



The role of interorganizational citizenship behaviors in the innovation process



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ABSTRACT

This paper investigates the role of citizenship in the innovation process. While there is a large amount of research on organizational citizenship behavior (OCB), interorganizational citizenship behavior (ICB) has received less attention. This study examines a dense, localized cluster of private, public, and non-profit organizations. Seven dimensions characterize ICB during the different phases of the innovation process. These ICBs reflect 16 interorganizational practices that generate absorptive capacity. Seven of these practices occur during the ideation phase, five during the invention phase, and four during the exploitation phase. Cooperation and collaboration precede or underlie ICB. This study shows that spatial proximity is insufficient for enhancing innovation activities in industrial agglomerations and that ICB, collaboration, and cooperation are necessary. Therefore, these findings contribute to knowledge on the theory of innovation management and economic geography.

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1. Introduction

Firms innovate based on both internal and external sources (Chesbrough, Vanhaverbeke, & West, 2006; von Hippel, 1988). More specifically, these external knowledge sources include competitors (Smets, Langerak, & Tatikonda, 2016); suppliers and subcontractors (Un & Asakawa, 2015); education and research institutions (Etzkowitz, 2012); governing authorities and industry associations (Watkins, Papaioannou, Mugwagwa, & Kale, 2015); end-users (Schweisfurth & Herstatt, 2016); and non-competitive industry peer networks (Zuckerman & Sgourev, 2006).

Citizenship behaviors are discretionary behaviors that are neither directly nor explicitly included in formal agreements but promote the functioning of an organization or interorganizational unit in the aggregate (Autry, Skinner, & Lamb, 2008; Organ, 1988). The current research distinguishes organizational citizenship behavior (OCB), interorganizational citizenship behavior (ICB), and customer citizenship behavior (CCB).

OCB that is enacted by employees leads to innovation and creativity (Podsakoff, Podsakoff, MacKenzie, Maynes, & Spoelma, 2014; Xerri & Brunetto, 2013). CCB contributes to innovation purposes through

value co-creation activities (Nambisan & Baron, 2009; Langner & Seidel, 2015) and positively influences idea generation (Im, Montoya, & Workman, 2013; Langner & Seidel, 2015). Nambisan and Baron (2009) identify CCB as one of the motivations to engage in product design, testing, and product support activities. Another study reveals that customer involvement occurs throughout the entire innovation process (Schweisfurth & Herstatt, 2016).

ICB is featured in research that investigates supply chains (Autry et al., 2008; Skinner, Autry, & Lamb, 2009), teams, and projects (Braun, Ferreira, & Sydow, 2013; Ferreira, Braun, & Sydow, 2013). For example, one study finds that ICB in cross-functional teams promotes new product development and creativity (Qiu, Qualls, Bohlmann, & Rupp, 2009). Although interorganizational linkages are important sources of innovation (Dagnino, Levanti, Minà, & Picone, 2015), there are few studies on citizenship as a facilitating behavior in interorganizational contexts.

The purpose of this research is to identify interorganizational practices, which enable organizations to understand, access, and use external knowledge and information to innovate. This study builds on organizational theory and contributes to the stream of research investigating mechanisms leading to the beneficial horizontal and vertical interaction of spatially proximate organizations (Knoben, 2009). This research uses an abductive approach, utilizes ICB dimensions to analyze the innovation process, and inductively derives various interorganizational practices (Dubois & Gadde, 2002). The literature on interorganizational linkages as a source of innovation provides the basis for the research propositions. This research empirically investigates the single

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case study of a sports industry cluster based on 27 semi-structured interviews, four observations, and thirteen secondary data documents. The next sections present the empirical context, research design, data collection, and data analysis procedures. The following sections include the results, discussion, suggestions for future research, and reflections on limitations.

2. Theoretical background

The literature on spatial clustering—a dense concentration of organizations and firms in a geographically denominated area—and its impact on innovations is vast. A variety of academic disciplines have an interest in the origin and development of economic agglomerations (i.e., clusters) or attempt to explain the advantages of clustered organizations versus isolated ones (Knoben, 2009; Malmberg & Maskell, 2001). The field of economic geography provides the major body of research concerning clusters, in which there are two major schools of thought. The first school of thought posits that agglomeration benefits for clustered organizations occur without any interorganizational interaction (e.g., better infrastructure, increased revenues) (Krugman, 1991), while the second argues that agglomeration benefits require active interaction and exchange (Knoben, 2009; Mota & de Castro, 2004).

The network perspective can be useful in the analysis of spatial clustering (Araujo, 1998; Håkansson & Snehota, 2006), which maintains that, for certain organizations, the environment consists of a “limited number of identifiable organizational entities (actors)” (Håkansson & Snehota, 2006, p. 259). The network provides access to relevant but tacit knowledge and resources that are unavailable for organizations outside the network (Greve, 2009; Maskell, 2001; von Corswant, 2005). Socio-economic processes and spatial proximity facilitate the knowledge transfer within localized business networks (Molina-Morales, Belso-Martínez, Más-Verdú, & Martínez-Cháfer, 2015). Therefore, spatially clustered business networks provide a source of competitive advantage (Greve, 2009; Håkansson & Snehota, 2006).

Access to external knowledge is a necessary but ultimately insufficient condition for innovation. Firms require absorptive capacity to understand, acquire, and use external knowledge and information (Cohen & Levinthal, 1990). Boundary-spanning organization members with sufficient absorptive capacity (Tortoriello, 2015) who go beyond their prescribed duties (Qiu et al., 2009) are most likely to access external knowledge. Interorganizational learning—the application of external knowledge—is more likely to occur when the firms' knowledge bases are sufficiently different. However, interorganizational learning will not occur if the cognitive distance is too great (Maskell, 2001).

Clustered organizations exchange extramural and industry-specific knowledge, norms, practices, and technologies. This cluster-specific knowledge differentiates the cluster from the wider industry (Doloreux, Shearmur, & Guillaume, 2014). Knowledge is more easily disseminated within clusters because organizations have greater absorptive capacities for cluster-specific knowledge and because the cognitive distance is shorter among cluster organizations (Cohen & Levinthal, 1990; Maskell, 2001). However, the current research does not sufficiently explain how this knowledge transfer and acquisition occurs. ICB may be the missing link.

An example of a sector where the cognitive distance is not large is the sports industry. Sports industry clusters include a large variety of organizations (Gerke, Desbordes, & Dickson, 2015). These organizations comprise private companies that provide different types of equipment, services, media, or designs as well as professional and amateur sports organizations, governing bodies, and education/research institutes. Clusters contain many interorganizational linkages, each offering the potential for knowledge exchanges (Chetty & Agndal, 2008). This research examines ICB in a sailing industry cluster (Autry et al., 2008; Gerke et al., 2015; Skinner et al., 2009) in addition to the role of

cooperation (Dyer & Singh, 1998; Tuomela, 1993) and collaboration (Astley & Fombrun, 1983; Vlaar, Van den Bosch, & Volberda, 2006) for developing ICB.

The sports industry is a fruitful context to study spatial clustering and its benefits. Previous empirical studies on spatial clustering include several sports industries: sailing (Chetty, 2004), surfing (Stewart, Skinner, & Edwards, 2008), and skateboarding (Kellest & Russell, 2009). Conceptual research also exists on sports clusters, but none focuses on innovation (Gerke et al., 2015; Shilbury, 2000). Most studies on sports innovation focus on the end user as the innovation source (Hyysalo, 2009; Lüthje, Herstatt, & von Hippel, 2005; Schweisfurth & Herstatt, 2016).

2.1. Citizenship behavior, interorganizational linkages and innovation

Citizenship is the strongest form of interorganizational behavior and is stronger than both collaboration and cooperation (Keast, Brown, & Mandell, 2007). Previous research investigates citizenship in the context of organizations (Organ, 1988, Podsakoff et al., 2014), supply chains (Autry et al., 2008; Skinner et al., 2009), interfirm projects (Braun, Müller-Seitz, & Sydow, 2012; Ferreira et al., 2013), intrafirm networks and cross-functional teams (Im et al., 2013; Qiu et al., 2009), and firm-customer relationships (Langner & Seidel, 2015; Nambisan & Baron, 2009). In the context of supply chains, ICB are “interfirm behavioral tactics, generally enacted by boundary personnel, that are discretionary, not directly or explicitly included in formal agreements, and that in the aggregate promote the effective functioning of the supply chain” (Autry et al., 2008, p. 54).

ICB occurs between different types of cluster organizations. The cluster literature distinguishes between vertical and horizontal cluster members. Vertical cluster members conduct related activities and are typically in a buyer-supplier relationship. Horizontal cluster members have similar and often complementary activities. Horizontal cluster members can include supporting institutions, universities, trade associations, and other cluster stakeholders (Bell, Tracey, & Heide, 2009; Malmberg & Maskell, 2001). Individuals belonging to different cluster organizations engage in ICB.

Clusters provide members with easier access to resources and tacit knowledge, which are crucial for innovation. Cooperation and collaboration are levers for knowledge transfer in interorganizational linkages (Bell et al., 2009; Knoben, 2009). Malmberg and Maskell (2001) refer to the civic nature of economic agglomerations to capture institutional, social, and cultural characteristics that facilitate information and knowledge transfer. This paper extends their argument by investigating whether ICB facilitates information and knowledge transfers as well as innovation.

ICB is neither enforceable nor based on formal or contractual agreements. The prevalence of ICB results from an organization's permanent decision-making process through its agents within interorganizational dyads and networks (Autry et al., 2008). This study argues that ICB facilitates the innovation process in heterogeneous networks of relationships through cooperative and collaborative activities that do not respect or require formal organizational boundaries (Araujo, 1998).

The dimensions of ICB are advancement, altruism, conscientiousness, constructiveness, compliance, loyalty, and tolerance (Autry et al., 2008; Organ, 1988; Skinner et al., 2009). Advancement is behavior directed at constantly improving operations and outcomes in the cluster by improving relationships, knowledge bases, and the integrated processes linking two or more organizations. One example of this behavior is collaborating on product development. Altruism is behavior that is directed at helping other cluster members acquire skills, knowledge, or resources. Organizations engage in a selfless effort to assist others. Examples include sharing acquired knowledge and providing advice, warnings, and recommendations. Conscientiousness occurs when people perform interorganizational tasks with higher than normal levels of forethought and effort. Examples include overseeing of clients'

stock and progressive fill-up. Constructiveness is both interest and activity in interorganizational affairs that impact the interorganizational network, its members, and relationships, which can be reflected in lobbying on behalf of cluster members. Compliance denotes following or orienting behavior towards cluster rules, policies, and processes (e.g., quality standards). Loyalty denotes allegiance to the cluster and its members, sometimes sacrificing one's own interests for the greater good. One example is to remain committed to a business partner even during difficult economic times. Last, tolerance means to accept the inevitable inconveniences associated with interorganizational relationships and exchanges (e.g., delays without retribution) (Autry et al., 2008; Organ, 1990; Podsakoff et al., 2014).

This article analyses ICB in the innovation process. The innovation process can be subdivided into three phases: the ideation phase (i.e., idea generation, evaluation, and selection), the invention phase (i.e., the prototype development and testing), and the exploitation phase (i.e., large scale production and commercialization) (Bergendahl & Magnusson, 2015; Damanpour & Schneider, 2006; Dougherty, 1992; Roberts, 2007; Schweisfurth & Herstatt, 2016).

Previous research links citizenship to innovative and spontaneous behavior. The underlying motivational basis for citizenship lies in the internalization of goals and social satisfaction from relationships (Katz, 1964; Organ, 1990). Katz (1964) theorizes that when employees' goals overlap or are identical to the organization's goals, this concordance stimulates innovative and spontaneous behavior. Similarly, the satisfaction that an employee derives from relationships with close colleagues stimulates innovative and spontaneous behavior.

In the interorganizational setting, the internalization of goals and values concern the shared goals of two or more organizations. This leads to innovative and spontaneous behavior across the interorganizational dyad or network. Similarly, if relationships between employees of different organizations generate satisfaction between the involved employees, innovative and spontaneous behavior in support of interorganizational goals is likely (Katz, 1964; Organ, 1988, 1990). Although these explanations indicate a link between ICB and innovation, it is unclear when and how ICB occurs in the innovation process. This uncertainty underpins the following research question: How does interorganizational citizenship behavior (ICB) influence the innovation process?

Innovative and spontaneous behavior is leveraged through ICB. Hence, this paper proposes the following:

Proposition 1a. ICB is a mechanism through which firms understand, acquire, or use external resources (i.e., absorptive capacity) (Tortoriello, 2015); and

Proposition 1b. ICB occurs during all phases of the innovation process (i.e., the ideation, invention, and exploitation phases) (Schweisfurth & Herstatt, 2016).

By studying ICB as a lever for innovation, this study contributes to the ongoing discussion about the benefits of geographical proximity. If the findings confirm the link between ICB and innovation, the argument that interaction is necessary to enhance innovation activities within economic agglomerations is strengthened (Knoben, 2009; Knoben & Oerlemans, 2006).

2.2. Citizenship-based, collaborative, and cooperative behaviors as strategic approaches

The underlying rationale to describe interorganizational behavior as a strategic approach lies in the network perspective of the organization and its environment (Håkansson & Snehota, 2006). This perspective is in opposition to the traditional strategic perspective whereby the focal organization is incapable of exerting influence on its environment (Ansoff, 1987). The network approach argues that an organization's environment consists of a limited number of actors to which the organization is linked via exchange relationships. Different strategies enable

organizations to exert influence on these organizations (Håkansson & Snehota, 2006).

Cooperation and collaboration are mechanisms that leverage inter-organizational relationships for positive outcomes at the business level (Dyer & Singh, 1998; Porter, 1998; Ring & Van De Ven, 1994). Knoben (2009, p. 761) refers to cooperation as localized external linkages that include "all interactions between a firm and other organizations with knowledge acquisition for its innovation activities as its primary goal". On the other hand, he defines localized interorganizational linkages that are "long-term collaborations between actors in which activities are jointly carried out".

Collaboration is stronger than cooperation but weaker than citizenship (Keast et al., 2007). Collaboration involves two or more organizations working together to jointly achieve greater success than each organization could attain by working in isolation (Daugherty et al., 2006; Dyer & Singh, 1998). Collaboration requires more commitment than cooperation and implies task sharing, task coordinating, and mutual contribution for goal achievement. When acting collaboratively, organizations seek collective efficiencies (Bell et al., 2009). Collaborative cross-sector research and development (R&D) projects often include universities, suppliers, competitors, and customers (Etzkowitz, 2012; Un & Asakawa, 2015).

Cooperation is a weaker form of relational strategy compared to collaboration (Keast et al., 2007). Cooperation denotes intended joint action consisting of individual actions (Tuomela, 1993) and is based on a shared understanding of sentiments and collective interaction patterns in an interorganizational dyad or network (Benson, 1975). Cooperative behavior refers to two or more organizations acting independently towards a common goal or benefit. The aim is to optimize interorganizational routines and processes rather than the joint creation of something (i.e., collaboration). Cooperation is the use of systematic strategies to generate benefits from efficient interorganizational interactions (Dyer & Singh, 1998). Cooperative behavior is likely to be featured in many types of interorganizational relationships, including partnerships, coalitions, joint ventures, franchises, research consortia, and network organizations (Ring & Van De Ven, 1994); it is also evident in strategic alliances (Luo, 2008), buyer-supplier relationships (Johnston, McCutcheon, Stuart, & Kerwood, 2004), and clusters (Chetty & Agndal, 2008).

Both cooperation and collaboration precede or underlie ICB (Braun et al., 2013; Ferreira et al., 2013; Organ, 1990). Ferreira et al. (2013, p. 3776) explain that "the OCB dimensions of employees' cooperative behaviors had a positive influence on the organizational climate". This statement positions citizenship as behavior that is embedded in cooperative behavior. Additionally, collaboration is identified as a strategy for upstream and downstream R&D partnerships (Langner & Seidel, 2015; Un & Asakawa, 2015). There is considerable literature on the role of interorganizational cooperation and collaboration in facilitating innovation (Dagnino et al., 2015; Schleimer & Faems, 2016) and the likely role of ICB (Organ, 1990). Therefore, the subsidiary research question is: What roles do collaboration and cooperation play in the development of ICB throughout the innovation process? On the basis of these previous findings, the propositions are as follows:

Proposition 2a. Collaborative behavior precedes or underlies ICB.

Proposition 2b. Cooperative behavior precedes or underlies ICB.

3. Method and data collection

The decision between single and multiple case studies is based on how much is known about the investigated phenomenon and how much can be learned from one or several cases (Eisenhardt, 1991). This is a single case study because there is only nascent knowledge on the role of ICB for innovation. Single cases allow for a rich and in-depth data analysis and the development of testable, relevant, and

valid theories (Eisenhardt, 1989). Case studies that are based on a variety of data sources enable rich empirical descriptions of real phenomena (Yin, 2009). The study employs abductive logic to build theory (Dubois & Gadde, 2002; Flyvbjerg, 2006; Welch, Piekkari, Plakoyiannaki, & Paavilainen-Maentymaeki, 2011). The following sections outline the case selection, data collection process, and data coding process.

3.1. Case selection and description

This research focuses on a sectoral innovation system (Jenson, Leith, Doyle, West, & Miles, 2016). New Zealand provides favorable conditions for the development of a marine industry cluster and has a well-developed sailing industry with a sector that concentrates on ocean racing (Chetty, 2004; Glass & Hayward, 2001; NZ Marine, 2015). The marine industry association, the maritime museum, and important events (e.g., trade shows and sports events) all reflect the historical, cultural, and economic importance of the New Zealand marine industry. The case studied here is the longstanding industrial agglomeration around marine activities, notably ocean racing, in Auckland. A large number of vertically and horizontally connected organizations characterize the cluster. The maritime industry association has over 450 members with 100 members located close to Auckland's central business district (NZ Marine, 2015). Auckland's population and water access allow it to host an estimated 75% of marine activities (Ireland, Satchcroft, Mayson, & Janzarik, 2009). The ocean racing sector employs approximately 160 people and accounts for approximately €10 million in revenue, whereas the overall marine industry employs 7900 people and generates €735 million in revenue (Market Economics, 2012).

3.2. Data collection

Semi-structured interviews ($n = 27$) and observations ($n = 4$) provide the primary data. Organizational information ($n = 12$) and archival data ($n = 1$) provide the secondary data. Semi-structured interviews are the main data source. Occasions for observations include a professional sports event, an industry boat-building and design competition, a boating trade show, and a visit to the national maritime museum. Observations and informal interviews help to identify cluster organizations

for semi-structured interviews. Secondary data encompass company profiles, product brochures, industry association newsletters, and strategic planning documents.

The interviewees are from cluster organizations in Auckland and its surrounding communities. Most interviewed cluster organizations specialize in racing products and services. There are also interviews with ocean racing teams and firms specializing in leisure yachting sectors, such as super yachts and dinghy sailing. The interviews stopped when the information became repetitive, i.e., when the data reached the saturation point (Suddaby, 2006).

Interviews with organizations from ten different types of cluster organizations furnished the viewpoints of each category of the cluster organization. These categories include typical cluster member organizations such as sports equipment manufacturers, service providers, amateur or professional sports clubs, sports and public governing bodies, and education or research institutions (Gerke et al., 2015). The interviewees were chosen according to the type of organization to which they belong and their involvement in innovation and interorganizational linkages. Table 1 presents the list of interviews and key information for each interview, including the type of cluster organization, the code of the interview, the number of employees in the interviewed organization, the interviewee's position, the duration of the interview, and the length of the interview transcript.

The first author transcribed all interviews manually. The interviewees were able to verify the transcripts, and 40% requested minor changes. The remainder confirmed the transcripts without amendments. The first two themes of the semi-structured interview are the characteristics of the cluster environment and the position of the organization in the cluster. When asked to describe any form of relationship with other cluster organizations in detail, the interviewees provided concrete examples of the relationships, which produced information concerning interorganizational behavior. Finally, the interviewer inquired directly about the link between interorganizational relationships and innovation.

3.3. Data coding

Once transcribed and imported into Nvivo 10 (QSR International, London, UK) for coding, the data underwent several coding rounds.

Table 1
List of interviews.

N°	Type of cluster organization	Code	No. of employees	Interviewees' position	Duration (minutes)	Pages of transcript
1	Shipyards	SY1	50	General director	37	13
2	Shipyards	SY2	370	Project coordinator	52	19
3	Shipyards	SY3	20	General manager	41	19
4	Shipyards	SY4	10	Associate director	56	21
5	Naval architect	NA1	10	Designer	39	13
6	Naval architect	NA2	1	Naval architect	36	14
7	Marine equipment	ME1	6	Director	45	13
8	Marine equipment	ME2	9	Sales manager	31	11
9	Marine equipment	ME3	9	Director	60	19
10	Sail maker/rigging	SR1	44	Designer	37	15
11	Sail maker/rigging	SR2	50	General manager	28	10
12	Sail maker/rigging	SR3	3	Director	53	17
13	Sail maker/rigging	SR4	18	Managing director	60	17
14	Marine services	MS1	3	Director	24	10
15	Marine services	MS2	1	Director	45	13
16	Marine services	MS3	1	Director	42	14
17	Marine services	MS4	5	General manager	30	11
18	Media/communications	MC1	2	Editor	73	17
19	Professional sports	PS1	500	Athlete life advisor	33	12
20	Professional sports	PS2	500	Performance analyst team leader	45	15
21	Professional sports	PS3	122	Design performance analyst	57	14
22	Education/research	ER2	2	professor/director research unit	51	13
23	Governing body	GB1	18	Director	52	16
24	Governing body	GB2	110	Customer manager	55	19
25	Governing body	GB3	110	Program leader	54	16
26	Amateur organization	AO1	1	Vice commodore	36	11
27	Amateur organization	AO2	30	Marketing manager	35	11

First, “chunks of data of varying size” aligned with pre-defined themes that were derived from the research questions (deductive) (Miles, Huberman, & Saldaña, 2014, p. 71–72). These coding themes included the ideation phase, invention phase, exploitation phase, advancement, altruism, compliance, conscientiousness, constructiveness, loyalty, tolerance, collaboration, and cooperation. Table 2 contains the definitions of the coding themes.

The second step identified the data coded for both an innovation theme (e.g., ideation, invention, and exploitation) and an ICB theme. The quotations coded for both themes—interorganizational behavior and innovation phases—suggested links between these themes. Referred to as cross-coded, they share the same method of cross-coding that identified the role of cooperative and collaborative behavior for

citizenship. In the third step, the first author explained and synthesized the cross-coded quotations in an inductive manner. While she conducted the initial coding, the co-authors verified deductive and inductive coding via tables of quotations to ensure inter-coder reliability.

4. Results

The following sections present evidence from the case indicating the role of ICB in the different phases of the product innovation process to leverage interorganizational linkages as a source of innovation. Different practices illustrate different ICB dimensions in each innovation phase. Advancement and altruism, followed by conscientiousness, constructiveness, and loyalty, are the most evident ICBs. Collaborative or cooperative behavior underpinned ICB. The following sections discuss the prevailing ICBs for each innovation phase and the extent that collaborative and cooperative behaviors underlie these ICBs.

4.1. ICB during the ideation phase

The ideation phase consists of idea generation, evaluation, and selection (Bergendahl & Magnusson, 2015; Roberts, 2007). Advancement and altruism are recurring ICBs during the ideation. Organizations from seven of the ten different categories provide examples of advancement in the ideation. Organizations from five of the ten categories provide examples of altruism during the ideation. The following paragraphs outline typical ICB practices during the ideation phase.

The first practice during the ideation phase is *suppliers' involvement and integration*. Shipyard SY1 explained that suppliers contribute to improving products by suggesting better raw materials. SY4 provided an example of how feedback to a supplier improved product design. The interviewee noted that this mutual improvement of knowledge bases occurs mainly between small- and medium-sized companies (SMEs) but is less typical for larger organizations. In a refurbishing project, a naval architect's supplier suggested using new refrigerating technology (NA1). These examples show that suppliers provide ideas regarding material, design, and technology innovation.

The marine equipment firm ME2 provided an example about how collaboration with a supplier developed a new anchor system. From this initial product innovation, the relationship evolved into ongoing exchanges. Sail maker SR1 underlined the importance of fully integrating suppliers in the innovation process, “*It is very, very important to actually engage the suppliers and make them part of the whole process.*”

In most examples, the interacting cluster organizations had a common goal—improving the focal product—towards which they work jointly. This quotation from the public governing body summarizes the close relationships between suppliers and buyers, “*Normally, most of the sail makers, spar makers, or boat-builders will be just so tightly integrated into those teams that you would not know where one stops, where one starts and the other finishes.*” (GB3)

The next practice is parallel or subsequent *involvement in sport and business*, such as in the example of coaching professional sailing teams and the operation of a shipyard by the same person. This enables the transfer of knowledge and ideas (SY3). Firms working with professional sailing teams take advantage of the knowledge bases of the team but also of the team's other partners and suppliers (SR2). People involved in sailing and its industry are willing to improve each other's knowledge bases through informal advice and exchange, “*I mean, being here definitely helps, and then you can always ring someone up who will know how we can do this.*” (SR2). Being involved with professional sports teams and athletes provide firms with the input and drive for innovation, “*They have the top technology there. They are really pushing their limits, so we have certainly learnt from being involved with these guys*” (MS4).

Some firms practice close *collaboration with complementary and competing firms*. MS4 referred to a well-functioning debriefing process that allowed collaborating firms to advance thanks to mutual

Table 2
Definitions of coding themes.

Innovation process phases		
Ideation	The generation of a thought or suggestion as to possible courses of action that would lead to changes in existing products or processes. The ideation phase consists of idea generation, evaluation, and selection.	Bergendahl & Magnusson, 2015; Roberts, 2007
Invention	The first realization and test of an existing idea for a new product or process. The invention phases include prototype development, testing, and refinement.	Fagerberg, 2011, Roberts, 2007
Exploitation	The exploitation phase includes the transfer to large-scale production and the commercial exploitation of the invention in the marketplace.	Dougherty, 1992; Schumpeter, 1942
Interorganizational behaviors		
Collaboration	Any form of interorganizational exchange that involves two or more cluster organizations working jointly towards a common goal.	Daugherty et al., 2006; Dyer & Singh, 1998
Cooperation	Any form of interorganizational assistance between two or more cluster organizations working independently towards a common goal.	Benson, 1975; Tuomela, 1993
Citizenship	Any form of interfirm behavioral tactics, generally enacted by boundary personnel, that are discretionary, not directly or explicitly included in formal agreements, and promote the effective functioning of the cluster in the aggregate.	Autry et al., 2008, Organ, 1990
Advancement	Steps taken to improve relationships, knowledge bases, and integrated processes linking one or more cluster organizations.	Autry et al., 2008; Podsakoff et al., 2000
Altruism	Behavior directed at helping a cluster organization solve problems or acquire needed skills/knowledge.	Autry et al., 2008; Podsakoff et al., 2000
Compliance	Orientation towards the rules, policies, and processes applied by other cluster organizations; compliance with cluster behavioral norms.	Autry et al., 2008; Podsakoff et al., 2000
Conscientiousness	Performing cross-organizational tasks with higher than normal levels of forethought and effort.	Autry et al., 2008; Podsakoff et al., 2000
Constructiveness	Interest and activity in interorganizational affairs affecting the relationships between exchange cluster organizations.	Autry et al., 2008; Podsakoff et al., 2000
Loyalty	Allegiance to cluster organizations and the cluster as a whole, sometimes sacrificing the interests of the cluster organizations for the greater good.	Autry et al., 2008; Podsakoff et al., 2000
Tolerance	Identification and tolerance of the inevitable delays/impositions/inconveniences associated with interorganizational exchange without retribution.	Autry et al., 2008; Podsakoff et al., 2000

exchanges, feedback, and learning. Collaboration happens not only between complementary firms but also between competitors. The willingness to assist other complementary or even competing cluster organizations is the result of common sense and goodwill (MS4).

Another practice is *collaboration with public and non-profit organizations*, which include education and research institutes, public or industry governing bodies, and sports governing bodies. A professional sailing team called upon universities for innovative ideas, “*And they invited people, if they had good ideas that they think would help the boat go faster, to submit them. [...] I then put together the report and sent it to Team New Zealand for them to review*” (ER1).

Altruism is evident in the practice of *mentoring and consulting throughout the network*. In many cases, former apprentices start their own consulting business but help their former employers by developing and evaluating new ideas (SY3). The director of shipyard SY4 emphasized the altruistic nature of this behavior, “*For some people, you are willing to give advice, even knowing that he is not going to have anything in return, purely because of who they are and what they are trying to achieve*”. The interviewee also noted that this type of behavior occurs mainly among SMEs.

Altruism enables firms to solve small problems informally and unconventionally. SR2 explained, “*There is the ability to have tight enough relationships [...] in which you can draw on other people's expertise*”. Firms are very open and willing to help each other by providing knowledge or information, “*It is pretty easy to pick the phone up and ask people ‘How do you do this and how do you do that?’ Those people are pretty forthcoming*” (SR2). Similarly, a participant from a media and communication firm stated, “*As a rule, I'd say people are very, very open and very polite about providing information, being interviewed and about us going through their yards and things like that*” (MC1).

Service providers are *key intermediaries as information providers* between core equipment manufacturers and system suppliers. They install and maintain specialized equipment, conduct general overhauls, update quality and security, and provide inspection certificates. They also work with many different core equipment manufacturers and suppliers, which provide them with a broad overview of the industry and its technologies. Finally, they are an important source of feedback for improvement and new ideas (MS4).

Another practice is *federating networking meetings*. These are occasions where knowledge and information sharing reflects altruism. The local marine industry association organizes regular networking events to facilitate face-to-face meetings. These informal exchanges promote business opportunities and discussions about production techniques and collaborations for new product developments (GB1). Cluster organizations make their facilities available for industry cluster events such as the “*After-5-Networking-Events*” (SY2). Overall, there is a high level of commitment in the cluster organizations to “*not just do the job for which they have been paid but also to help in other areas*” (SR1).

4.2. ICB during the invention phase

The invention phase consists of prototype development and testing (Roberts, 2007). Advancement, altruism, and conscientiousness are mostly cross-coded with the invention phase. Organizations from seven of the ten categories provide examples regarding advancement and five regarding altruism helping in the development or testing of the prototype of a product. Organizations from four of the ten categories mention situations in which conscientiousness is relevant for the invention phase. The following paragraphs outline typical ICB practices during the invention phase.

The first identified practice is *joint new product development* in inter-organizational teams. The shipyard director of SY3 referred to close collaborations with a marine equipment firm or naval architects. A similar collaboration occurs in larger boat projects, where the key parties co-locate to facilitate a high-performing ocean race boat. A sail maker compared the atmosphere in this ocean racing boat project to “*a big*

library. You sit in there. It is just a continuous cycle of building knowledge. It is quite a unique sort of environment” (SR1).

The sailmaker/rigging firm SR4 explained that professional sailing teams and universities can help to develop new products, provide ideas for improvement, and test prototypes. Occasionally, the university assists with product testing and production optimization. Collaborations between universities, sail makers, and professional ocean racing teams resulted in the construction of a sail testing facility. Researchers and technical staff from the university contributed to the product development and improvement. There was no payment for the involvement in this project. However, financial and political constraints hindered future collaborations of this type. There are relationships between universities and sports governing bodies, but the interactions are limited to an occasional exchange of semi-professional sailors or performance measuring equipment (ER1).

Marine equipment firms contribute to the product development process by accompanying and advising the boat builder or designer in the choice of equipment for the sail and the rigging system on the boat. Clients may actually accept higher prices for the knowledge and advice of a local marine equipment specialist (ME3).

For idea generation, the suppliers provide input, whereas during the invention phase, the typical practice is that *buyers test prototypes and provide feedback* and ideas for improvement (SY4). Another case where the buyer provides important feedback during the product development phase occurred within a local sailing club. Here, a youth coach works closely with the boat-builder and designer to develop youth training sailboats (AO2). Similarly, professional sailors contribute to the invention phase by testing the boat and boat piece prototypes and providing feedback to the designers and builders during the construction process (PS3). The sailmaker/rigging firm SR4 referred to a case where a shipyard conducted tests on the material delivered by SR4 to verify the quality of the delivered material compared to other suppliers. At the request of SR4, the shipyard shared the results so that SR4 could develop better materials.

The *recombination of resources from different suppliers* is another practice that is relevant to the invention process. Shipyard SY4 took ideas and products from three different suppliers to unify these elements in a new product. SY4 combined input from three independent firms. The national sports organization worked with several suppliers to combine different products to find a new solution for performance measurement. The idea for the product came from ocean racing but required adaptation for the smaller boats used in Olympic sailing (PS2).

The *circulation and networking of staff in the local supply chain* is a common practice and helps facilitate the invention process. In the Auckland sailing industry cluster, “*Everybody knows everybody, even if they might not know them directly*” (ME3). This informal network, and the cluster members' attitudes, allow for fluid information dissemination even before the selection of official suppliers. Suppliers are willing to provide technical advice leading up to a project. The interviewee regarded this consulting role as being beyond the sales role (ME3).

Boat-building projects for professional ocean racing teams and races help facilitate the convergence of local competencies. The effective functioning of this local industry network requires at least a temporary level of altruism from the participating organizations. Because the sailing races occur every few years, this feature facilitates a recombination of resources and competences because individuals work for the different professional teams and marine firms (PS3).

Citizenship is also demonstrated by *passion, initiative and ideal work ethic* of cluster organizations' cooperation on the prototype. For example, a newly appointed manager is able to assume responsibilities without the need for training (SR1). Personal interest and passion allow employees and managers to transcend their assigned tasks and organizational boundaries (SR1; PS3). Honesty and tolerance complement this work attitude. Blaming others is not an acceptable practice. Everyone

encourages one another to help find solutions to problems (MS2). For example, SY2 explained the willingness of the suppliers of sails or rigging equipment to participate in sea trials, which can be quite long and can occur at inconvenient times (SY2).

4.3. ICB during the exploitation phase

The exploitation phase refers to the large-scale production and commercialization of the final prototype (Dougherty, 1992; Schumpeter, 1942). There is no one single dominant type of citizenship evident during the exploitation phase. Advancement, altruism, constructiveness, and loyalty all occur to a similar extent. Organizations from five of the ten categories consider altruism and loyalty a factor during the exploitation phase. Four organizations consider advancement and conscientiousness relevant to the exploitation phase. The following paragraphs outline typical ICB practices during the exploitation phase.

The first practice is *joint promotional activities* during trade shows, which are a common form of advancement. Although this could be initiated by a group of companies, more often, public authorities or industry associations take the initiative. The advantages of centrally organizing the cluster's presence at a trade show are cost reductions, higher visibility, and opportunities to interact with companies from their own local supply chain or industry (SR2; SR4). National identity plays an important role in the cluster organizations' reasoning for participating in these activities, "The brand New Zealand has a very high ranking internationally for boats. Like for champagne, you buy the French brand if you want the best" (GB1). Firms can choose to join these collective initiatives but are not bound to do so, as is the case for corporate structures (GB1). Another example of cooperative promotional activities is the Marine Integration Group. Four differently specialized marine equipment firms developed an integrated product combining the "entertainment system, the wiring, the control panels, the GPS navigation, the lighting, so they all work together so that companies can take on a bit, or the other bit, or the whole bit" (GB2).

The practice *mutual recommendation and word-of-mouth communication* reflect altruism when companies recommend clients to each other without charging any fees (SY4). Cross-promotion was also the case for a university's research and testing facility and a start-up that appeared as a spin-off of this activity (ER1). Marine equipment firms and specialized media cooperate to leverage attention and visibility (ME3). Client referrals are also common between marine brokers (MS1). Loyal relationships are the basis of mutual recommendations (MS4). However, these behaviors concern normal operations rather than the commercialization of inventions.

Another practice is *mutual or unilateral assistance and learning* among cluster members. This is reflected in joint participation in events. For example, joint participation in trade shows is not only useful for visibility and cost reduction but is also useful for facilitating exchanges and cooperation between cluster organizations (GB1). There are examples of mutual or unilateral assistance in entering and developing new markets. ME2 helped a supplier access the super yacht segment. An industry association provides assistance to individual firms or a group of firms to access international business opportunities (GB1). New Zealand Trade and Enterprise (NZTE) is developing a program to support collaborative activities among New Zealand marine companies. Although collaboration is embedded in the culture of the marine industry, the government emphasizes cooperation for the commercialization of products and services (GB3).

Finally, firms with high *commitment to the cluster* are most likely to use ICB in the exploitation phase. ME3 emphasized, "You really have to rank the common goal much higher than your self-interest". ME3 noted that because the marine industry is dependent on leisure activity, it is the responsibility of all industry members to make sailing attractive and enjoyable to grow the market. With the same reasoning, ME3 also sometimes sponsors regattas with a competitor. Their business philosophy reflects advancement and altruism towards their business partners

at the commercial level. Loyalty and commitment within the marine and sailing industry is high because most are SMEs (GB3).

4.4. The role of collaborative and cooperative behavior for ICB

Advancement, altruism, and constructiveness tend to be embedded in collaborative relationships or networks. For example, the involvement and integration of suppliers in idea generation or joint new product development with other organizations require a willingness to collaborate. Organizations take risks in terms of confidentiality when they collaborate. However, they can achieve greater results together compared to working alone (Daugherty et al., 2006). The sharing of information and the joint recombination of resources need to be based on a willingness to collaborate (Hohberger, Almeida, & Parada, 2015). During the invention phases, examples of collaboration and cooperation with other cluster organizations frame the development of citizenship. Cooperative behavior, however, is mostly sufficient for the development of ICB, similar to altruism in the exploitation phase. Joint actions in marketing, similar to sharing a stand at a trade show or recommending each other to clients, does not require tight collaboration; cooperation is sufficient (Felzensztein, Gimmon, & Aqueveque, 2012).

5. Discussion, implications, and conclusions

5.1. Discussion of major findings

Strategy traditionally relies on the notion that competitive advantage is attained through the superior combination of product factors (Barney & Zajac, 1994; Porter, 1998; Schumpeter, 1942). This case study shows that the idiosyncrasies of a sport-based industry cluster generate constructive interactional approaches based on amiability. Interorganizational behavior is no longer forged by hostile and destructive attitudes towards other market actors but rather by friendly and constructive interaction approaches (Zuckerman & Sgourev, 2006). These attitudes favor citizenship arising from collaboration and cooperation as a means of achieving innovation (Autry et al., 2008; Dyer & Singh, 1998). These findings contribute to the theory in innovation management and economic geography.

There is support for **Proposition 1a**—ICB are mechanisms through which firms understand, acquire, or use external resources (i.e., absorptive capacity) (Tortoriello, 2015)—and **Proposition 1b**—ICB occurs during all phases of the innovation process (i.e., the ideation, invention, and exploitation phases) (Schweisfurth & Herstatt, 2016). Table 3 summarizes the results regarding the Propositions 1a and 1b.

Confirming **Proposition 1a**, the case provides clear evidence that ICB allows the cluster organizations to access, acquire, or use external resources, knowledge, or information. By also confirming **Proposition 1b**, it shows that the role of ICB in the innovation process is only evident for the ICB dimensions of advancement, altruism, and conscientiousness for the ideation phase in addition to loyalty and tolerance for the invention phase and advancement, altruism, constructiveness, and loyalty for the exploitation phase. These results support Schweisfurth and Herstatt's (2016) findings that external sources are relevant during the entire innovation process. Furthermore, the results improve the understanding of how citizenship functions in the ideation phase (Im et al., 2012) and in the invention phase (Nambisan & Baron, 2009) in the interorganizational context.

Support for **Proposition 2a**—Collaborative behavior precedes or underlies ICB—is evident because the results suggest that collaboration tends to underlie ICB during the ideation and, to a lesser extent, during the invention and exploitation phases. The results also support **Proposition 2b**—Cooperative behavior precedes or underlies ICB—since they demonstrate that cooperative linkages are a sufficient condition for ICBs during the exploitation phase. Fig. 1 illustrates the findings concerning all propositions.

Table 3
Interorganizational practices of ICB during the innovation process.

	Idea	Invention	Exploitation
Advancement	Suppliers' involvement and integration Parallel involvement in sports and business Cooperation between complementary and competing firms Cooperation with public and non-profit organizations	Joint new product development Buyer testing and feedback on prototypes Recombination of resources from different suppliers	Joint promotional activities Mutual or unilateral assistance and learning Commitment to cluster
Altruism	Mentoring and consulting through networks Intermediaries as information providers Federating network meetings	Buyer testing and feedback on prototypes Circulation and networking of staff in the local supply chain	Mutual recommendation and word-of-mouth communication Mutual or unilateral assistance and learning
Compliance Conscientiousness Constructiveness	Federating network meetings	Passion, initiative, and ideal work ethic	Joint promotional activities Mutual recommendation and word-of-mouth communication Mutual or unilateral assistance and learning Commitment to cluster
Loyalty		Circulation and networking of staff in the local supply chain Passion, initiative, and ideal work ethic	Mutual recommendation and word-of-mouth communication Commitment to cluster
Tolerance		Passion, initiative, and ideal work ethic	Commitment to cluster

5.2. Managerial implications

If ICB as a relational strategy works, managers need to consider this as an alternative to traditional competitive strategies. The dominant adaption approach explains organizations' interactions with their environment as a reaction to pressures, constraints, and challenges in their environment (Astley & Fombrun, 1983; Hannan & Freeman, 1977). If managers adopt a positive and friendly approach and the interactions are oriented towards constructive linkages and interactions, organizations may respond more effectively to exogenous pressures, constraints, and challenges. Previous research has already shown the positive effect of ICB on supply chain management (Autry et al., 2008).

More precisely, the challenge of remaining competitive may be better achieved through constructive attitudes and linkages rather than hostile attitudes and destructive interorganizational interaction patterns (Autry et al., 2008). Simply put, talking about projects is enriching, but keeping projects secret is not because no new ideas are generated. For example, in the case of start-ups, it is crucial to obtain early

validation from actual customers and suppliers (Ries, 2011). Furthermore, ICB may reduce the cost of innovation because the involved actors optimize and harmonize the innovation process (Schumpeter, 1942).

The relational strategy approach is difficult to implement because relational strategies such as ICB only work if they are adopted by several organizations. The challenges for relational strategies are to implement them consistently within an industry, sector, or geographical area. The role of cluster governing bodies and industry associations in promoting collective rationality (i.e., a strategy in which rational behavior for a single organization will only be rational if adopted by others (Hannan & Freeman, 1977)) is a promising topic of research.

5.3. Limitations and future research

The limitations of this study are related to the specific empirical context and research design. The nuanced characteristics of a sports industry cluster allow relational strategies to contribute to innovation in unusual ways. The single case study approach limits the potential

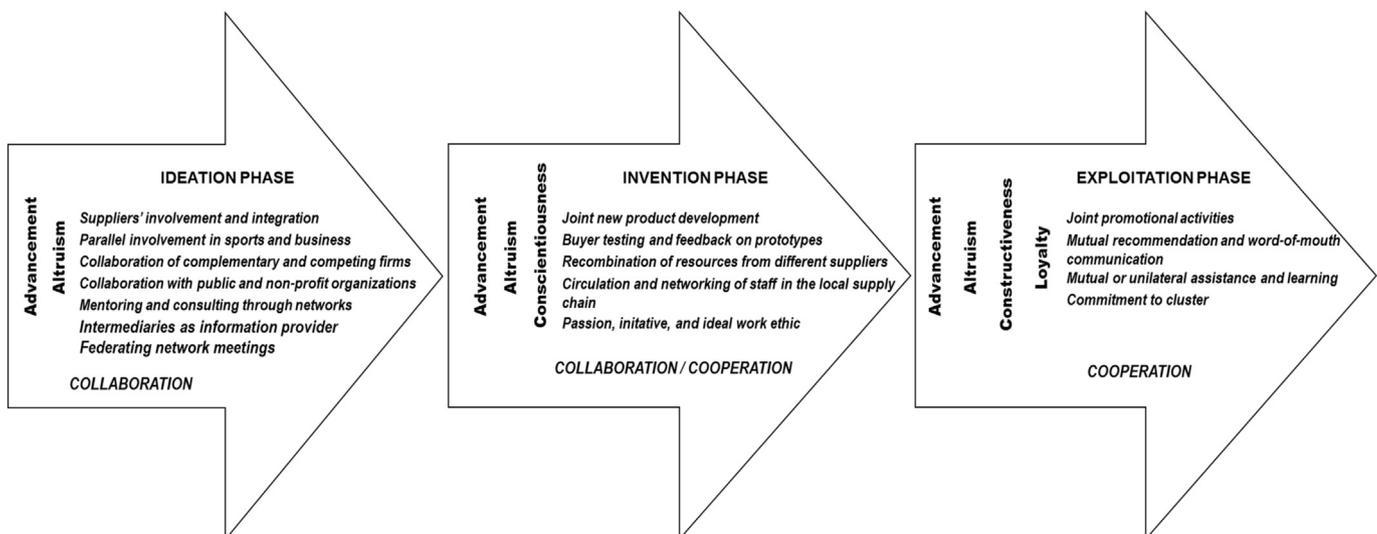


Fig. 1. Summary of findings.

generalizability of this theory to sports industries that are structured in the form of industrial clusters. In spite of these shortcomings, this paper suggests that traditional forms of relational strategy, cooperation and collaboration can lead to citizenship and finally foster innovation. Fig. 2 summarizes these relationships.

Based on the identified linkages between different levels of interorganizational behavior and their impact on innovation, future research should investigate the robustness and validity of these propositions with quantitative research approaches. Second, the relational strategic approach based on ICB should be studied in more interorganizational contexts. Further research should investigate the extent to which ICB occurs in different industries, sectors, and cultural and national contexts. The third topic for future research is the impact of different ICB dimensions on different types of innovation. Fourth, the ability of ICB to help innovation should be compared to traditional sources of innovation (e.g., internal firm resources or customers). A theme for investigation could be methods of creating synergies between different innovation sources through ICB. The study of citizenship at several levels—for example, at the organizational and team-level—could complement this research direction (Braun et al., 2012; Im et al., 2013; Nambisan & Baron, 2009).

5.4. Conclusions

ICB helps organizations innovate. The New Zealand sailing industry cluster reflects a changing paradigm in strategy from competition-driven behavior, which is based on hostile attitudes that are reflected in destructive interactions, towards collaboration-driven behavior, which is characterized by friendly attitudes and is evident in constructive interactions. This study contributes to understanding the role of interorganizational linkages in the innovation process. A key conclusion is that since spatial proximity is insufficient, ICB, collaboration, and cooperation are necessary for enhancing innovation activities in an industrial agglomeration (Knoben, 2009; Knoben & Oerlemans, 2006).

These insights have implications for the strategic management of interorganizational linkages. Multiparty collaboration helps organizations find new solutions within changing environments (Fjeldstad, Snow, Miles, & Lettl, 2012). New approaches to strategy demand changes in managerial attitudes and behavior. In other words, bouquets are as useful as brickbats. Researchers, managers, and politicians can use citizenship to lever interorganizational relationships to enhance innovation and competitive advantage. Citizenship values, attitudes, and behavior will not only improve resource utilization but also create sustainable firm strategies, industries, and economies.

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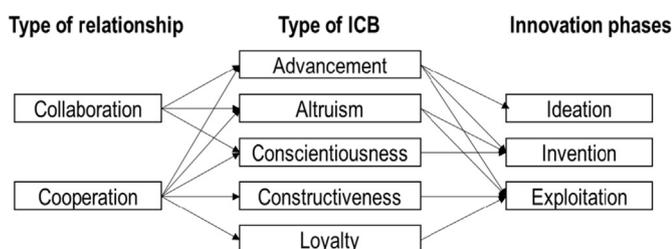


Fig. 2. The roles of cooperation, collaboration, and ICB in the innovation process.

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