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## **Essays on Open Innovation in Non-Profit Sports Clubs**

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### Summary

#### Abstract

Through the rise in overlapping target groups of nonprofit sports clubs with other organizations, the pressure on clubs to gain competitive advantages has intensified. One way of dealing with increased competitiveness is through innovation, which has been shown to be crucial to an organization's survival and effectiveness. Focusing on the concept of open innovation this thesis investigates if and how the concept is applicable and utilized in nonprofit sports clubs. The findings show how sports clubs use different aspects of the open innovation concept to introduce innovations. Furthermore, the thesis provides evidence of how facets of open innovation positively influence a sports club's performance and how important these facets are compared to other management related variables.

#### Zusammenfassung

Durch zunehmend überlappende Zielgruppen von gemeinnützigen Sportvereinen mit denen anderer Organisationen hat sich der Druck auf Sportvereine, sich Wettbewerbsvorteile zu sichern, verschärft. Eine Möglichkeit sich dem steigenden Wettbewerb zu stellen, ist die der Innovation. Innovation hat sich als maßgeblich für das Überleben und die Leistungsfähigkeit von Organisationen erwiesen. Diese Arbeit untersucht Innovationstätigkeiten von Sportvereinen an Hand des Open Innovation Konzepts. Es wird erforscht ob das Konzept anwendbar ist und wie es in gemeinnützigen Sportvereinen genutzt wird. Die Ergebnisse verdeutlichen, inwieweit Sportvereine verschiedene Aspekte des Open Innovation Konzepts nutzen, um Innovationen einzuführen. Darüber hinaus erforscht die Arbeit, wie gewisse Open Innovation Aspekte die Leistung von Sportvereinen positiv beeinflussen und zeigt auf, wie wichtig diese Aspekte im Verhältnis zu anderen managementbezogenen Kenngrößen sind.

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## **1 Introduction**

There are a couple of inherent dilemmas to the theoretical idea and practical implication of innovation. From a theoretical standpoint one of the most crucial tasks is to find the 'correct' definition of what constitutes an innovation. As Damanpour and Schneider (2006) write, the only constant attribute of the plentiful disciplines that study innovation is the idea of newness. The question arises, do we want anything that has just the slightest degree of newness with regard to just one small characteristic to be classified as an innovation? A too generic definition of innovation would make the least innovative look as though they were an innovation factory. Thus, from a theoretical point of view, we could not dismiss anything as being not an innovation but 'just' a change or enhanced capability. In other words, in this case the explanatory power of the definition of innovation would be close to or equal to zero.

On the other hand, the plentitude of characteristics, disciplines, complexities and perspectives that can be used to define an innovation could possibly be extended to such a great amount as to equal the number of innovations under consideration. Consequently, each innovation would correctly be defined as an innovation with at least one unique attribute or attribute peculiarity compared to all other prior innovations. If each innovation has its own definition the explanatory power of all definitions would equal one. The result would be that no future innovation could correctly be specified as such without being complemented by its own unique innovation definition. From a practical point of view, the idea of innovation would then, in all likelihood, go extinct and no company or person could claim to be innovative from that point forward. Hence, researchers and scientists have to come up with innovation definitions that are neither too generic nor too specific, but concentrate on the important aspects of their respective disciplines and are put into the

context of their field of study. Therefore, innovations addressed in this thesis constitute an adoption of a new service, process, or business model, on the organizational level of sports clubs (Damanpour & Schneider, 2006).

A more practical dilemma of innovation is that of creative destruction (Schumpeter, 1943). With everything new something old is most likely to vanish, or at least become less important, as consumer interests – and with that producer foci – change. Schumpeter (1943) analyzed that attention has shifted away from the importance of individual personalities and will power, as ‘innovation itself is being reduced to routine’ (p. 132) and resistance to new things – due to the fact that they are new – has greatly declined. The process of creative destruction through innovation is present in any industry or market, but the impact and implication can differ greatly. The market for sports services is a market for which this dilemma presently plays a crucial role.

The market for sports services is comprised of various distinct organizations, such as public and commercial organizations, informally organized groups, and nonprofit sports clubs (to name a few). Of these organizations, some are more and some are less accustomed to creative destruction; and others have most recently developed due to creative destruction caused by technological progress. For several reasons nonprofit sports clubs can have great difficulties in adjusting to creative destruction and in coming to terms with competing for a common customer base that is very much accustomed to change and innovation.

Nonprofit sports clubs are very often rooted in traditions (Thiel & Mayer, 2009). Cultivating traditions and representing members’ interests can go hand in hand, yet necessarily deviate the attention of sports clubs away from market oriented activities such as targeting potential members with new offers (Thiel & Mayer, 2009). Furthermore,

traditionalism in organizations does not fare well with innovation, as pleas for change are often interpreted as disrespectful or disloyal towards the organization and its superiors (Vago, 1995). This underlines Schumpeter's above mentioned argument that the importance of the individual personality will diminish when innovation becomes routine. It seems that traditionalist nonprofit sports clubs are still resisting things that could benefit the organization, partly caused by a reluctance towards newness and partly due to overemphasizing the importance of individual personalities in the clubs. However, not all sports clubs focus on tradition (Nagel, 2008), and for those that do, first studies have emerged on how tradition can be modified (Legg, Snelgrove, & Wood, 2016). In addition, focusing on tradition could also very well be a unique marketing activity in order to attract a certain target audience, especially when competing organizations predominantly focus on innovation activities and thereby neglect tradition and sociability values to a certain extent.

What complicates innovation matters for all nonprofit sports clubs is the fact that they are volunteer-run. They therefore only have a very limited human resource capacity (compared to commercial organizations). What is more, they face a number of organizational problems, such as declining volunteer rates and financial difficulties (Wicker & Breuer, 2013). All in all, one can argue that sports clubs act in an unfavorable environment when it comes to implementing innovations, caused both internally (by focusing on tradition) and externally (by changing stakeholder interests and engagement). It is therefore necessary to evaluate how innovation in nonprofit sports clubs can be pursued, and if innovation can alleviate some of the above mentioned organizational problems in order to gain competitive advantages and increase the likelihood of organizational survival (Wollebaek, 2009). This dissertation contributes to filling this



research gap and lack of managerial evidence by examining innovation in nonprofit sports clubs through the lens of open innovation.

## **2 Theoretical Background**

This chapter introduces the concept of open innovation, the concept which lays the groundwork for this thesis. Furthermore, a concept called coopetition, i.e. simultaneously cooperating with one and the same competitor, will be elaborated upon. This is a concept that was found to be crucial in the setting of nonprofit sports clubs (Study 1) and was thus taken under closer examination in the subsequent studies (Study 2 and Study 3). It is explained why the two concepts are of interest when investigating innovation activities of nonprofit sports clubs. Lastly, the background of different performance dimensions used in prior sports-related nonprofit studies and in this thesis is explained.

### 2.1 Open Innovation

The concept of open innovation was introduced by Henry Chesbrough (2003). Its general proposition is to utilize external knowledge as well as internal knowledge to create new value. This kind of value creation can only be realized if organizations allow external knowledge to flow into the organization, hence open innovation, and can be enforced if organizations actively search for relevant external knowledge (Laursen & Salter, 2006). This in turn implies that organizations should open up their boundaries and not solely focus on internal resources, but combine external with internal resources to the best of their abilities in order to create innovations. This kind of innovation process is called inbound innovation, in which external knowledge is sourced or acquired and brought to

market by the focal company (Gassmann & Enkel, 2004). The antagonistic process is called outbound innovation, where internal knowledge is outsourced to an external entity and not brought to market by the focal organization. This thesis' focus lies on the former of the two innovation processes.

With his seminal work on open innovation Chesbrough (2003) does not necessarily provide a new imperative (as is claimed) on how to innovate, but he is able to combine many prior existing innovation-related research ideas and research fields (e.g., absorptive capacity, gatekeeping, network model, user innovation) under one encompassing framework (Trott & Hartmann, 2009). Building upon this framework, research on open innovation has steadily increased over the past years and expanded into new fields. This thesis introduces and applies ideas of the open innovation concept to the nonprofit sports sector.

Nonprofit sports clubs exhibit several characteristics that make it seem reasonable to choose open innovation as a conceptual framework for investigating innovation activities of these organizations. These organizations deliver services on a community level (Doherty, Misener & Cuskelly, 2014) and in some cultural contexts are even referred to as community sports organizations. They serve the broader public with sport and physical activity opportunities and actively pursue social issues and causes, such as inclusion and integration through sport (Deutscher Olympischer SportBund, 2014). Sports clubs could therefore be loosely characterized as open organizations, delivering sport to all.

Members of nonprofit sports clubs often take on a dual status, being officially registered with the club and at the same time being a volunteer, e.g., on the board of directors, as a coach, or in another position. These members use, and at the same time

provide the services of sports clubs. In German sports clubs, over one fourth of the members act as secondary volunteers, meaning that they are at least sporadically engaged in volunteering activities, and over half of the members are engaged in social events hosted by the club (Wicker & Breuer, 2013). Hence, the number of people that could potentially be tapped into as knowledge sources, or be employed as innovation volunteers searching for relevant knowledge and innovation opportunities, is quite abundant.

Nonprofit sports clubs are not only linked to their members who come in on a regular basis, but they are the stakeholders whom clubs are inevitably linked to. Sports clubs are part of a (typically well-established) network consisting of a multitude of other stakeholders, such as municipal politicians, sport federations that act as umbrella organizations to the clubs, and other sport service providers, such as schools. These different stakeholders provide plenty of opportunity for sports clubs to engage in networks and to use existing platforms, thus allowing for a wide variety of different knowledge sourcing activities. However, these platforms can be used by most of the distinct sports organizations mentioned above. The issue for sports clubs is therefore not only about answering the question whether they want to engage in a stakeholder-driven network, but at the same time, whether they are willing to connect with competitors when engaging in such networks. The latter aspect is becoming all the more important now, as threats of new entrants and substitutes are increasing competition for sports clubs (Porter, 2008; Wicker & Breuer, 2013).

### 2.2 Coopetition

“Economic interest is realized both in competition and in the planned organization of producers, in isolation against other groups as well as in fusion with them” (Simmel, 1950, p. 22). Simmel (1950) was the first to extensively discuss the forming of social groups and the pursuit of interest as a multifaceted relational concept in which cooperation and competition are fundamental elements. The concept later resurfaces in economics under the name coopetition (Brandenburger & Nalebuff, 1996), where the concepts’ driving forces are dismantled and game theoretically reassembled to provide businesses guidance for business strategy and market share growth. Since then, the interest of the scientific management community has steadily increased, which might originate from the paradoxical idea of simultaneously cooperating and competing with one and the same organization (Bengtsson & Kock, 2014). Coopetition is thus not to be interpreted as a concept that arranges the two elements cooperation and competition in a binary relationship, with one end being cooperation and the other being competition. It is a concept whose elements span a two-dimensional matrix allowing for multiple degrees of concurrent cooperation and competition between entities (Bengtsson & Kock, 2014).

Coopetition increases value by means of three different types of activities: private benefit through competition, private benefit through cooperation, and common benefit through cooperation (Rai, 2016). Common benefit actions are accompanied by inter-organizational knowledge sharing which can further result in joint learning (Dyer & Singh, 1998), whereas both private benefit activities through competition and cooperation are accompanied by knowledge spillovers willingly taken into account by the coopetition partners (Rai, 2016).

For both coopetition and open innovation, external knowledge sources constitute the most important conceptual component for value creation. Consequently, Vanhaverberbke, Cloudt, and Van de Vrande (2008) call for linking the two concepts, as both emphasize the idea of jointly creating value to individually profit from it. One argument brought forward to why these concepts might not have been linked is due to the fact that coopetition relationships are more complex than 'ordinary' cooperation relationships and thus have to be considered separately (Mention, 2011). However, this argument only holds true if competition is defined narrowly and not in accordance with Porter's (2008) idea of competition that is driven by all market players. If competition is defined broadly, e.g., taking into account the force of new entrants and substitutes, the two concepts should not be investigated without either being linked or at least acknowledging the other's existence.

As previously stated, competition between nonprofit sports clubs and other organizations has become fiercer over recent years (Nowy, Wicker, Feiler, & Breuer, 2015). However, clubs predominantly tend to focus on either collaborating or competing, regardless of whom clubs might be collaborating with (Babiak & Thibault, 2009). This approach to collaboration might deprive sports clubs of the potential value they could gain through successful coopetition, as they fail to reap the awards of either private benefit through competition, or private and common benefit through cooperation. It is therefore of interest how sports clubs that make use of 'coopetitors' perform compared to those that do not.

The importance of knowledge sources for open innovation and coopetition was stressed earlier and there is a reason as to why this is especially relevant in the context of nonprofit sports clubs. The key to this argument lies in the impact social interactions

and geographical proximity have on knowledge spillovers (Audretsch & Feldman, 2004). Both the impact of social interactions and the impact of geographical proximity increase the likelihood of knowledge spillovers (Von Hippel, 1994) and reduce the uncertainty that accompanies innovation activities (Feldman, 1994). This is particularly of interest when taking into account the community character of nonprofit sports clubs, the high (sporadic) volunteer and event participant interactions, as well as the multiple platforms facilitating interaction among sports clubs, their stakeholders, and potential competitors. All of the above mentioned characteristics speak for a favorable environment for knowledge spillovers, knowledge creation, and innovation, as social interactions are plentiful and geographical distance is negligible. One can argue that sports clubs act in a favorable open innovation environment, which might very well outduel the unfavorable organizational resource aspect (Wicker & Breuer, 2013) that might hinder innovation.

### 2.3 Performance Measures

In order to assess if innovation has an impact on sports clubs, this thesis (Study 2 and Study 3) investigates the influence of innovation activities on the performance of clubs. However, measuring performance in volunteer-run nonprofit organizations is not as easy as measuring the performance of commercial organizations that act according to market principles. A study of Winand, Vos, Claessens, Thibaut, and Scheerder (2014) captures and categorizes over thirty measures used in research studies of the nonprofit sport sector. Due to the high diversity of statutes of clubs and of the goals they pursue (Nagel, 2008), one will not find a one-fits-all performance measure, and therefore the call for multi-dimensional performance scales is rather strong (Winand et al., 2014). On the other hand, one can argue that, e.g., innovation performance or quality performance are

relevant, but only if they translate into value. They are a means for a higher order performance dimension and if they do not translate into a meaningful benefit for an organization, pursuing these performance aspects would be redundant. Hence, in the studies of this dissertation the performance outcomes of interests are membership and financial performance of sports clubs. The constructs were measured from the perception of the respondents and in Study 1 asked how the clubs general membership and financial development compared to the time prior to introducing the innovations the clubs introduced. In Study 2, membership performance was assessed via multiple items taking into account the club's acquisition of members, the club's attractiveness for members, and the overall membership situation of the club.

### **3 Methodology**

All three studies presented in this dissertation have in common that they are of empirical nature, yet each follows a different methodological approach. Study 1 is of qualitative, Study 2 of quantitative-confirmatory, and Study 3 of quantitative-exploratory nature. This section will explain these approaches, outline the implementation of each method for the respective study, and provide insight into sampling and measures used. Table 1 provides an overview of the studies properties.

#### **3.1 Study 1**

Study 1 is based on primary qualitative data collected through semi-structured interviews. The purpose of the study was to identify if and how open innovation can explain innovation activities of nonprofit sports clubs, resulting in the development of a theoretical

framework for open innovation in nonprofit sports clubs. The conceptualization of the interview questionnaire, as well as the sampling of the sports clubs followed the recommendations of Mayer (2008). Interviews were conducted with representatives from eleven sports clubs in summer 2013. Purposeful selection of clubs was enabled via a database provided by a municipal sports agency in Bavaria.

*Table 1. Overview of the studies' properties*

	Study 1	Study 2	Study 3
<b>Main goals</b>	Analyze innovation practices in sports clubs via an open innovation perspective and derive which open innovation aspects lead to successful innovation implementations	Theoretically derive and test the fit of a coopetition-based open innovation model and assess the impact of coopetition on organizational performance of clubs via use of outside knowledge and the sum of implemented innovations	Assess the importance of the open innovation constructs under consideration in Study 2 for predicting membership performance of clubs by taking into account numerous other predictors and confounding constructs and investigate the relationship of the important predictors with membership performance
<b>Statistical method</b>	Content analysis of semi-structured interviews with board members	Structural equation modelling approach based on online survey of board members	Random forest analysis based on online survey of board members
<b>Location</b>	Greater Munich Area	Saarland	Palatinate
<b>Sample size</b>	11	292	284
<b>Constructs under consideration</b>	Innovation activity Competition Cooperation Customer integration Distribution of tasks Qualifications Commitment Organizational structure Infrastructure Financial situation	Organizational performance (i.e., membership & financial performance) Coopetition Use of outside knowledge Innovation sum	Membership performance Service quality Trust Competition Size of club Visionary leadership Networking ability Coopetition Age of board member Use of outside knowledge Innovation sum Dedication Departments Innovation yes-no Structure (uni-sport vs. multi-sport) Gender Tenure



Among the eleven sports clubs under consideration, five were uni-sport clubs (i.e., clubs that provide only one sport) and six were multiple-sports clubs (offering more than one sport). The geographic location of three of the sports clubs can be described as fairly rural, whereas the others were located in an urban environment. There were three clubs with fewer than 400 members, three clubs with a membership base of 400-1,000, three clubs with a membership base of 1,000-2,100, and two clubs with more than 2,100 members.

Where present, the clubs' websites and print materials were researched prior to the interviews to obtain general information about the organization. In the interviews, open questions and closed follow-up questions were used, allowing for ambiguous answer possibilities. General interview categories were: perceived competition, cooperation activities, customer and member integration, task distribution among board members, qualifications, commitment and involvement of board members, organizational structure of clubs, infrastructure of clubs, and financial situation of club.

The interviews were audio-recorded, transcribed, and subsequently analyzed with MAXQDA and Microsoft Excel. The data was reduced and solidified in a four-step process according to Mayring (2000). This process consists of (1) paraphrasing the relevant material, (2) coding the paraphrases, (3) generalizing the paraphrases, and (4) integrating, deleting, and bundling coextensive generalized paraphrases.

### 3.2 Study 2

Study 2 took place in summer 2014 in Saarland. Based on an online survey of representatives of nonprofit sports clubs, a structural equation modelling (SEM) approach was used to test a coopetition-based open innovation model. The model tested is a

sequential mediation model that allows to assess the impact of coopetition on organizational performance of clubs via use of outside knowledge (mediator 1) and implementation of innovation (mediator 2). In total, there were 2,116 nonprofit sports clubs in the state in 2014, of which 292 clubs took part (14% response rate). This convenience sample is not representative of Saarland's sports clubs, but demographical and organizational figures show high similarities to sports clubs whose representatives took part in nationwide German online surveys (e.g., Breuer & Feiler, 2015). Thus, the sample is relevant for both theory testing and managerial implications for the above typified group of participants.

A link to an online survey was sent to the sports clubs via the sports federation's email distributor. The clubs were instructed that a board member who had managerial decision-making authority and who was knowledgeable about the service portfolio answers the questionnaire. The respondents were then asked questions about their perception of coopetition, use of outside knowledge, innovation activities, organizational performance of the clubs, as well as some control variables.

Coopetition, use of outside knowledge and organizational performance were measured via multi-item scales. The items were measured on rating scales anchored at 1 (fully disagree) and 7 (fully agree). Coopetition was assessed using an established scale from Bouncken and Fredrich (2012). Use of outside knowledge was measured via three items. Organizational performance was measured via two items, of which one item referred to financial stability and one to membership development. The sum of self-reported innovations implemented over a three-year span was used to measure innovation activities of the clubs. These innovation activities referred to service, process and business model innovations. For each innovation type, participants stated the number

of innovations that were implemented by the club in the past three years. Examples and definitions of the three innovation categories were given to ensure that participants understood what was meant by innovation, and in order to help them recall the potential types of innovations that had been implemented. To further strengthen innovation recall, it was asked of the participants to name specific innovations implemented.

Using Mplus (Muthén & Muthén, 1998–2015), the theoretically derived SEM was tested. As not all variables were normally distributed the robust maximum likelihood estimator was used. SEM, which allows to analyze both latent and manifest variables, has several additional advantages compared to other multivariate methods, such as controlling for measurement errors (Byrne, 2012).

### 3.3 Study 3

Study 3 took place in fall 2015 in Palatinate and builds upon results and limitations of Study 2. Based on an online survey of sports club representatives, this study builds on the constructs under investigation in Study 2 – cooperation, use of outside knowledge, innovation implementation, and club performance – yet adds several new constructs to the analysis and looks at an alternative conceptualization of performance. Using random forests (Breiman, 2001) the study analyzes the variable importance of all constructs under consideration and shows how membership performance is affected by the ten most important predictors.

Based on a convenience sample of 284 club representatives, the four constructs of Study 2 were again assessed using items that were measured on rating scales anchored at 1 (fully disagree) and 7 (fully agree), and using an innovation count over a three-year span. The performance measure, the response variable of the study, now

measured membership performance of clubs on a multi-item scale. The measure was altered after Study 2 as membership performance is the central aspect for other performance measures of sports clubs (despite their diverse club goals), such as volunteer performance (Papadimitriou, 2002), or financial performance (Study 2). Furthermore, constructs that have been positively related to helping sports clubs cope with organizational problems were taken into account. These constructs included networking ability (assessed with Ferris et al.'s (2005) networking ability scale), perceived trust (measured with three items), work dedication (based on the three dedication items of the shortened Utrecht Work Engagement Scale of Schaufeli, Bakker and Salanova (2006)), and visionary leadership (measured with three items). Additionally, the impact of competition, service quality, and control variables were also included as predictors of membership performance.

Random forests are an ensemble of bootstrapped classification or regression trees introduced by Breiman, Friedman, Olshen and Stone (1984). A tree recursively splits the dataset into 'purer' subsets that differ from each other regarding the prediction of the response variable (here membership performance of sports clubs). These binary splits are executed until a stop criteria is reached, e.g., when the increase in purity does not meet a certain a priori defined criteria. Single trees, however, are very sensitive to small changes in data and, as a result, are rather instable. Therefore, random forests grow a multitude of bootstrapped trees (hundreds or thousands) and use the average over all trees to predict the response variable. Furthermore, the method allows to analyze the partial dependence of the response variable with each predictor, while taking into account all other predictors. The analysis was done using R with the randomForest package (Liaw & Wiener, 2002).

## 4 Essays

### 4.1 Essay 1 – Open Innovation in Nonprofit Sports Clubs

**Publication** (peer reviewed): Wemmer, F., & Koenigstorfer, J. (2016). Open innovation in nonprofit sports clubs. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 27(4), 1923-1949.

**Main Author:** Felix Wemmer

#### **Abstract**

This research paper investigates open innovation in the context of nonprofit sports clubs and is based on the content analysis of semi-structured interviews held with representatives of eleven sports clubs.

The study develops a framework that describes open innovation activities in nonprofit sports clubs as facets of four superordinate dimensions, namely permeability of the club's boundary, application and implementation of open innovation practices, managerial competencies, and the environmental and organizational surroundings in which the club operates.

Within these dimensions, subordinate facets such as commitment of the club's president and the strategic use of cooperative environments explain how and why sports clubs are successful at implementing innovations and how their nonprofit status (e.g., volunteer work) contributes to (or is in conflict with) innovation. The findings provide implications for nonprofit organizations inside and outside the sports sector.

4.2 Essay 2 – The Impact of Coopetition-Based Open Innovation on Performance in Nonprofit Sports Clubs

**Publication** (peer reviewed): Wemmer, F., Emrich, E., & Koenigstorfer, J. (2016). The impact of coopetition-based open innovation on performance in nonprofit sports clubs. *European Sport Management Quarterly*, 16(3), 341-363.

**Main Author:** Felix Wemmer

**Abstract**

This study conceptualizes and tests the impact of a coopetition-based open innovation approach on organizational performance of nonprofit sports clubs. In particular, it examines the effect of collaborations with competitors (i.e. coopetition) on the organizational performance of clubs via both use of outside knowledge and the adoption of innovations.

A statewide online survey with 292 members of the board of directors of nonprofit sports clubs was conducted in Saarland, Germany. The survey used valid and reliable scales and considered self-reported financial stability and membership development as organizational performance indicators. Structural equation modeling was applied to test the mediation model.

The proposed coopetition-based open innovation model has a good model fit. Engagement in coopetition has a positive effect on organizational performance via two sequential mediators: use of outside knowledge and innovation implementation. In addition, use of outside knowledge has a direct positive effect on organizational performance.

Nonprofit sports clubs should take advantage of collaborations with competitors and exploit external knowledge to the best of their abilities. The adoption of new services, processes, and business models on the organizational level helps nonprofit sports clubs stay competitive in an increasingly contested sports services market. The study provides both theoretical and managerial implications that help sports clubs innovate and increase organizational performance.

#### 4.3 Essay 3 – Membership Performance of Sports Clubs in the Context of Innovation: A Random Forest Analysis

**Working paper** (under review for conference proceedings, submitted to European Academy of Management Conference on 08/01/2017): Wemmer, F. & Koenigstorfer, J. (2017). Membership Performance of Sports Clubs in the Context of Innovation: A Random Forest Analysis.

**Main Author:** Felix Wemmer

#### **Abstract**

The study investigates the importance of several predictors of perceived membership performance in nonprofit sports clubs, namely factors relating to open innovation and organizational capacity, service quality, and control variables deemed relevant in prior studies. The study also assesses the relationships between these variables. More specifically, it uses a random forest analysis, a procedure that allows to assess the importance of predictors as well as partial dependencies and interactions between predictors in a systematic manner. Data were collected via an online survey

with representatives from 284 sports clubs from Palatinate, Germany. Participants filled in the survey and evaluated the membership performance of their respective club.

The analysis reveals that service quality and trust are the two most important predictors of perceived membership performance. Furthermore, despite taking into account numerous predictors of membership performance, innovation still has a direct positive impact on membership performance. The study further determines thresholds for the interrelatedness of service quality, networking ability, and innovation activity with perceived membership performance. Also, the analysis reveals a dark side of cooperation, meaning that collaborating with competitors at high levels negatively correlates with perceived membership performance. The results should thus help sports clubs to better meet the needs of their members.

## **5 Findings**

By investigating innovation activities of nonprofit sports clubs via open innovation this dissertation introduces a novel theoretical innovation concept to the sport management literature. Taking into account the specific environment in which nonprofit sports clubs operate (see Chapters 1 and 2), it was deemed reasonable and necessary to increase the understanding of innovation activities of nonprofit sports clubs via the open innovation concept and thereby add to the small but growing literature that looks at innovation in nonprofit sports settings (e.g., Caza, 2000; Hoeber, Doherty, Hoeber, & Wolfe, 2015; Hoeber & Hoeber, 2012).

Essay 1 develops an open innovation framework for nonprofit sports clubs based upon prior open innovation literature. Four core dimensions give the framework structure:



boundary permeability, managerial competencies, application and implementation of innovation practices, and environmental and organizational factors. Derived from semi-structured interviews (see Chapter 3.1), subordinate facets to the dimensions lend support to the structure: managerial qualifications, commitment, (customer) integration, task distribution, coopetition and specific environmental and organizational aspects. These facets emerged as being specifically relevant for further scientific investigation of open innovation in nonprofit sports clubs and also highlight important aspects that managers of nonprofit sports clubs can work on and use in order to implement successful innovations in their clubs.

To further describe what kind of innovations take place and what helped or hindered clubs in implementing these innovations, examples of three different types of innovations are illustrated. The three types of innovations were classified as new business model, new organizational structure, and new target group. To increase managerial implication and understanding, the study further shows how each facet influenced the implementation of the respective innovation. One unique aspect that was identified as relevant in the context of sports clubs was coopetition (see Chapter 2.1). This led to the idea of investigating a coopetition-based open innovation model.

Essay 2 develops a sequentially mediated coopetition-based open innovation model which is analyzed using SEM. The model shows a good overall model fit and provides evidence that the influence of coopetition on organizational performance is totally mediated by use of outside knowledge and innovation implementation. Furthermore, the impact of use of outside knowledge on organizational performance is only partially mediated by innovation implementation, showing significant effects on organizational performance despite the mediator. Hence outside knowledge is not only used for

innovation activity. It is also used for other club activities that have significant influence on organizational performance. These could encompass strategic positioning of the club in its political landscape, in order to profit from subsidies or municipal funds, or it could be used for in-house educational purposes (Galanaki, Bourantas, & Papalexandris, 2008) to strengthen the service quality delivered to club members.

A general insight from Essay 2 is that cooptation does not only have a positive effect on innovation implementation, as has been shown in previous studies (e.g., Ritala & Hurmelinna-Laukkanen, 2009), what is more, it has a positive effect on performance, which can partly be explained by innovation implementation. This in turn means that the innovations implemented by the clubs are fruitful and help the organizations sustain their share in the sports services market. Overall, the model tested shows that sports clubs that take a market oriented approach (in this case cooptation) also fare better on the market in terms of performing financially and membership-wise. However, an argument can be made that market oriented performance is not the purpose or primary function of nonprofit sports clubs. The main purpose is usually distinctively different and revolves around the sports provided and other social dimensions that are displayed in the charter of the club, but might not even be measurable (Thiel & Mayer, 2009). Following counterargument can be made: what good is the purpose of a sports club that does not exist, as its purpose served the people of the past and not the needs of people present or future.

Essay 3 uses random forests to investigate the importance of several open innovation related constructs with regard to membership performance. By taking into account numerous other predictors that are positively linked to, or scientifically proven to be antecedent of positive organizational outcomes, the analysis shows that the two most important predictors for membership performance of clubs are service quality and

perceived trust. This can be seen as an encouraging result for clubs, as these two aspects can be approached internally. However, the result also suggests that quality is a main factor for members of nonprofit sports clubs, and should encourage clubs to not overemphasize the idea of providing cheap sport, which is still far more important for clubs than providing high service quality (Breuer & Feiler, 2017).

With regard to the open innovation constructs under consideration, the importance ranking for predicting membership performance is (1) coopetition, (2) use of outside knowledge, and (3) number of innovations implemented. While the constructs were not under the top five predictors of membership performance, the result still shows that despite taking into account general management constructs (that have also been shown to be antecedents of innovation) and control variables, these open innovation related constructs still have a positive influence on membership performance, which highlights the significance of these constructs for sports clubs.

What is more, the partial dependence of the predictor variables with membership performance revealed that coopetition has a positive effect on membership performance, but only until a certain optimal amount is reached. Hence, clubs can also collaborate too much with competitors, which backs the finding of Wu (2014), who has shown negative effects of too much coopetition on innovation activity.

## **6 Limitations and Future Research**

Essay 1 builds upon a purposive sample and tests how and if open innovation plays a role in nonprofit sports clubs using semi-structured interviews. Both the sample, as well as the constructs deemed relevant for the interview were predefined. The flipside

to this approach is that fundamental theory building cannot be achieved. In order to show whether and to what degree nonprofit sports organizations differ from other organizations, future research on innovation in sports clubs should apply more interpretive research and critical postmodernism (Rynes & Gephart, 2004).

The two other studies of this dissertation are based upon similar sampling and survey methods, and they use similar measurement constructs. The limitations can therefore be generalized across the two studies. Using self-reported measurement constructs entails the possibility of certain biases. A social-desirability bias might have led to self-deception or other-deception behavior of participants with regard to measures they perceive to be well respected in society (Nederhof, 1985). Furthermore, a recall bias may have led to an over-reporting or under-reporting of innovations (Raphael, 1987). Future research should take into account these potential biases and try to employ observational measures.

Furthermore, using online surveys, the latter two studies are negatively skewed with regard to club size. However, small clubs are crucial for the functioning of sport systems (Nichols & James, 2008). Future studies should investigate the importance of innovation and the organizational evolution of small clubs, and employ methods that allow smaller clubs to be integrated into studies.

Lastly, both quantitative studies capture innovation of a prior period, whereas all other measures focus on present capabilities and characteristics. Hence reverse causality cannot be excluded. Applying long-term longitudinal approaches could help clarify the causality direction (e.g., Chong & Calderón, 2000).

## **7 Conclusion**

The findings of this dissertation underline that open innovation is a useful concept for analyzing innovation practices in the setting of nonprofit sports clubs. Study 1 reveals how facets of open innovation help clubs innovate and highlights the potential importance of coopetition for innovation activities. Study 2 tests and verifies the importance of coopetition in a coopetition-based open innovation model, showing how coopetition positively influences club performance via the use of outside knowledge and innovation implementation. While highlighting the most important predictors of membership performance for clubs, such as service quality and trust, Study 3 confirms the significance of the above mentioned open innovation related constructs for membership performance of clubs and illustrates the interrelatedness of the predictors with membership performance. Revealing, e.g., that high levels of coopetition negatively correlate with membership performance, the findings provide advice to sports clubs on how to influence membership performance positively.

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