowledge, market outcomes</p> <p>Factor analysis of relevant functional types of the structure of cooperation performance</p>	<p>Distinguishing specificity of cooperation under simultaneous competition</p> <p>Difference in relation to non-competitive cooperation</p> <p>Competitiveness in relation to non-cooperating competitors</p>	<p>The core of firm performance of cooperators</p> <p>Expected and unexpected results</p> <p>Positive and negative results</p> <p>Measurable and unmeasurable results</p>	<p>Results are changeable and differ in particular phases of cooperation life cycle</p> <p>Dynamic approach</p> <p>Three perspectives simultaneously: short-term, long-term and real-time perspective</p>
Conclusion	<p>Not recommended in research on cooperation performance in future:</p> <p>Functional performances may be linked with cooperation performance, e.g. may result from or be driven by cooperation performance</p>	<p>Not recommended in research on cooperation performance in future:</p> <p>Two-sided approach determines cooperation phenomenon thus is considered when measuring cooperation not its effects</p>	<p>Recommended in research on cooperation performance in future:</p> <p>Cooperation performance as results and outcomes specific for cooperators only</p>	<p>Recommended in research on cooperation performance in future:</p> <p>Dynamic view and measurement of cooperation performance components</p>
Operationalization frames	<p>#1 Cooperation performance measured as strategic-level performance possibly leading to functional-level performances, not reduced to them</p>	<p>#2 Cooperation performance measured as resulting from simultaneous cooperation and competition (i.e. from cooperation), not measured through these two</p>	<p>#3 Cooperation performance measured as a peculiar performance type concerning cooperators only</p>	<p>#4 Cooperation performance operationalized as providing results on a dynamic and continuous basis</p>

seems reasoned to consider not only the expected results but the unexpected ones as well, as claimed by our interlocutors—‘(...) *I agree with the previous speakers that it would be necessary to investigate both the expected and the unexpected... That’s really, that’s a great idea, indeed!*’ [FG3; O1].

Recommendation no. 4: Coopetition performance operationalized as providing results on a dynamic and continuous basis.

The literature postulates coopetition as dynamic and changeable over time (Garri 2021), also in terms of specific features characterizing coopetition in a particular moment/period (Bacon et al. 2020), as well as generated results (Crick and Crick 2021; Ricciardi et al. 2022). ‘*That’s what I’ve been wondering from the very beginning, it’s absolutely (important), I also share this issue of including it in the measurement (...) well I wouldn’t see such a static study as sufficient here. (...) what I would certainly add here is that the time aspect in this coopetition performance is very important. (...)*’ [FG3; O2]. Therefore, due to the dynamic and changeable nature of coopetition phenomena (Devece et al. 2019; Köseoğlu et al. 2019; Yadav et al. 2022), it is highly necessary to consider the time perspective as the performance of a coopetitive relationship is sensitive to passing time, the coopetition phase, or the maturity of the relationship (Klimas et al. 2023). Indeed, as one of our interviewees claimed, ‘*there are short-term outcomes and there are long-term outcomes. And it could be that in the short term I get a positive effect because my revenues grow, but in the long term it’s the competitor who grows more*’ [FG2; O1].

Summing up, based on both the desk research conducted using SLR and the field research conducted using FGIs, we claim that it is reasoned to frame the operationalization of coopetition performance through the lenses of its widely understood results considered through the dynamic view. In particular, we suggest that CP (recommendation #1) should be measured as strategic-level performance possibly leading to functional-level performances, wherein it should not be considered part of them, and (recommendation #2) it should be measured as resulting from simultaneous cooperation and competition (i.e. from coopetition), wherein it should not be measured through these two. At the same time, we argue that it is reasoned to consider CP as a distinct and peculiar type of performance that is consistently recognized in both long- and short-term perspectives. Therefore, we also suggest that CP (recommendation #3) should be measured as a peculiar performance type concerning cooperators only, wherein it should not be measured as outcomes not related to coopetition, and (recommendation #4) it should be measured in a way that covers results generated on a dynamic and continuous basis, but should not be measured in a static (either short- or long-term) view.

The results support recent literature suggesting that it is not only short-term effects (Czakov et al. 2020a; Rusko et al. 2016) or long-term implications (Grevén et al. 2022) that are relevant, as coopetition is considered as a long-term and dynamic phenomenon, and thus both time perspectives should be considered simultaneously (Kylanen and Mariani 2012; Ricciardi et al. 2022). Given the above, we claim that taking a time perspective is necessary when measuring coopetition performance, for instance, using the approach offered by Ricciardi and colleagues (2022). Overall, a comprehensive understanding of CP requires a dynamic approach

and ‘*considering both time perspectives has huge potential in terms of providing a dynamic, not a static picture*’ [FG2; O1], thus resulting in better managerial decisions. This is because keeping an appropriate balance between competition and cooperation reflects the dynamic nature of the coopetition phenomenon (Corbo et al. 2023; Séran et al. 2023), while managing this balance is one of the main streams in coopetition research (Köseoğlu et al. 2019).

Nonetheless, besides the above recommendations, when combined with methodological recommendations made in coopetition (but also in strategic management) literature, our findings from the SLR and some side comments made by our interlocutors during the FGIs, prompted us to make a further fifth recommendation of a slightly more measurement-related nature.

Recommendation no. 5: A multi-item, subjective and situational approach is needed when measuring coopetition performance.

CP appears to be complex and multidimensional (Chen et al. 2021; Crick 2019; Xie et al. 2023). Therefore, a multi-item approach recommended in research on management-related constructs (Ramanujam et al. 1986) is reasoned for its comprehensive operationalization. This remains in line with claims made in other research focused on sound operationalization of coopetition-related constructs, stating that multidimensionality and a multi-approach to operationalization are needed due to the complex (Chen et al. 2021; Crick and Crick 2021), paradoxical (Bengtsson et al. 2020; Raza-Ullah 2020; 2021), and slightly abstract nature of coopetition per se (Crick and Crick 2019). Therefore, the multi-item approach presented in Table 5, together with a solid recommendation for considering the nine coopetition-related outcomes in both short- and long-term perspectives, is recommended for future research on CP.

Following the most popular approach used so far in research on CP (e.g., Raza-Ullah 2020; 2021; Raza-Ullah and Kostis 2020), but also in studies on performance in the competition context (e.g., Albort-Morant et al. 2018; Crick and Crick 2021; Rai 2016; Rai et al. 2022), we see it as reasoned to use a Likert-type scale when measuring coopetition performance. In particular, we recommend using a 7-point scale as this has to date been used more frequently, which may be of importance in the case of comparative investigations.

6 Conclusions

Our research aligns with one of the burgeoning domains within the field of coopetition studies, with a specific emphasis on coopetition outcomes. These outcomes, as highlighted by Devece et al. (2019), Meena et al. (2023), and Yadav et al. (2022), notably encompass coopetition performance. CP is widely recognized as a paramount result of coopetition strategy adoption, as underscored by prior research conducted by Bouncken and Friedrich (2012), Crick (2019), Petter et al. (2014), Raza-Ullah (2020), and Riccardi et al. (2022).

The literature review conducted by Dorn and colleagues (2016: 496) highlights that a “*coopetitive relationship can create an additional value; for example, in terms of improved processes, enhanced services for consumers, and reduced use of*

Table 5 Operationalization framework for coopetition performance

This relationship is successful in the following manner...	Application in field research	Exemplary conceptual support	Exemplary empirical support
... it produces the expected results and meets its milestones	Raza-Ullah 2020 ; Raza-Ullah 2021 ; Raza-Ullah and Kostis 2020	Bouncken and Friedrich 2012 ; Johansson et al. 2019	We can measure what the coopetition gave us, what I achieved, what results I wouldn't have been able to achieve on my own from my perspective [FG1; O1]
... it generates revenue or customer references that meet or exceed expectations		Lindström and Polska 2016 ; Daidij and Egeert 2018	<i>Increasing efficiency through the implementation of cooperation (...) there is an increase in the overall dynamic of activities in the implementation of the mission</i> [FG1; O2]
... it enables a high-quality solution based on an integration of both firms' technologies, resources, and/or expertise		Gnyawali and Park 2009 ; Bouncken et al. 2018 ; Garri 2021 ; Klimas et al. 2022	<i>In general, the green approach (ref. measurement approach developed by Raza-Ullah and Kostis (2020)) was agreed as the best one</i> [FG2; O2]
... it generates new customers, products, or projects		Bendig et al. 2018 ; Bouncken et al. 2018 ; Corbo et al. 2023	<i>I would like to draw attention to the perspective of the customer; the broadly understood customer. (...) maybe (ref. due to cooperation) we are attracting the interest of our cooperator's target group</i> [FG1; O2]
... it adds to our core competence and/or competitive advantage	Raza-Ullah 2021 ; Raza-Ullah and Kostis 2020	Osarenkhoe 2010 ; Della Corte and Sciarelli 2012 ; Le Roy and Fernandez 2019	<i>Certain opportunities or certain pathways that were previously inaccessible are opening up</i> [FG1; O3]
... it reduces time to market for launching products, services, or solutions		Bouncken and Kraus 2013 ; Dorn et al. 2016 ; Garri 2021	<i>There is a time reduction at many levels</i> [FG2; O1]

Table 5 (continued)

This relationship is successful in the following manner...	Application in field research	Exemplary conceptual support	Exemplary empirical support
... it increases competitiveness	NI	Della Corte and Sciarelli 2012; Bouncken et al. 2015; Chim-Miki and Batista-Canino 2017; Crick and Crick 2020	(ref. to cooperation bringing) <i>Internal strength, we strengthen ourselves and thus build our competitiveness. In fact, we are perhaps also creating new competitive factors of our own</i> [FG1; O2] <i>This is because we and the partner are more competitive in the market thanks to our cooperation</i> [FG3; O2]
... it generates unexpected, positive results	NI	NI	<i>It is always the case that there are some results, some outcomes that we expect, and there is always something that emerges from such cooperation</i> [FG3; O2]
... it also generates unexpected negative results	NI	Bouncken et al. 2015; Bengtsson et al. 2016; 2020; Crick 2020	(ref. to suggestion that it would be good) <i>to show here somewhere these possibly dark sides of this cooperation.</i> [FG3; O3] <i>Definitely!</i> [FG3; O2] <i>That's right</i> [FG3; O1]

FG1 online focus group interview with assistant professors, FG2 online focus group interview with full professors, FG3 online focus group interview with associate professors, NI not identified in the literature

resources". This remains in line with the results of other SLRs (e.g., Czakon et al. 2014; Gast et al. 2015) emphasizing that cocompetitors' performance is determined by competitive behaviours and cocompetition strategy adoption, and that cocompetitive relationship exploitation reaches a great deal further than just economic, innovation or market performance. At the same time, although cocompetition outcomes are frequently addressed in empirical studies, their operationalizations and measurements narrow the cocompetition outcomes—usually considered through the lenses of CP—to specific types of functional-level performances (including innovation performance to the greatest extent), as well as equating them with firm performance, and focusing on the static view. Therefore, the more recent literature highlights the need to adopt a much more specific focus in cocompetition research (Garri 2021; Klimas et al. 2023), and calls for more attention to be paid to operationalization and measurement issues (Chim-Miki and Batista-Canino 2017; Crick and Crick 2019; Narayan and Tidström 2020; Rai 2016). For instance, we need to focus on a better understanding of cocompetition outcomes (Bouncken et al. 2015; Czakon et al. 2020b; Dorn et al. 2016), including those gained in a long-term perspective (Czakon et al. 2020a). Indeed, in cocompetition literature, there is no consensus on understanding (Xie et al. 2023) or measuring cocompetition (or even alliance) performance (Rai et al. 2022). Such a focus is reasoned due to the limited knowledge of CP (Xie et al. 2023), including the measurement of cocompetition performance (Narayan and Tidström 2020; Rai 2016; Ritala 2012).

6.1 Contribution toward cocompetition theory, research and practice

In addressing the above gaps, limitations and recommendations, this paper yields theoretical contributions by providing a better understanding what CP is and is not. It also contributes through the development of a comprehensive, literature- and field study-based, multidimensional, and dynamic definition and operationalization framework of CP.

Firstly, our field exploration showed that cocompetition performance is primarily associated with the perception of cocompetition success, as argued by Ricciardi et al. (2022). It also pertains to the perceived advantages linked to the attainment of objectives within a specific cocompetition relationship established and maintained as a result of a cocompetition strategy (implemented in a planned or unplanned way Czakon et al. 2020a; Pattinson et al. 2018; Raza-Ullah 2020; 2021; Raza-Ullah and Kostis 2020; Wang and Chen 2022), cocompetition strategizing (Le Roy et al. 2019; Lundgren-Henriksson and Kock 2016), or cocompetition practices (Dahl et al. 2016; Darbi and Knott 2022).

Secondly, our study empirically confirms that CP should be measured in a dynamic view (short- and long-term results should be considered—Ricciardi et al. 2022), regarded as cocompetition-specific (resulting from cocompetition—Raza-Ullah and Kostis 2020; separated from functional-level performances—Rai et al. 2022), and resulting from cocompetition strategy adoption (resulting from cocompetition, not measured in the same way as cocompetition Crick 2020; Kwon et al. 2020; Yang

and Zhang 2022). Therefore, as shown in Table 4, our findings support prior claims that CP may be considered using a combination of relational (Raza-Ullah 2020; 2021) and temporal (Ricciardi et al. 2022) approaches, but that it is not appropriate to reduce its understanding to specific, functional-level outcomes as in functional approach, or to the interplay of competitive and cooperative ties as in the cooperation and competition approach.

Thirdly, based on the integrated results from our two-stage research, we offer the following definition of CP: *Co-competition performance denotes the managerial evaluation of firm success derived directly from its co-competitive relationships. It is manifested in the firm's capacity to attain, and potentially surpass, anticipated outcomes of co-competition, yielding diverse co-competition benefits (across financial, market, innovation, customer and resource domains) and thus leading to leveraging the firm's competitiveness over both short- and long-term horizons.* Notably, this proposed definition of CP is of a synthesizing nature, taking into account previous propositions and insights regarding the conceptualization of this complex construct, notably those made by: Bouncken and Friedrich (2012); Bouncken et al. (2015), Crick and Crick (2020), Raza-Ullah (2020; 2021), Raza-Ullah and Kostis (2020), Rai et al. (2022), Ricciardi et al. (2022).

In terms of the methodological perspective related to our contribution, we claim that the offered operationalization (i.e. Recommendations from 1 to 5; Table 5), if used in future studies, will make CP studies more accurate (focused on CP per se) and more comparable, and will thus bring us closer to generalizations. Indeed, it is recommended to focus on the operationalization and measurement of constructs relevant to co-competition research (Gnyawali and Song 2016; Gelei and Dobos 2023), as due to the lack of sound and commonly acknowledged approaches, it is hard (if at all possible) to push co-competition theory further since research comparisons and cumulative generalizations are limited (Bengtsson and Raza-Ullah 2016; Crick 2019; Czakon et al. 2014; Gnyawali and Song 2016).

Our study also has some implications for managerial practice, as the development of comprehensive operationalization of co-competition performance serves as a practical tool, enabling management executives to precisely comprehend various facets of the effectiveness and success of co-competition. With this approach, managers can better assess how different factors and issues impact CP (i.e. particular items used under operationalization framework), leading to more accurate strategic and operational decision-making. Firstly, given the explicit operationalization (i.e., nine components covered by operationalization framework—Table 5), managers can be more aware of what is important in building CP, and can measure and monitor these issues so that they can react quickly, if necessary, thereby further increasing CP and co-competition rent. We see this as managerially relevant as the effectiveness of co-competition strategy is highly uncertain (Czakon et al. 2020b; Le Roy et al. 2019), and co-competitors continuously face a wide range of tensions (Jakobsen 2020; Raza-Ullah 2020; Séran et al. 2023) and are forced to handle decision dilemmas (Fernandez et al. 2014) due to the paradoxical nature of the co-competition phenomenon (Bouncken et al. 2018; Czakon et al. 2014; Ritala and Hurmelinna-Laukkanen 2009). Secondly, our interviews confirm the need to focus on both short- and long-term co-competition

performance, as recommended by Riccardi and colleagues (2022). We believe that highlighting the need to go further than short-term coopetition performance will help managers limit their managerial and strategic myopia that restricts firm performance and prevents superior performance (Czakov et al. 2023).

6.1.1 Limitations of the study

Alongside the contributions of the study there are also some limitations, mainly related to the methodological approach adopted. Firstly, a meta-systematic literature review was used in the desk research, thus only past systematic literature reviews (Paul et al. 2021; Kraus et al. 2024) were analysed. This could have influenced the identified conceptualizations and measurement approaches to CP verified in the second stage of the research process and underlying the proposed operationalization framework. Secondly, online focus group interviews were used for the field research. Therefore, the results of the verification process are susceptible to typical limitations inherent in such studies (Smithson 2000; Sweet 2001; Hollander 2004; Moore et al. 2015), such as limited independence of the interviewees, the mutual influence of participants' opinions, the tendency to share acceptable opinions, the interpretational subjectivity of the research team, and the loss of non-verbal cues. Nonetheless, at the same time, the application of online FGIs allowed us to overcome the problem of spatial distance (Fox 2007) and collect not only individual but also collective insights (Sweet 2001; Moore et al. 2015), which we believe were of high importance as our informants were diversified in terms of the specific focus in their coopetition research (as shown in Table 2). Moreover, given the specificity of our key respondents, it is also worth noting the limited number of interviewees (constrained by the small pool of Polish researchers publishing on coopetition in JCR-listed journals), the study's confinement to coopetition researchers from a single country, and the deliberate selection of coopetition researchers as key informants despite the fact that coopetition is intensively exploited by practitioners. Taken together—even though the FGIs were focused on the verification of CP knowledge integrated from past conceptual and empirical articles—these limitations may be seen as constituting bias with implications for the comprehensiveness, credibility and generalizability of the findings. It is worth noting, however, that with the triangulation of data sources (i.e., primary data collected through online interviews and secondary data collected through a meta-systematic literature review), we assert that the risk of potential bias resulting from the contextuality of our FGIs was limited (Hollander 2004).

In terms of limitations, it is also essential to consider that this paper aims at developing an operationalization framework, so even though we say how CP should be measured, we do not test and validate the developed approach. It should be noted that we cumulatively bring scholars closer to a sound measurement of coopetition performance through in-depth analysis of the literature and focus group interviews. However, the next step should be the application of the developed operationalization framework in a large-scale, quantitative study aimed at scale validation as has been done, for instance, in the case of coopetition (Crick and Crick 2019), coopetition antecedents (Czakov et al. 2020a) and coopetition capability (Rai et al. 2022).

6.1.2 Future research paths

In addition to addressing the previously mentioned limitations through further research, we find it compelling to explore CP factors as suggested by Ritala (2019), or the antecedents of performance-related coopetition outcomes as proposed by Gernsheimer et al. (2021). Such a research recommendation remains in line with one of the specific suggestions made based on an in-depth analysis of the current stock of knowledge on coopetition—“*What are the factors of coopetition leading to a successful alliance?*” (Meena et al. 2023: 130). In coopetition literature, coopetition antecedents, factors, drivers, triggers and motives remain the most frequently and most deeply explored (Chim-Miki and Batista-Canino 2017; Czakon et al. 2014; Devece et al. 2019; Dorn et al. 2016; Klimas et al. 2023). As we know a great deal about the wide range of drivers of coopetition strategy adoption (Czakon et al. 2020a), it is now time to find out what the drivers are of the performance of the adopted coopetition strategy.

Our operationalization framework considers the impact made by the dynamic nature of coopetition on CP (Crick and Crick 2019; Pellegrin-Boucher et al. 2013; Rusko 2016) as it includes measures focused on both short- and long-term perspectives. Nonetheless, this might not be sufficient, as coopetition, including its factors, attributes, process and outcomes, may significantly differ across particular phases of the coopetition life cycle (Klimas et al. 2023). Indeed, our interviewees provided comments pointing out the role of coopetition maturity, development phase, and the stage of the life cycle in CP. Therefore, it might be interesting to dig deeper and carry out a longitudinal investigation focused on changes in the levels of CP across the coopetition life cycle.

Furthermore, two methodologically complementary research paths are recommended given the recent trends in coopetition research (Bouncken et al. 2020; Drăgan et al. 2023; Rai et al. 2022). First is research that applies sufficiency-based logic (e.g. regression, structural or hierarchical modelling, etc.; Dul 2016) to recognize factors that significantly impact CP. For instance, so far, paradoxicality has been identified as leveraging coopetition performance (Raza-Ullah 2020; Ricciardi et al. 2022), while coopetition engagement (Raza-Ullah 2021) and coopetition intensity (Raza-Ullah and Kostis 2020) have been recognized as positively impactful, although with intra-coopetition trust as strengthening this impact. At the same time, other factors have also been suggested as potentially impactful (e.g. conflicts and ethical decisions—Chatterjee et al. 2023; value circulation mechanisms—Narayan and Tidström 2020), however, our empirically verified or tested knowledge on CP drivers remains limited.

Second is the application of necessity-based logic (e.g. necessary condition analysis, NCA) in future research to recognize factors necessary (Dul 2016) for generating CP. Indeed, the literature reviews show that certain factors are critical (key) success factors for CP (Corbo et al. 2023; Gernsheimer et al. 2021; Xie et al. 2023), including for instance, trust, commitment, complementarity, reciprocity, managing conflicts and incompatibilities (Petter et al. 2014). These potential critical success factors have not to date been analysed using NCA (e.g., Chim-Miki and Batista-Canino 2017; Chin et al. 2008), although this analysis method is

methodologically appropriate (Dul 2016). All in all, NCA is still novel in the field of cooptation (Bouncken et al. 2020; Klimas et al. 2022), while future research needs a broader scope in terms of the methods used to investigate the cooptation phenomenon (Devece et al. 2019; Gnyawali and Song 2016; Meena et al. 2023; Xie et al. 2023).

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Availability of data and material The list of analyzed works and reviewing protocol can be available at individual request. Transcriptions of focus group interviews (in Polish) can be shared upon request.

Declarations

Conflicts of interest The authors have no conflict of interest to declare.

Ethical approval The manuscript has not been published previously, it is not under consideration for publication elsewhere, and if accepted, it will not be published elsewhere in the same form, in English or in any other language.

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