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Coopetition and sales performance: Evidence from non-mainstream sporting clubs

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**COOPETITION AND SALES PERFORMANCE: EVIDENCE FROM
NON-MAINSTREAM SPORTING CLUBS**

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COOPETITION AND SALES PERFORMANCE: EVIDENCE FROM NON-MAINSTREAM SPORTING CLUBS

Abstract

Purpose – Small sports clubs are the life-blood of particular communities, even though many are under-resourced and have difficulties in operating under an individualistic business model. Although coopetition (simultaneous cooperation and competition) has been recognised as a positive driver of performance, the complexities of this association remain under-researched. Consequently, grounded in resource-based theory and the relational view, the purpose of this current study is to examine the moderating roles of inter-firm conflict and competitive intensity in the coopetition – sales performance relationship.

Design/methodology/approach – After undertaking 25 field interviews, survey data were collected from 151 non-mainstream sporting clubs in New Zealand. This setting was ideal, since it hosts high-degrees of cooperativeness and competitiveness. After assessing the statistical data for all major robustness checks (including common method variance and endogeneity bias), the hypothesised and control paths were tested through a hierarchical regression analysis.

Findings – Coopetition had a positive relationship with sales performance, but inter-firm conflict yielded a negative interaction effect. Surprisingly, this link was positively moderated by competitive intensity.

Practical implications – Under-resourced entrepreneurs (like those in many small sports clubs) should consider cooperating with their competitors, as these strategies can assist them to improve their sales performance. However, they should be careful when engaging in such activities due to the considerable risk that rival firms might behave opportunistically, which might harm their performance. That said, owner-managers are advantaged if they operate in sectors where there are lots of competitors because there is increased scope to collaborate with “complementary” and trustworthy rivals that can help them to achieve mutually-beneficial outcomes. Indeed, sporting governing bodies (including those that operate on a non-profit basis) should encourage their members to engage in coopetition due to these positive financial consequences.

Originality/value – This investigation contributes to the extant literature by evaluating the competitive forces affecting the link between coopetition and sales performance. Specifically, new evidence emerges on the circumstances where coopetition is (and is not) a performance-enhancing entrepreneurial strategy. Further, this investigation provides unique insights regarding coopetition among non-mainstream sporting clubs, adding new knowledge to the sports entrepreneurship literature. Moreover, by infusing resource-based theory with the relational view, stronger arguments feature how owner-managers can navigate the paradoxical forces that drive competition activities. This study ends with several practitioner implications, alongside a series of limitations and avenues for future research.

Keywords: Coopetition, competitive intensity, inter-firm conflict, sales performance, resource-based theory, relational view, non-mainstream sports, sports entrepreneurship.

Introduction

“Although the sports market is hostile and competitive, it can be proposed that a collaborative strategy can enhance the business performance of the organisations involved” (Hammerschmidt *et al.*, 2020, p. 2).

Recently, the global sports industry was valued at an estimated \$US 488.50 billion (The Business Research Company, 2018). While a large proportion of this sum originates from mainstream sports in North America

(World Trademark Review, 2017), non-mainstream sports are gaining popularity. For example, Liverpool Ladies Football Club has recently acquired large-scale sponsorship deals, Netball Australia has collaborated with major television channels to boost sales, and the rise in social media has improved access to online sports (including gambling on various events) in numerous countries (Adams, 2018). Although non-mainstream sports are becoming increasingly popular (Downward and Rasciute, 2010), many are under-funded (Ratten and Ratten, 2011). Despite non-mainstream sporting clubs often being the life-blood of certain communities, via job creation, health and well-being benefits, and crime prevention, they do not receive the same degree of public and private funding as mainstream sports¹ (Ratten, 2010; Trussell, 2016). Consequently, some under-resourced (including non-mainstream) sporting organisations collaborate with their competitors (coopetition) to survive and grow within this rapidly changing industry (Vos and Scheerder, 2014; Crick and Crick, 2016a; Wemmer *et al.*, 2016). This is opposed to employing an individualistic business model, whereby, owner-managers operate on the basis of their own resources and capabilities.

Coopetition is “a paradoxical relationship between two or more actors, regardless of whether they are involved in horizontal or vertical relationships, simultaneously in cooperative and competitive interactions” (Bengtsson and Kock, 2014, p. 180). Researchers have examined how sporting clubs might manage the interplay between cooperation and competition, including professional teams (Robert *et al.*, 2009) and non-profit sporting organisations (Lorgnier and Su, 2014). This is typically driven by under-resourced clubs collaborating with their competitors to access equipment and information (resources and capabilities, respectively) for mutually-beneficial performance consequences (Crick and Crick, 2016a). As noted throughout the entrepreneurship, marketing, and strategic management literature, while coopetition is likely to have a positive association with performance (Bengtsson and Kock, 2000; Ritala, 2012; Hannah and Eisenhardt, 2018; Kraus *et al.*, 2019), limited research surrounds the nature of this association, in terms of

¹ Taekwon-Do is not unified under the same rules and governing body and includes various break-away organisations with different spellings, like Taekwondo (see Crick and Crick, 2016; Moenig and Kim, 2017). Indeed, one form of the sport features in the Olympics, but this is separate to that featured in this current study. Moreover, it is not “mainstream”, vis-à-vis, sports, such as football (as per Downward and Rasciute, 2010). Hence, the term “non-mainstream” is utilised.

the moderating factors that might affect the coopetition paradox. In fact, firm-level and environmental-level competitive forces (like inter-firm conflict and competitive intensity) might distort the relationship between coopetition and performance (see Hoffmann *et al.*, 2018; Crick, 2019; Czakon *et al.*, 2020). Such contingencies may provide new insights into the circumstances where coopetition is (and is not) a performance-driving entrepreneurial strategy.

Consequently, under resource-based theory and the relational view (see Barney, 1991; Lavie, 2006; Dyer *et al.*, 2018), the objective of this current study is to explore certain firm-level and environmental-level competitive forces affecting the relationship between coopetition and sales performance. By applying coopetition activities to a non-mainstream sporting context (with clubs allowed to make profits, but affiliated to a non-profit governing body), this investigation offers insights into how such organisations can survive and grow within their markets². By addressing the research objective, three contributions are made to strengthen the entrepreneurship literature:

1. Unique insights evidence how firm-level and environmental-level competitive forces (inter-firm conflict and competitive intensity) can moderate the link between coopetition and sales performance (building upon Hoffmann *et al.*, 2018; Czakon *et al.*, 2020; Crick and Crick, 2021).
2. Resource-based theory and the relational view are integrated as theoretical perspectives that offer new knowledge into the nature of the relationship between coopetition and sales performance (following Dyer and Singh, 1998; Lavie, 2006; Dyer *et al.*, 2018).

² This study contributes to the cross-disciplinary literature by offering new and improved insights into the relationship between coopetition and sales performance (for example, building upon Ritala, 2012; Felzensztein *et al.*, 2014; Hoffmann *et al.*, 2018; Czakon *et al.*, 2020). Nonetheless, the sports industry provides a unique setting for making this theoretical contribution (as noted by Robert *et al.*, 2009; Lorgnier and Su, 2014; Crick and Crick, 2016). That is, context is vital in entrepreneurial research because it allows scholars to shape theory with novel evidence from a setting that develops academics' understanding of practical applications of theories (Jones and Rowley, 2011). Since sports entrepreneurship refers to the innovative, proactive, and risk-taking behaviours employed by sporting organisations (Ratten, 2012), this current investigation evaluates coopetition as an entrepreneurial strategy within a sporting context.

3. Coopetition is examined within non-mainstream sporting clubs to illustrate an alternative perspective regarding how such organisations collaborate with their competitors (extending Robert *et al.*, 2009; Lorgnier and Su, 2014; Wemmer *et al.*, 2016; Hammerschmidt *et al.*, 2020).

To make these three contributions, this paper is structured as follows. First, the conceptual framework is presented, alongside the research hypotheses and control paths. Second, the adopted methodology is described. Third, the empirical results are presented. Fourth, these results are discussed in relation to the extant literature. Fifth, the study is concluded, with several practitioner implications and a series of limitations and avenues for future research.

Theory and hypotheses

Overview of resource-based theory

The resource-based view examines the link between organisational resources and capabilities and company performance (Barney, 1991; 2001). A seminal component of this theoretical lens is the value, rarity, inimitability, and non-substitutability (VRIN) framework, which focuses on the extent to which firms' tangible and intangible assets yield higher-levels of performance (Barney, 1991). Nevertheless, company performance can be measured in various capacities, including sustainable competitive advantages and other financial metrics (Ray *et al.*, 2004; Crick and Crick, 2021). In this current study, sales performance was utilised as the outcome variable because it assesses the degree to which owner-managers have created value for their target markets by acquiring revenues from their customers (following Morgan *et al.*, 2009). Likewise, sporting clubs have been found to utilise sales performance as an appropriate measure, since they require this income to operate (see Lorgnier and Su, 2014; Wemmer *et al.*, 2016). In turn, sales performance was conceptualised as a key outcome of coopetition strategies. In doing so, the seminal foundations of the resource-based view were considered (like the VRIN framework), alongside more recent developments that have been made to this theoretical lens (building upon Hannah and Eisenhardt, 2018; Crick *et al.*, 2020).

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Extensions to the resource-based view

The core elements of resource-based theory pertained to how decision-makers can leverage their tangible and intangible assets to achieve higher-levels of performance (see Barney, 1991). However, this viewpoint has evolved, in terms of its assumptions relating to how companies can operate within their markets (Barney *et al.*, 2001; Nason and Wiklund, 2018). As one of the most famous illustrations, Barney (2001) and Priem and Butler (2001) debated over the strengths and weakness of the resource-based view, finding that it needed to account for the volatility of the competitive business environment – and its impact on the performance outcomes of firm-level resources and capabilities. Under this logic, this current investigation draws upon this body of knowledge suggesting that while coopetition might serve as a performance-enhancing entrepreneurial strategy (Ritala, 2012; Hannah and Eisenhardt, 2018), this link could be unhinged by certain environmental-level factors, like competitive intensity (Hoffmann *et al.*, 2018; Crick and Crick, 2021). These conceptual arguments were intended to unpack the relationship between coopetition and sales performance by appreciating the complexities that could impact this association (extending Crick, 2019; Czakon *et al.*, 2020). As another point, the debate between Barney (2001) and Priem and Butler (2001) stressed that authors should distinguish between resources and capabilities, as entrepreneurs utilise their tangible and intangible assets in different respects in the day-to-day and long-term operations. This current study noted this theoretical development in its employment of the resource-based view to examine the dynamics of behavioural forms of coopetition (as per Dana and Winstone, 2008; Bouncken and Kraus, 2013; reference withheld; Felzensztein *et al.*, 2019).

Integrating resource-based theory and the relational view

Although the resource-based view can help explain how sharing resources and capabilities with certain competitors can positively impact company performance (Ritala, 2012; Hannah and Eisenhardt, 2018), it does not sufficiently consider the relational factors that underpin these entrepreneurial strategies (as noted by Crick and Crick, 2020). In fact, recently, Barney (2018) recommended that resource-based theory should

encapsulate a stakeholder perspective to show how organisations must foster effective networks (like with customers, supply chain partners, and competitors) to survive and grow within their markets. This is in-keeping with the themes of coopetition, whereby, decision-makers need to have strong connections with their competitors to not only yield higher-levels of performance, but also, to avoid certain tensions (such as conflict, power imbalances, and opportunistic behaviours) that might emerge if these partnerships are poorly-managed (following Tidstrom, 2009; Bouncken *et al.*, 2018).

Accordingly, certain research has infused resource-based theory with the relational view to explore the cooperative and competitive facets of the coopetition construct (see Lavie, 2006; Crick and Crick, 2020). That is, the relational view highlights that a pertinent driver of company performance is having high-quality relationships with a range of stakeholders, not least of which competitors (Dyer and Singh, 1998; Dyer *et al.*, 2018). For instance, Crick and Crick (2020) infused these theoretical lens to demonstrate how several businesses (throughout the world) have been cooperating with their competitors to cope with the health and economic-related shocks associated with the COVID-19 pandemic. They noted that on its own, the resource-based view tells an incomplete story regarding coopetition activities, which is enhanced by drawing upon the relational view. Consequently, this current investigation follows this approach to unpack the complexities of the coopetition – sales performance link. This includes how inter-firm conflict could be an underlying mechanism that could distort this relationship (see Ritala and Hurmelinna-Laukkanen, 2013; Raza-Ullah *et al.*, 2014). These theoretical viewpoints shed light on why it is important that owner-managers should collaborate with “complementary” rivals, in terms of those that they can trust to achieve mutually-beneficial outcomes (Czako *et al.*, 2020; Crick and Crick, 2021).

Sports entrepreneurship and coopetition

There have been various conceptualisations and operationalisations of the coopetition construct (see Bengtsson and Kock, 2014; Hoffmann *et al.*, 2018). That said, a seemingly agreed point is that coopetition is the interplay between cooperation and competition, whereby, decision-makers share resources and

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capabilities with their competitors for mutually-beneficial outcomes, not least of which higher-levels of sales performance (Ritala, 2012; Hannah and Eisenhardt, 2018; reference withheld). As noted earlier, this current study contributes to the wider entrepreneurship literature by infusing resource-based theory and the relational view (as per Lavie, 2006; Crick and Crick, 2020) to evaluate the relationship between coopetition and sales performance under the moderating roles of inter-firm conflict and competitive intensity. This theoretical contribution is tested in the capacity of non-mainstream sporting organisations in New Zealand to contextualise the extent to which these firm-level and environmental-level competitive forces might impact this association. Sports entrepreneurship is a domain that has been applied to various settings and strategies around the globe (see Ratten and Ratten, 2011; Vos and Scheerder, 2014; Ratten, 2016). More importantly, the broader sports industry has been found to be active in coopetition activities (Robert *et al.*, 2009; Lorgnier and Su, 2014; Crick and Crick, 2016a; Hammerschmidt *et al.*, 2020). Henceforth, by drawing upon this body of knowledge, the sports entrepreneurship field was effective for examining these under-researched issues involving coopetition. Yet, for clarity, it is argued that the non-mainstream context was used to develop rich insights into the complexities of the coopetition paradox, for which broader implications are made towards entrepreneurs operating in more mainstream settings – inside and outside of sport.

Conceptual framework

Grounded in resource-based theory and the relational view (Lavie, 2006; Crick and Crick, 2020), the study’s conceptual framework (Figure 1) contained three research hypotheses and two main control paths. As mentioned earlier, sales performance was chosen as the outcome variable, as many organisations (including those associated with sport) must yield sales revenues from their customers/club members to achieve their objectives (Lorgnier and Su, 2014; Wemmer *et al.*, 2016). First, it was expected that coopetition has a positive relationship with sales performance (Ritala, 2012; Felzensztein *et al.*, 2014; Hannah and Eisenhardt, 2018; Estrada and Dong, 2020). Second, the link between coopetition and sales performance was anticipated to be negatively moderated by inter-firm conflict (Raza-Ullah *et al.*, 2014; Bouncken *et al.*, 2018; Hoffmann *et*

al., 2018). Third, it was proposed that competitive intensity negatively moderates the coopetition – sales performance relationship (Tidstrom, 2009; Crick, 2019). Fourth, the outcome variable (sales performance) was controlled for firm size and firm age, as additional factors that might explain its variance (Westhead *et al.*, 2001; Jaskiewicz *et al.*, 2015; Nason and Wiklund, 2018). Fourth, to test these interaction effects, several procedural controls were included within the model (Boso *et al.*, 2013; Crick and Crick, 2021).

[Insert Figure 1 about here]

Coopetition and sales performance

Coopetition strategies are comprised of cooperative and competitive behaviours (Bengtsson and Kock, 2000; Bengtsson and Johansson, 2014; Raza-Ullah *et al.*, 2014; Granata *et al.*, 2018). This means that organisations must carefully manage the paradoxical forces of cooperativeness and competitiveness to yield higher-levels of sales performance (Czako *et al.*, 2020). By collaborating with their rivals, decision-makers can understand issues surrounding their competitive business environments by learning about the wants and needs of customers (Thomas *et al.*, 2013; Bouncken *et al.*, 2018; Kraus *et al.*, 2019). Furthermore, coopetition allows owner-managers to access assets, such as equipment and knowledge needed to effectively operate their businesses, but that could be very costly to purchase, or to help fund joint promotions among partners (Dana and Winstone, 2008; Felzensztein *et al.*, 2014; Wemmer *et al.*, 2016; Estrada and Dong, 2020). For example, this might involve borrowing equipment needed periodically from a competitor, rather than buying it themselves (Dana *et al.*, 2013). In doing so, firms can increase their sales, foster unique selling points, and conserve costs (Bernal *et al.*, 2002; Hoffmann *et al.*, 2018). As an illustration, Felzensztein *et al.* (2018) found that in regional clusters, entrepreneurs could use coopetition to create superior value for their customers, develop efficient supply chains, and save money by running joint promotions.

Likewise, Felzensztein *et al.* (2010) explored the driving forces behind inter-firm cooperation (a very similar notion to coopetition) in the context of the Scottish and Chilean salmon fishing sectors. They developed a conceptual model that signifies that geographic proximity manifests into informal social networks (also driven

by the regional culture/environment), which in turn, leads to entrepreneurs engaging in certain forms of inter-firm cooperation³. Thus, it stands to reason that if entrepreneurs have access to effective social capital, they can collaborate with “complementary” rivals that assist them to yield higher-levels of sales performance. Collectively, these are advantages that span from working with industry rivals that would not exist under individualistic business models (Bengtsson and Johansson, 2014; Kraus *et al.*, 2019). Consequently, consistent with resource-based theory and the relational view, coopetition can provide organisations with new resources, capabilities, and opportunities (including social capital) that might yield higher-levels of sales performance (Bengtsson and Kock, 2014; Hannah and Eisenhardt, 2018; Felzensztein *et al.*, 2019). For clarity, these new tangible and intangible assets can overcome the drawbacks of an individualistic business model, with a likely consequence being increased sales performance (Ritala, 2012; reference withheld). This logic is underpinned by the key assumption that firms cooperate with “complementary” rivals (Czako *et al.*, 2020). Hence, it is expected that:

H1. A positive relationship exists between coopetition and sales performance.

The moderating role of inter-firm conflict

Under the relational view (and the stakeholder lens associated with resource-based theory), the quality of the relationships between the rivals engaging in coopetition is highly important (Lavie, 2006; Barney, 2018; Dyer *et al.*, 2018). If trust does not exist, there is unlikely to be a great deal of resource and capability-sharing activities (Tidstrom, 2009; Kraus *et al.*, 2019). Specifically, if there are tensions involved in coopetition strategies, entrepreneurs might feel uncomfortable sharing their assets with their competitors due to potential risks, like losing intellectual property (Ritala and Hurmelinna-Laukkanen, 2013). With inter-firm conflict (the extent to which businesses experience tensions with their industry rivals), there could be a lack of efficiency

³ The notion of social capital’s prevalence among firms within close geographic proximity is observed across various sectors like restaurants (Chaudhry and Crick, 2004), accommodation (Crick and Crick, 2016b), and agriculture/fisheries (Felzensztein *et al.*, 2010).

in implementing coopetition strategies, as time and effort could be invested into resolving such conflict, when it would be more effective to focus on performance-driving activities (Bouncken and Kraus, 2013; Bouncken *et al.*, 2018). Owing to the inter-firm trust-based themes of the relational view (Dyer and Singh, 1998; Dyer *et al.*, 2018), if inter-firm conflict exists, the lack of trust between these competitors might unbalance the coopetition paradox (Raza-Ullah *et al.*, 2014). This is because decision-makers might struggle to differentiate the paradoxical forces of cooperativeness and competitiveness and lose sales through working with untrustworthy and opportunistic industry rivals (Czako *et al.*, 2020). For example, Crick *et al.* (2020) indicated that if entrepreneurs in the New Zealand wine sector cooperate with rivals that they have tensions with, they could experience harmful performance outcomes (including reduced sales) because they have shared valuable resources and capabilities with untrustworthy rivals. Therefore, inter-firm conflict could create confusion about whether coopetition is a performance-driving entrepreneurial strategy (Ritala and Hurmelinna-Laukkanen, 2013; Hoffmann *et al.*, 2018). Put another way, inter-firm conflict is a firm-level competitive force pertaining to entrepreneurs cooperating with tension-prone businesses that can reduce the performance outcomes of these activities (extending Tidstrom, 2009; reference withheld). Consequently, it follows that:

H2. Inter-firm conflict negatively moderates the relationship between coopetition and sales performance.

The moderating role of competitive intensity

As already mentioned, key market-level conditions have been incorporated into resource-based theory (with applications under the relational view) to evaluate the performance outcomes of organisational resources and capabilities (Barney, 2001; Priem and Butler, 2001; Crick and Crick, 2021). The competitive business environment is an important element of the coopetition literature, as it emphasises how rivalrous behaviours can potentially affect the coopetition paradox (Ritala, 2012; Bengtsson and Johansson, 2014). Following the themes of resource-based theory and the relational view, the competitive business environment can

moderate the coopetition - sales performance relationship in two capacities (reference withheld). One school-of-thought is that as more competitors enter a market, decision-makers can be selective of which rivals that they can share resources and capabilities with and not least within business clusters (Felzensztein and Deans, 2013; Felzensztein *et al.*, 2018; Granata *et al.*, 2018). This is consistent with Felzensztein *et al.*'s (2010) study regarding how inter-firm cooperation (again, a very similar activity to coopetition) is driven by companies being able to acquire their rivals' tangible and intangible assets. Another school-of-thought is that as markets become more competitive, owner-managers might struggle to differentiate the paradoxical forces of cooperativeness and competitiveness (Tidstrom, 2009).

Indeed, if there is a high-degree of competitive intensity, this environmental-level force could create more tensions between industry rivals (like conflict, power imbalances, and opportunistic behaviours), which makes it difficult for decision-makers to know which rivals they can trust (Bouncken and Kraus, 2013; Bouncken *et al.*, 2018). Additionally, higher-levels of competitive intensity might yield other negative outcomes, like stolen intellectual property and diluted competitive advantages between coopetition partners (Ritala and Hurmelinna-Laukkanen, 2013). This is because the competitive business environment could de-stabilise the delicate nature of the interplay between cooperation and competition (Hoffmann *et al.*, 2018; Crick and Crick, 2021). In fact, Bouncken *et al.* (2018) noted that if entrepreneurs work with poorly-chosen industry rivals (those that could behave opportunistically for their own gains) in coopetition partnerships, they could lose valuable resources and capabilities, be less innovative, and not be as competent at producing new goods and services. This suggests that higher-degrees of rivalry (through competitive intensity as a market-level force) could prevent entrepreneurs from utilising coopetition strategies to improve their sales performance if not effectively managed (Crick, 2019). For these reasons, it anticipated that:

H3. Competitive intensity negatively moderates the relationship between coopetition and sales performance.

Control paths

The outcome variable (sales performance) was controlled for firm size and firm age. Specifically, larger organisations, with a greater volume of resources and capabilities, have a stronger chance of out-performing smaller rivals within their markets (Barney, 1991). Thus, firm size was used as a control variable. Additionally, there are other ways that businesses can improve their performance other than through their size (Dyer and Singh, 1998; Kellermanns *et al.*, 2016; Nason and Wiklund, 2018). For instance, older firms can utilise their market experience and heritage, such as via their networks, to enhance sales performance compared to newer competitors (Westhead *et al.*, 2001; Jaskiewicz *et al.*, 2015). Consequently, firm age featured as a control path. The adopted methodology follows in the next section.

Methodology

Empirical context

An ideal empirical context for studying coopetition is one that is highly-cooperative and highly-competitive (Bengtsson and Kock, 2014; Granata *et al.*, 2018). Likewise, coopetition-based research is best-conducted in a setting where firms can access key resources and capabilities from their rivals, including being located within a close geographic proximity (Felzensztein and Deans, 2013; reference withheld; Felzensztein *et al.*, 2018). As certain sporting organisations are often active in coopetition strategies, not least of which being able share tangible and intangible assets with their rivals (Robert *et al.*, 2009; Lorgnier and Su, 2014), the research team worked with an International Taekwon-Do Federation (ITF) governing body in New Zealand, with over 3,500 members and 262 instructors (the sampling frame). Following Felzensztein *et al.*'s (2010) arguments, certain forms of coopetition are more likely to be implemented in sectors that exhibit social connections and informal relationships. These dynamics were anticipated to be prominent within a New Zealand sporting context (see Crick and Crick, 2016a), influencing the research team's decision to utilise this population of interest. Taekwon-Do is a martial art that was established in 1955 by the late General Choi Hong Hi (IX Degree Black Belt) to teach hand-to-hand combat to soldiers in the South Korean military (Ahn

et al., 2009). However, since its formation, Taekwon-Do divided into various break-away organisations due to the ongoing political volatility between North Korea and South Korea (see Moenig and Kim, 2017). As previously alluded to, since the sport exhibits different rules among organisations with no single (unified) governing body and does not have the same following as “mainstream” sports, like football (as per Downward and Rasciute, 2010), it is termed “non-mainstream” in this current study. This is despite one style of Taekwon-Do featuring in the Olympics, but not the form of the sport studied in this current investigation (see Crick and Crick, 2016a). Nevertheless, consistent with earlier sports research, clubs are competitive due to the political climate affecting sport, as well as the sheer volume of substitute and “complementary” rivals within the sector (see Ratten, 2019).

Generalisability

The cooperative and competitive dynamics of the empirical context allowed the research team to explore the complexities of the coopetition – sales performance relationship (following Bengtsson and Kock, 2014; Felzensztein *et al.*, 2018). Additionally, the use of empirical data from non-mainstream sporting clubs (affiliated to a non-profit governing body) illustrated an alternative setting where firms collaborate with their competitors (building upon Lorgnier and Su, 2014). As noted by Wemmer *et al.* (2016), the non-profit sector in sport is multi-faceted, for which there can be overlaps between organisations that have for-profit, vis-à-vis, non-profit business models. They argued that certain organisations have the authority to turn profits, but are required to follow certain protocols set by a non-profit governing body. Such processes were present during this current study, whereby for clarity, the individual Taekwon-Do clubs were profit-making businesses; however, the overall governing body was non-profit-oriented. In addition, earlier work has sampled sporting clubs to evaluate theoretical issues and make inferences towards mainstream organisations (as noted by Ratten, 2016). Consequently, by examining the coopetition – sales performance link under the moderating roles of inter-firm conflict and competitive intensity in the sporting context, this study has potential wider generalisability.

Key informants

Scholars have predominately sampled owner-managers to investigate coopetition (Tidstrom, 2009; Raza-Ullah *et al.*, 2014; Hoffmann *et al.*, 2018). Owner-managers are normally the individuals that decide to collaborate with their competitors, since they have the authority to share critical resources and capabilities (Bengtsson and Kock, 2000; Felzensztein and Deans, 2013; Hannah and Eisenhardt, 2018). Taekwon-Do instructors are the most senior officials in their clubs and are typically the owners (Ahn *et al.*, 2009; Crick and Crick, 2016a; Moenig and Kim, 2017). This meant that Taekwon-Do instructors had the expertise to answer the questions about all constructs within the conceptual framework, not least of which sales performance. As such, these individuals featured as the key informants. As mentioned later, an informant quality scale (adapted from Boso *et al.*, 2013) was used to evaluate the knowledge of the participants, revealing they were well-suited to the themes of this current investigation.

Field interviews

To shape the operationalisations in the survey, 25 semi-structured interviews were conducted with senior members of the governing body and club instructors (as per Katsikeas *et al.*, 2006). Specifically, these field interviews were used to adapt the established measurement scales (as outlined later, that typically featured sectors other than sports) to the chosen sporting context, so that the key informants could answer “relevant” questions. For instance, the field interviews explored whether sales performance is an acceptable measure of success among sporting clubs, for which no problems were identified (reinforcing Lorgnier and Su, 2014; Wemmer *et al.*, 2016). Indeed, the importance of sales revenue from the volume of students (in effect, customers in a commercial business sense) featured in the field interviews to demonstrate the need to re-invest money into the club over and above covering operating costs, like hiring the use of facilities for training. Moreover, another illustration involved the ways that coopetition is implemented, such as sharing equipment among clubs, senior instructors providing guest seminars, information sharing for less experienced instructors, etc. These interviews lasted approximately sixty minutes. The research team analysed this

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qualitative data using the constant comparison technique, whereby, re-occurring themes were utilised to identify a point of theoretical saturation (Suddaby, 2006). Moreover, manual coding allowed the researchers to get “close” to the data; hence, concentrate on the most relevant arguments (see Miles and Huberman, 1994).

Electronic survey

The substantive research method used within this investigation was an electronic survey (through Qualtrics). Once the survey was designed, it was pre-tested with a sample of knowledgeable academics ($n = 10$) and practitioners ($n = 20$) who could comment on the constructs that were being measured (Dana and Dana, 2005). The pre-testing stage did not reveal any concerns. Then, a pilot study was undertaken ($n = 31$), whereby, the data were assessed for their descriptive statistics and scale reliabilities (Birley and Westhead, 1994). Since the data were of a high-quality, no changes were made to the survey. Next, the core study was launched ($n = 120$). As the measures that appeared in the pilot study were identical to those in the core study, the two datasets were merged to yield the final sample (Crick *et al.*, 2020). The 151 observations (from a population of 262 instructors) accounted for an acceptable response rate (57.63%) to test the model under investigation. This was attributed to the survey being relatively short and interactive (Newby *et al.*, 2003). The data were checked for early, vis-à-vis, late response bias by conducting *t*-tests for each construct (Boso *et al.*, 2013), revealing non-significant differences.

Operationalisations

The constructs within the conceptual framework were measured as follows⁴ (Appendix 1 displays a full-list of the multi-item measurement scales). First, coopetition was operationalised using a seven-point Likert scale, with three items, ranging from: 1 = very strongly disagree to 7 = very strongly agree (adapted from Bouncken

⁴ The following construct abbreviations were used – coopetition (COOP), sales performance (SALES), competitive intensity (COMP), inter-firm conflict (CONF), firm size (SIZE), firm age (AGE), coopetition-oriented mind-set (COM), and informant quality (INQ).

and Kraus, 2013; Bouncken *et al.*, 2018). The coopetition construct has been measured in various ways, such as using weak proxies or single-indicators (see Ritala, 2012; Felzensztein *et al.*, 2014; Estrada and Dong, 2020). The adopted scale was chosen, since it captures the propensity of coopetition activities via the extent to which organisations cooperate with their competitors. Second, sales performance was operationalised on a nine-point interval scale, with three items, ranging from: 1 = extremely dissatisfied to 9 = extremely satisfied (adapted from Morgan *et al.*, 2009). Third, competitive intensity was measured on a seven-point Likert scale, with three items, ranging from: 1 = very strongly disagree to 7 = very strongly agree (adapted from Slater *et al.*, 2006). Fourth, inter-firm conflict was captured on a seven-point Likert scale, with five items, ranging from: 1 = very strongly disagree to 7 = very strongly agree (adapted from Xie *et al.*, 1998). Fifth, firm size was measured via the total number of Taekwon-Do instructors/students (adapted from Crick and Crick, 2016a). Sixth, firm age was captured by the number of years that the sporting clubs (as “businesses”) had been operating (following Westhead *et al.*, 2001). Seventh, to test for endogeneity bias (as discussed later), the instrumental variable was a coopetition-oriented mind-set, which was measured using a seven-point Likert scale, with six items, ranging from: 1 = very strongly disagree to 7 = very strongly agree (adapted from Crick and Crick, 2019; reference withheld). Eighth, the survey ended with an informant quality measure, which involved a seven-point Likert scale, with five items, ranging from: 1 = very strongly disagree to 7 = very strongly agree (adapted from Boso *et al.*, 2013).

Data analysis

The following data analysis techniques were employed in this study. First, using SPSS 23, the descriptive statistics of the initial measures were analysed, with a focus on their variances (Chandler and Lyon, 2001). This showed that a good mixture of sports clubs had participated in this study (Table 1). As mentioned earlier, all the Taekwon-Do clubs were permitted to turn profits, but were affiliated to a non-profit governing body. Yet, for clarity, the sampled organisations were private enterprises.

[Insert Table 1 about here]

Second, turning to Table 2, through SPSS 23, an exploratory factor analysis was conducted, with a principal components analysis extraction and a varimax rotation (Poutziouris, 2003). The Kaiser-Meyer-Olkin (KMO) test of sampling adequacy was employed (0.78), alongside Bartlett's test of sphericity ($\chi^2 = 4,141.72$; $df = 325$; $Sig. = 0.00$), while explaining a relatively high-degree of variance (79.08%).

[Insert Table 2 about here]

Third, as shown in Table 3, using LISREL 9.30, a confirmatory factor analysis was “run” to delete items if they had low standardised factor loadings, high standardised error variances, non-significant t -values, and issues associated with the modification indices (Adomako *et al.*, 2016). Furthermore, after the scale purification stage, the model fit indices were within the minimum benchmarks ($\chi^2 = 195.13$; $df = 126$; $Sig. = 0.00$; $\chi^2/df = 1.55$; RMSEA = 0.06; CFI = 0.97; IFI = 0.97; NNFI = 0.96; GFI = 0.89; SRMR = 0.04).

[Insert Table 3 about here]

Fourth, after analysing the bivariate correlations and descriptive statistics of the latent variables (via SPSS 23), the hypothesised and control paths were tested through a six-step hierarchical regression analysis (Morgan *et al.*, 2009). The research team used “residual-centering” to transform the interaction effects to reduce multi-collinearity errors (Tiwana, 2008). The research hypotheses and control paths were evaluated during the final stage of the analysis, since all independent variables were “nested” within the model (following Wiklund and Shepherd, 2005; Covin *et al.*, 2006). Furthermore, the model fit summaries were recorded, alongside the change statistics – to supplement the unstandardised regression coefficients (β), the t -values, and their significances (as per Crick *et al.*, 2020).

Reliability and validity

Reliability was assessed through the Cronbach's alpha coefficients (α) for the multi-item scales before and after they were purified - all exhibiting values above 0.70 (Knight, 1997; Dai *et al.*, 2014). Face validity was checked through pre-testing the survey with a sample of knowledgeable academics ($n = 10$) and practitioners

($n = 20$), who indicated that it was understandable and covered appropriate theoretical and practical issues (Dana and Dana, 2005). Content validity was assured via employing established operationalisations (Marvel and Lumpkin, 2007), as well as conducting the 25 field interviews to ensure that the measurement scales were correctly adapted to the population of interest (Katsikeas *et al.*, 2006). Convergent validity was evaluated through the final scales having composite reliabilities (CRs) that were greater than 0.60 and average variance extracted values (AVEs) exceeding 0.50 (Schillo *et al.*, 2016). Discriminant validity was tested by examining the squared phi matrix correlations (accessed from LISREL 9.30) and comparing them against the AVEs for each construct. As the highest squared phi matrix correlation (0.26) was less than the lowest AVE (0.69), discriminant validity is likely to exist (Morgan *et al.*, 2015). Table 4 displays the final multi-item scale reliabilities.

[Insert Table 4 about here]

Common method variance

Common method variance was evaluated through designing the survey in a way that made it as short and interactive as possible for the respondents to minimise their fatigue (Podsakoff *et al.*, 2003). Once the final measures had been established, the marker variable technique was utilised via SPSS 23 as follows (see McGee and Peterson, 2019). First, a bivariate correlation matrix was produced, containing all the constructs within the conceptual framework. Second, a partial correlation matrix was created, containing the same latent variables, but controlling for the informant quality scale (the marker variable – adapted from Boso *et al.*, 2013). Third, the differences between the bivariate and partial correlation matrices were averaged. As the mean correlation was very small ($r = 0.00$), the data were unlikely to be biased by a common method factor (Lindell and Whitney, 2001).

Endogeneity bias

To test for endogeneity bias, the research team undertook the following procedures. First, the conceptual framework was refined to test the coopetition - sales performance relationship (controlling for firm size and

firm age). Second, a variable that was conceptually associated with coopetition, but not sales performance was selected – a coopetition-oriented mind-set (Estrada and Dong, 2020). Third, via LISREL 9.30, two structural models were “run” - one assuming endogeneity did not exist and another where the instrumental variable was added (Crick *et al.*, 2020). Fourth, as the $\Delta\chi^2(15.40)$, relative to the $\Delta df(12)$, was non-significant (less than the critical value of 21.03), the statistical data were deemed to be unaffected by endogeneity bias (Semadeni *et al.*, 2014). The study’s results follow in the next section.

Results

The bivariate correlations (and their descriptive statistics) revealed the underlying relationships within the statistical data (Table 5). During the hierarchical regression analysis, coopetition had a positive and significant relationship with sales performance ($\beta = 0.48$; $t = 5.20$), supporting H1. Turning to the moderators, inter-firm conflict negatively moderated the coopetition - sales performance link ($\beta = -0.08$; $t = -2.14$), supporting H2. Surprisingly, competitive intensity yielded a positive interaction effect in the relationship between coopetition and sales performance ($\beta = 0.11$; $t = 2.30$), offering a counter-intuitive viewpoint to H3. Moreover, mixed support existed for the two main control paths. Specifically, there was a positive and significant link for firm age ($\beta = 0.23$; $t = 3.28$), but a positive and non-significant association for firm size ($\beta = 0.14$; $t = 0.78$). Additionally, as shown in Table 6, in the final (nested) stage of the hierarchical regression analysis, following the adjusted R^2 , a relatively high amount of variance was explained (23%), alongside significant change statistics ($\Delta R^2 = 0.03$; $\Delta F = 5.28$). These results are discussed in the next section.

[Insert Tables 5 and 6 about here]

Discussion

Prior research has found that by collaborating with competitors, under-resourced entrepreneurs can learn how to better-understand their competitive business environments, as well as experiencing the advantages from acquiring new resources, capabilities, and opportunities that would not exist under individualistic business models (Bouncken and Kraus, 2013; Hannah and Eisenhardt, 2018; Kraus *et al.*, 2019). Indeed,

such conceptualisations have infused into the sports industry, whereby, sporting organisations (clubs) sometimes share resources and capabilities with industry rivals to obtain mutually-beneficial outcomes, including improved sales performance (Robert *et al.*, 2009; Lorgnier and Su, 2014; Hammerschmidt *et al.*, 2020). There have been recent calls for research to investigate the complexities of this association (Hoffmann *et al.*, 2018; Czakon *et al.*, 2020). More specifically, an under-researched area surrounds the coopetition paradox to evaluate how certain firm-level and environmental-level competitive forces could de-stabilise the delicate nature of the interplay between cooperation and competition (Bouncken *et al.*, 2018; Crick, 2019). As such, guided by resource-based theory and the relational view (Barney, 1991; Lavie, 2006; Dyer *et al.*, 2018), this current investigation sought to examine how inter-firm conflict and competitive intensity could negatively moderate the relationship between coopetition and sales performance in non-mainstream sports clubs. This context was important, since a large proportion of clubs are under-funded (Ratten and Ratten, 2011), despite being the life-blood of many communities (Ratten, 2010; Trussell, 2016). Thus, it offered rich contextual insights to supplement this theoretical contribution.

The results indicated that coopetition has a positive link with sales performance – supporting a variety of studies that have explored the performance-driving benefits of behavioural forms of coopetition (see Ritala, 2012; reference withheld; Felzensztein *et al.*, 2018; Estrada and Dong, 2020). Inter-firm conflict was found to negatively moderate this link (Figure 2), which could be attributed to the tense relations between competing businesses making it difficult for decision-makers to know which rivals that they can trust and share resources and capabilities with (Raza-Ullah *et al.*, 2014; Czakon *et al.*, 2020). Earlier studies have suggested that if coopetition occurs between competitors that are untrustworthy, there can be conflict, power imbalances, and opportunistic behaviours that damage the quality of these coopetition-based partnerships (Tidstrom, 2009; Bouncken and Kraus, 2013). Inter-firm conflict, coupled with coopetition, can lead to firms losing intellectual property and diluting their competitive advantages (Ritala and Hurmelinna-Laukkanen, 2013; Crick *et al.*, 2020). Within under-resourced sports clubs, the field interviews provided an illustration, whereby, conflict might arise from losing members to rival clubs, leading to decreased sales. For example, following certain

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forms of collaboration, members may choose to attend training sessions with an instructor in a rival club with whom have they developed an affinity. In short, new evidence has emerged on a firm-level competitive force that can distort the coopetition paradox (responding to Hoffmann *et al.*, 2018; Crick, 2019). As such, coopetition can enhance firms' resources and capabilities - consistent with the stakeholder perspective of the resource-based view (Barney, 2018). However, linking with the relational view (Dyer and Singh, 1998; Dyer *et al.*, 2018), there can be harmful effects on sales performance if companies collaborate with industry rivals where there are conflict-based tensions (Tidstrom, 2009; Bouncken *et al.*, 2018; Crick and Crick, 2021).

[Insert Figure 2 about here]

Another interesting contribution was that instead of negatively affecting the link between coopetition and sales performance, competitive intensity had a positive moderation effect (Figure 3). While earlier studies have noted that competitive intensity could moderate this relationship in different respects, in highly rivalrous business environments, certain research suggests that such forces may unhinge the coopetition paradox, leading to decision-makers collaborating with rivals that are less trustworthy and yield coopetition-based tensions (following Tidstrom, 2009; Bouncken *et al.*, 2018; reference withheld). However, since there was a positive interaction effect (under low-levels and high-levels of competitive intensity), the competitive business environment might stabilise the coopetition paradox. If there are many competitors within a market, businesses might be able to be more selective of which rivals that they collaborate with and engage in more effective forms of coopetition (Felzensztein and Deans, 2013; Granata *et al.*, 2018; Felzensztein *et al.*, 2019). Owner-managers might find that it is more important to collaborate with competitors across "complementary" product-markets, so that they can obtain mutually-beneficial outcomes, including improved sales performance. One illustration that originated from the field interviews involved cooperation with geographically-distant clubs in certain cases, like senior instructors providing seminars (knowledge sharing), since students/members would not move to those other clubs as they were too far away. In contrast, another

example from the field interviews established it was usual to borrow equipment from local clubs on a good-will basis.

[Insert Figure 3 about here]

This somewhat counter-intuitive result partially addresses a debate pertaining to how the competitive business environment can affect the performance outcomes of cooperation strategies in different ways. This is because proximity may feature as an important factor, such as earlier research in regional clusters where firms are geographically-close to one another. For instance, the nature of competitive intensity is sometimes influenced by a degree of mutual good-will, since each partner benefits as long as all rivals reciprocate, such as via sharing equipment, etc. (Felzensztein and Deans, 2013; Felzensztein *et al.*, 2019; Crick *et al.*, 2020). Additionally, this finding builds upon the importance of the competitive business environment being an integral aspect of resource-based theory and the relational view (Barney, 2001; Priem and Butler, 2001; Lavie, 2006; Dyer *et al.*, 2018). That is, it highlights the need for strategic flexibility in decision-making. In this current study, owner-managers of sporting clubs must be careful when and with whom to collaborate. Indeed, the positive interaction effect reinforces Felzensztein *et al.*'s (2010) arguments about as more firms are available to network with, they can benefit from having access to the prior-mentioned new resources, capabilities, and opportunities.

Regarding the control paths, firm size had a positive, but non-significant relationship with sales performance. Under resource-based theory, a key assumption is that larger firms, typically with greater resources and capabilities, are likely to obtain higher-levels of performance (like sales) than smaller firms, with fewer resources and capabilities (Barney, 1991). However, this result suggests that firm size is not necessarily an important driver of sales performance. One possible explanation is that smaller-sized businesses have the flexibility and responsiveness to execute certain strategies that larger counterparts cannot achieve (Jones and Rowley, 2011). Moreover, in an overall sense, no clubs were very large, unlike certain companies investigated in earlier entrepreneurial research. A positive and significant relationship existed between firm

age and sales performance, supporting extensions to resource-based theory and the relational view, namely, older businesses can use their market experience and heritage to out-perform younger competitors (Westhead *et al.*, 2001; Jaskiewicz *et al.*, 2015). Indeed, the field interviews suggested that senior instructors operated some of the more established clubs (or those that had trained under senior instructors), so a degree of social capital existed. As another discussion point, by using these two theoretical perspectives (resource-based theory and the relational view), this current study explored the cooperative and competitive facets of coopetition activities (Lavie, 2006; Dyer *et al.*, 2018; Crick, 2019). Lastly, this investigation has extended the sports entrepreneurship literature by evaluating the circumstances where coopetition is (and is not) a performance-enhancing entrepreneurial strategy (building upon Robert *et al.*, 2009; Wemmer *et al.*, 2016; Hammerschmidt *et al.*, 2020). This includes exploring coopetition as a set of innovative, proactive, and risk-taking behaviours in a sporting arena (linking with Ratten, 2012). Several conclusions follow in the next section.

Conclusions

Summary

Under resource-based theory and the relational view, the objective of this study was to explore certain firm level and environmental-level competitive forces affecting the relationship between coopetition and sales performance. The first conclusion is that coopetition has a positive relationship with sales performance. The second conclusion is that inter-firm conflict negatively moderates the coopetition - sales performance relationship. The third conclusion is that somewhat contrary to expectations, competitive intensity positively moderates the relationship between coopetition and sales performance. However, geographic proximity may feature as important in this relationship. The fourth conclusion is that by integrating resource-based theory with the relational view, academics can better-understand the competitive and cooperative aspects of the coopetition construct. The fifth conclusion is that the sampled non-mainstream sporting clubs generated unique “contextual” insights into the implementation of coopetition strategies.

Practitioner implications

In addition to its theoretical contributions, this study offers a range of important implications for under-resourced practitioners, especially those involved in sports entrepreneurship. First, if entrepreneurs collaborate with their competitors, they can use such strategies to acquire new resources, capabilities, and opportunities that would not be available to them if they were to compete under an individualistic business model. Second, decision-makers should be careful when collaborating with their rivals and build trust, since if they work with untrustworthy competitors, there can be negative effects on their sales performance. It would be most advantageous to collaborate with trustworthy competitors, or at the very least, be able to leave such partnerships if they experience certain tensions (like conflict, power imbalances, and opportunistic behaviours). Third, a factor that could enhance the performance outcomes of coopetition is the degree of competitiveness within a market. As such, if there are many rivals within a market, decision-makers should work with those (via sharing resources and capabilities) that are most likely to yield mutually beneficial outcomes, including improving sales performance. In highly-competitive sectors, there might be opportunities to avoid cooperating with untrustworthy rivals and those that could create coopetition-based tensions. This includes the opportunity to share tangible and intangible assets with competitors targeting “complementary” product-markets. Fourth, from a societal-level and policy angle, sporting governing bodies may wish to encourage more coopetition within their organisations, since it can help their members (potentially being private enterprises) to improve their sales performance. Indeed, they may go further and actively help facilitate network relationships based on knowledge of respective firms’ activities; hence, broker complementary and mutually-beneficial partnerships.

Limitations and avenues for future research

Although this study has contributed to the extant literature, there are certain limitations that can be addressed in future research. First, this study primarily utilised survey data from a sample of small (non-mainstream) sports clubs in a single-country (namely, Taekwon-Do clubs in New Zealand). Although this empirical context

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was highly-suitable for exploring the coopetition construct, it was a rather specific setting. Therefore, in future research, it would be interesting to sample a range of empirical contexts to make inferences into other populations of interest. This could include replicating this study to compare the differences between mainstream and non-mainstream sports. Second, since the substantive data were from a single-source survey (following the initial field interviews for measurement development purposes), future research should attempt to access multi-source data. This could be via accessing archival sources to measure sales performance, although that may be difficult for confidentiality reasons. Equally, in-depth qualitative data could explain “how” and “why” the statistical results existed assuming researchers can facilitate access and especially if longitudinal data is collected, potentially via a case study based approach. Third, despite the sample size accounting for a respectable response rate (57.63%), it was still relatively small ($n = 151$). Future research should collect larger volumes of data to yield generalisable results. In closing, these limitations do not pose serious concerns, but instead, present a selection of interesting directions for future research - not least in the sports entrepreneurship context.

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Figure 1. Conceptual framework

Figure 2. Moderating effects from inter-firm conflict

Figure 3. Moderating effects from competitive intensity

Table 1. Characteristics of the final sample

Characteristics	Mean	Standard deviation	Minimum	Maximum
Years training in Taekwon-Do	21.54	9.02	2.30	65.00
Years as a Taekwon-Do instructor	12.38	7.73	0.00	39.30
Number of Taekwon-Do students	70.01	42.31	3.00	300.00
Number of Taekwon-Do instructors	5.27	4.86	1.00	59.00
Age of the Taekwon-Do clubs (years)	31.67	7.63	9.00	47.00

Table 2. Exploratory factor analysis model

Items	Components					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
COM_1	0.82	0.04	-0.27	0.05	-0.24	0.01
COM_2	0.85	0.08	-0.20	-0.01	-0.21	-0.03
COM_3	0.80	0.04	-0.21	0.10	-0.07	0.09
COM_4	0.80	-0.03	-0.20	0.00	0.11	0.04
COM_5	0.81	0.10	-0.27	0.06	-0.10	0.09
COM_6	0.70	0.08	-0.35	-0.01	-0.03	-0.03
COOP_1	0.13	0.88	-0.08	0.25	-0.10	-0.09
COOP_2	0.11	0.91	-0.08	0.16	-0.04	-0.07
COOP_3	0.14	0.96	-0.08	0.20	-0.07	-0.09
CONF_1	-0.33	-0.11	0.80	0.00	0.09	-0.05
CONF_2	-0.23	-0.09	0.89	-0.02	0.05	-0.03
CONF_3	-0.39	-0.04	0.62	-0.02	0.06	0.19
CONF_4	-0.27	-0.01	0.90	0.03	0.18	-0.02
CONF_5	-0.28	-0.06	0.88	-0.05	-0.02	-0.01
SALES_1	-0.01	0.25	0.02	0.84	0.01	0.02
SALES_2	-0.02	0.14	-0.02	0.93	0.07	-0.01
SALES_3	0.03	0.15	-0.04	0.91	0.18	0.04
COMP_1	-0.12	-0.09	0.11	0.05	0.83	0.15
COMP_2	-0.05	-0.02	0.07	0.03	0.89	0.11
COMP_3	-0.12	-0.07	0.13	-0.02	0.85	0.16
INQ_1	0.09	-0.11	-0.05	-0.06	0.25	0.82
INQ_2	0.08	-0.08	0.02	-0.02	0.19	0.93
INQ_3	0.11	-0.02	0.08	0.06	-0.01	0.87
INQ_4	-0.04	-0.03	-0.01	0.01	0.06	0.94
INQ_5	-0.08	0.01	-0.01	0.06	0.04	0.93

The items presented in a bold font represent those used to operationalise each latent variable within the six-factor solution.

Table 3. Confirmatory factor analysis model

Items	Standardised factor loadings (λ)	Standardised error variances (θ)	t-values
COM_1	0.99	0.03	12.73
COM_2	0.89	0.21	Fixed
COOP_1	1.00	0.00	Fixed
COOP_2	0.76	0.42	6.86
CONF_1	0.81	0.34	14.67
CONF_2	0.90	0.20	19.11
CONF_4	0.94	0.12	Fixed
CONF_5	0.96	0.08	23.81
SALES_1	0.80	0.37	13.12
SALES_2	0.94	0.12	Fixed
SALES_3	0.89	0.21	15.86
COMP_1	0.79	0.37	Fixed
COMP_2	0.88	0.23	10.79
COMP_3	0.81	0.34	10.34
INQ_2	0.83	0.31	Fixed
INQ_4	1.00	0.00	17.82
INQ_5	0.96	0.07	17.09
SIZE	1.00	0.00	Fixed
AGE	1.00	0.00	Fixed
The critical t-value was 1.65 (5%, one-sided).			

Table 4. Final multi-item scale reliabilities

Scales	Alpha (α)	Items (n)	CR	AVE
Coopetition	0.86	2	0.88	0.79
Inter-firm conflict	0.94	4	0.95	0.82
Competitive intensity	0.86	3	0.87	0.69
Company performance	0.90	3	0.91	0.77
Informant quality (marker variable)	0.90	3	0.91	0.87
Coopetition-oriented mind-set (instrument)	0.93	2	0.94	0.88

Table 5. Bivariate correlations and descriptive statistics

Latent variables	1.	2.	3.	4.	5.	6.
1. Coopetition	1.00					
2. Inter-firm conflict	-0.19**	1.00				
3. Competitive intensity	-0.18**	0.24***	1.00			
4. Sales performance	0.40***	-0.04	0.03	1.00		
5. Firm size	-0.02	0.05	0.02	0.05	1.00	
6. Firm age	0.13*	0.09	-0.01	0.29***	0.02	1.00
Mean	4.43	2.65	4.25	5.73	4.18	4.50
Standard deviation	1.29	1.13	0.76	1.54	4.50	1.59
Minimum	1.00	1.00	1.00	1.00	1.39	1.00
Maximum	7.00	7.00	7.00	9.00	5.74	8.00

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (one-tailed tests).

Table 6. Hierarchical regression analysis

	Step 1		Step 2		Step 3		Step 4		Step 5		Step 6	
Paths	β	t-values	β	t-values	β	t-values	β	t-values	β	t-values	β	t-values
SIZE	0.12	0.58	0.13	0.73	0.13	0.72	0.13	0.71	0.14	0.77	0.14	0.78
AGE	0.27	3.61***	0.23	3.21***	0.23	3.17***	0.23	3.19***	0.23	3.25***	0.23	3.28***
COOP			0.44	4.97***	0.44	4.87***	0.46	5.01***	0.51	5.38***	0.48	5.20***
CONF					0.01	0.13	-0.02	-0.15	0.27	1.47	0.33	1.78*
COMP							0.20	1.29	0.18	1.14	-0.27	-1.10
COOPxCONF									-0.07	-1.87*	-0.08	-2.14**
COOPxCOMP											0.11	2.30**
Model fit												
R^2	0.08		0.21		0.22		0.22		0.24		0.27	
Adjusted R^2	0.07		0.19		0.19		0.20		0.21		0.23	
Changes												
ΔR^2	0.08		0.13		0.01		0.00		0.02		0.03	
ΔF	6.70***		24.66***		0.02		1.67		3.51*		5.28**	
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed tests). The critical t-value was 1.65 (5%, one-sided, since the paths were directional).												

Appendix 1. Full-list of the multi-item scales

Coopetition

In the ITF...

- COOP_1 - ... we collaborate with competing clubs to achieve a common goal
- COOP_2 - ... an active cooperation with our competing clubs is important to members
- COOP_3 - ... we share assets with other Taekwon-Do clubs (like equipment)

Anchors: 1 = very strongly disagree to 7 = very strongly agree (adapted from Bouncken and Kraus, 2013; Bouncken *et al.*, 2018)

Sales performance

Please evaluate your ITF Taekwon-Do club's performance over the past year, relative to your objectives, as an instructor:

- SALES_1 - acquiring new students
- SALES_2 - volume of students
- SALES_3 - revenue volume growth from students

Anchors: 1 = extremely dissatisfied to 9 = extremely satisfied (adapted from Morgan *et al.*, 2009)

Competitive intensity

In our ITF Taekwon-Do club's current environment...

- COMP_1 - ... competition for student membership is cut-throat
- COMP_2 - ... anything that one club can offer, others can match readily
- COMP_3 - ... our rival clubs are relatively strong

Anchors: 1 = very strongly disagree to 7 = very strongly agree (adapted from Slater *et al.*, 2006)

Inter-firm conflict

In the ITF...

- CONF_1 - ... when members of several clubs get together, tensions frequently run high
- CONF_2 - ... members in one club dislike interacting with members from other clubs
- CONF_3 - ... protecting one's club is generally considered to be a way of life
- CONF_4 - ... there is a lot of conflict between members of different clubs
- CONF_5 - ... most members across different clubs do not get along with one another

Anchors: 1 = very strongly disagree to 7 = very strongly agree (adapted from Xie *et al.*, 1998)

Coopetition-oriented mind-set

In the ITF...

- COM_1 - ... members are cooperative across competing clubs
- COM_2 - ... members believe in assisting other clubs
- COM_3 - ... all rival clubs should cooperate with one another
- COM_4 - ... clubs should share assets (e.g., equipment) with rivals as much as possible
- COM_5 - ... it is important for members to be collaborative with rival clubs
- COM_6 - ... we have a culture that focuses on cooperating with competing clubs

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3 Anchors: 1 = very strongly disagree to 7 = very strongly agree (adapted from Crick and Crick, 2019)
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5 **Informant quality**

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7 In closing to the survey:

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 - INQ_1 - I am confident about my answers to the questions
 - INQ_2 - I am confident that my answers reflect our club's situation
 - INQ_3 - This survey deals with issues I am very knowledgeable about
 - INQ_4 - My current role qualifies me as an appropriate person to complete this survey
 - INQ_5 - I am competent to answer the above questions

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15 Anchors: 1 = very strongly disagree to 7 = very strongly agree (adapted from Boso *et al.*, 2013)
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