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ARTICLE

Evaluation of the *Golf&Natur* Environmental Certificate From an Ecological-Economic Perspective

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Outdoor sport is often criticized by the general public for misusing nature for its own purposes. In response to this criticism, the German Golf Association has implemented an environmental certificate called *Golf&Natur* to force the issue of environmental and nature conservation in golf clubs. The aim of this study is to evaluate the ecological and economic benefits of the *Golf&Natur* certificate from golf clubs' point of view. The primary empirical study explores whether and to what extent *Golf&Natur* certified and non-certified golf clubs differ from one another. The results show that certified clubs rated the importance of the *Golf&Natur* certificate for all selected club objectives higher than non-certified clubs did. Overall, it can be stated that an environmental certificate can create value, and therefore, similar initiatives should be even more strongly considered in other golf markets, in other outdoor sports and in the context of mega events.

Keywords: club objectives, environmental certificate, protection, sustainability

Outdoor sport is often criticized by the general public for misusing nature for its own purposes (Briassoulis, 2010; Hartmann, 1988). For example, studies by Roux-Fouillet, Wipf, and Rixen (2011) as well as Caprio, Chamberlaim, Isaia, and Rolando (2011) show that ski slopes lead to a reduction in the plant cover and in biodiversity. Golf, as an exclusively outdoor sport that is dependent on green spaces, is in a unique position with respect to the environment (Nguyen, 2018b; Sanderson & Shaikh, 2018). The construction of facilities, surface transformations and different maintenance measures on a golf course have a significant impact on the ecological system (DeChano & Hruska, 2006; Rosenberg, 2018; Schemel & Erbgut, 2000). Additional impacts include clearing of natural vegetation, deforestation, changes in topography, soil erosion, the use of chemicals that are harmful to animals and humans, the disruption or destruction of wildlife habitats and ecosystems, genetically engineered grass, and excessive water consumption (Wheeler & Nauright,

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2006). Due to water shortages, golf clubs are particularly criticized in dry areas and are consequently confronted with environmental and economic challenges (Bunds, 2018; DeChano-Cook & Shelley, 2018; Salgot & Tapias, 2006). The high burden of fertilizers and pesticides is also criticized. However, Ryals, Genter and Leidy (1998) as well as Hindahl, Miltner, Cook and Stahnke (2009) do not identify significantly negative effects of golf courses on nature.

In fact, different studies demonstrate that golf courses offer several advantages to nature and the environment. Colding and Folke (2008) show that golf courses have high levels of biodiversity, sometimes even higher than conservation areas. Tanner and Gange (2005) demonstrate that golf courses have a higher diversity of trees, birds and beetles than adjacent farmland. With regard to bird diversity, Terman (1997) states that golf courses are comparable to biological reserves and park areas. Aquascaping on golf courses provides alternative habitats for alligators and aquatic bird species (Beeman, 1995; DeChano & Hruska, 2006). Finally, Sorace and Visentin (2007) show that golf courses with a certain proportion of forest have a positive effect on wildlife, especially in urban and agricultural areas. Additionally, given the dependence of golf on natural resource quality and the relatively wealthy participant base, golf is ideally positioned to invest in water conservation, sustainable landscaping, and environmental education (Sanderson & Shaikh, 2018).

In response to the criticism of the general public, different golf associations are actively involved in understanding and decreasing the sport's environmental impact. For over a decade, a number of organizations have created initiatives to make golf eco-friendly (Rosenberg, 2018). The World Golf Foundation started an initiative to support environmental issues in the design and management of golf courses. Additionally, the international non-profit Golf Environment Organization (GEO) offers resources for environmental measurement and improvement on golf courses, and it introduced an eco-label for golf courses that achieve environmental targets (Nguyen, 2018a). Acknowledging that golf courses are mini-ecosystems, Audubon International created the Audubon Cooperative Sanctuary Program for Golf. This certification programme is designed to "enhance the valuable natural areas and wildlife habitats that golf courses provide, improve efficiency, and minimize potentially harmful impacts of golf course operations" (Audubon International, n.d., p. 1). The German Golf Association has implemented an environmental certificate called *Golf&Natur* (Golf and Nature) with three different certification levels—gold, silver, and bronze—to force the issue of environmental and nature conservation in golf clubs. The certificate can be subdivided into four main focus areas: nature and landscape, care and game operation, work safety and environmental management, and public relations and infrastructure (DGV, 2014). The aim of this self-regulatory and proactive quality certificate is to achieve optimal conditions for golf courses while ensuring the highest possible protection of nature and its resources (DGV, 2015). Thus, the association creates a supply for the majority of golf clubs that see the right and prudent nature handling as important (Hammond & Hudson, 2007).

Previous studies on environmental certificates and golf have focused on how these certificates influence, on the one hand, green fee pricing in North America (Limehouse, Melvin, & McCormick, 2010) and, on the other hand, players' decision to select a golf course for a green fee round (Huth, 2017). Both studies illustrate that an environmental certificate can have a positive impact on both factors. However, these studies focus on golfers' and not golf clubs' environmental assessments.

Therefore, for the first time, this study focuses on golf clubs' perspectives of environmental certificates, primarily by means of an empirical research approach. The aim is to evaluate the *Golf&Natur* environmental certificate from an ecological-economic perspective from golf club's point of view. The study explores whether and to what extent *Golf&Natur* certified and non-certified golf clubs differ from one another. The main focus is on the ecological and economic objectives of golf clubs. In particular, the results will show whether the certificate is only good for the image and conscience of clubs or whether it helps clubs meet further ecological and economic goals. In principle, there are a number of time and financial resources associated with the certification process, since several years may pass before clubs reach the maximum certification level (gold). Clubs must pass the bronze and silver steps before they reach the highest and most valuable distinction.

The article is structured as follows: First, we provide brief insight into the topic of quality labels, focusing on environmental certificates and considering managerial aspects. Next, we present the method used and the descriptive data of the participating golf clubs. Subsequently, we present the empirical results. Finally, we conclude the article.

Insight into Quality Labels and Environmental Certificates from a Managerial Perspective

In general, environmental economics is based on the assumption that positive and negative externalities exist. These externalities arise when the full costs or full benefits of an activity are not borne by the decision maker. Factors such as pollution, noise, and smoking are the most commonly cited examples of negative externalities (Sanderson & Shaikh, 2018). Sport, with its manifold stakeholders, involves externalities that influence the environment. Consequently, in recent years, environment-related seals have been established in the market for several reasons, such as a growing environmental awareness among the general public and company decision-makers and the desire for a fairer use of nature (BMUB & UBA, 2010; Henriques & Sadorsky, 1996; Nakamura, Takahashi, & Vertinsky, 2001). Therefore, quality labels and environmental certificates that make a statement about the whole (total quality) or a subset (partial quality) of the characteristics of a product can give stakeholders guidance (Nguyen, 2018a; Sattler, 1991) and act as a guide for consumers to choose products that are environmentally friendly (D'Souza, Taghian, & Lamb, 2006). For example, companies face a large number of environmental demands from a wide range of stakeholders. Customers, investors, insurers and legislators demand, in addition to high product and service quality, the reduction of environmentally harmful by-products or risks (Berenz, 1997). Thus, in addition to classical management aims such as financial performance targets, product and service quality aims and social aims, ecological aspects such as environmental protection and the careful handling of resources must be taken into account in the target system of companies and near-natural organizations and institutions, such as sport clubs and their parent associations (Pfeifer, 2001; Vahs & Schäfer-Kunz, 2015).

From a management point of view, information asymmetries exist between actors, which can lead to different transaction costs (Cezanne & Meyer, 1998). In a principal-agent relationship, consumers do not have all the information required

to evaluate the quality of a product or a service; therefore, they face purchase risks (San Martín & Camarero, 2005). Certificates or quality labels can reduce uncertainty between the principal and the agent with regard to quality and, therefore, they can overcome market failure due to information asymmetries (Benkenstein & von Stenglin, 2006; Sammer & Wüstenhagen, 2006). The agent can be certified with a certificate or label that serves as a quality signal for the principal. In our case, golf clubs act as agents that want to reduce uncertainties regarding their environmental efforts or the quality of their golf facilities to principals by means of a certificate. Depending on the perspective adopted, for example, the (critical) general public or golfers may play the role of principal. Depending on the orientation of the certificate or label, information asymmetries in areas such as economic, legal or environmental fields can thus be reduced. As a result, the objectives and individual goals of each organization become concrete, controllable and qualifiable (Pröbstl, 2009). Consequently, these labels ensure, extend, and formalize existing consumer trust and their inherent function as original communicational quality seals. Further potential benefits of certifications for an organization include increasing its competitiveness, enhancing its image, reducing costs, reducing risk or improving organizational processes (Pröbstl, 2009). Quality certificates or awards can also contribute to positive developments within an organization in areas such as transparency, employee motivation, a stronger focus on customer preferences, and quality awareness (Bruhn, 2013). Additionally, these certificates are often used by businesses to differentiate their products, position them and communicate the environmentally friendly message (D'Souza, 2000). Disadvantages arise if the market contains too many quality labels, as consumers face difficulty evaluating their credibility, which can lead to mistrust and disorientation (Font, 2002; Langer, Eisend, & Kuß, 2008).

Focusing on environmental certificates, the purpose of these labels is to deliver information about the environmental friendliness of products and services (Gallastegui, 2002) and therefore to reduce information asymmetries that have a negative impact on the success of an organization (Benkenstein & von Stenglin, 2006). However, traditionally, it has been argued that environmental efforts and initiatives has been associated with additional costs to institutions (Palmer, Oates, & Portey, 1995; Walley & Whitehead, 1994). Eltayeb, Zailani, and Ramayah (2011) show that by introducing environmental initiatives, organizations can generate not only benefits to the environment in the form of reduced waste and better resource utilization but also economic benefits and cost reductions for the organizations. Focusing on financial performance, another study indicates that environmental performance does not pay off in the short term but does so over the long term (Horvathova, 2012). In this context, different studies indicate a price premium for eco-certified products or services (Fuerst & McAllister, 2010; Limehouse et al., 2010). Focusing on consumers, Kubitzki and Krischik-Bautz (2011) show that the German government-issued *Bio-Siegel* label—in contrast to other quality labels—convinces customers of quality and security and is perceived as pleasant. In general, consumers consider environment-related criteria and quality labels in their purchase decisions and are willing to buy environmentally friendly products at higher prices (Janssen & Hamm, 2012; Peattie, 1995; Robins & Roberts, 1997; Thompson, Anderson, Hansen, & Kahle, 2010). In this context, Blend and van Revenswaay (1999) show that the majority of consumers trust environmental certificates and are willing

to buy certified products regardless of possible price premiums. Therefore, from the managerial point of view discussed above, the certificates reduce information asymmetries and create trust among costumers. However, the stated willingness to consider sustainable consumption is expected to be much higher than the real purchasing behaviour, so the results certainly cannot reflect the complete reality.

Several factors, as well as social and legal frameworks, have increased the relevance of nature and environmental protection in sport. Mega events such as the Olympic Games, the Football World Cup and motor sport have created different environmental problems (Dingle, 2009; Dolles & Soderman, 2010; Kearins & Pavlovich, 2002; May, 1995; Paquette, Stevens, & Mallen, 2011). The issue has also had a considerable impact on sport organizations. The DOSB, the umbrella association of the German Olympic associations, supports the implementation of environmental quality labels (Neuerburg & Wilken, 2006). Sport-related environmental certificates are used on refuges of the German Alpine Association and in air sport, canoeing and golf (Bieber, 2005; Gretzschel, 2005; Scholze, 2005; Witty, 2005). For golf, as mentioned above, there is also a European equivalent (GEO Certified) and a USA equivalent (Bieber, 2005; Golfenvironment, 2017). As the examples show, environmental certificates are particularly widespread in sports that have a direct relationship with nature. However, as noted at the beginning of this paper, hardly any studies have considered environmental certificates in sport (such as golf) and investigated their benefits. The only two studies in this context focus on how these certificates influence green fee pricing in North America (Limehouse et al., 2010) and how players decide to select a golf course (Huth, 2017).

Methods

The study follows a direct, primary empirical research design that focuses on German golf clubs in the context of the *Golf&Natur* quality certificate issued by the German Golf Association. German golf clubs, with an average size of 70 ha, occupy a surface area of 46,000 ha, which is comparable to 64,500 football fields (Bieber, 2005); thus, they have a definite impact on the environment. A standardized online questionnaire was designed for the primary empirical investigation, and for time and cost reasons, it was placed online via the Qualtrics survey tool (Li, Pitts, & Quarterman, 2008; Wright, 2005). The questionnaire can be roughly divided into five parts:

1) Comparison of different quality certificates in golf
2) Evaluation of general objectives of golf courses
3) Evaluation of the impact of the Golf&Natur certificate on selected club objectives
4) Group-specific evaluation of the Golf&Natur certificate
5) Evaluation of different characteristics of participating golf courses

In the first part, to determine the general relevance of the *Golf&Natur* certificate in comparison with other certificates, participants evaluated three different quality certificates for golf: the *Golf&Natur* certificate, *The Leading Golf Courses of Germany* certificate and *The International Golf Stars Classification* certificate. All three

certificates have different criteria. While the first certificate focuses in particular on environmental standards, the other two focus more on the quality of the system and space of a golf club, and they are awarded only to those that meet the highest quality standards. The three selected comparison criteria included an increase in revenue, an increase in the quality of the golf club overall and an increase in the quality of the golf course. Second, several ecological, economic and sporting goals of golf clubs were selected based on the objectives of the association in connection with the *Golf&Natur* certificate (DGV, 2015) and the general (golf club) management objectives that have been described and developed in the previous chapter (Bruhn, 2013; Pröbstl, 2009; Shmanske, 2006). Participants evaluated the importance of the objectives for their club. In the next part, participants evaluated the impact of the *Golf&Natur* certificate on different ecological and economic club objectives. The goal was to show whether the environmental certificate is only good for the image and conscience of a club or it influences other factors, especially managerial and economic ones. In the next question block, certified and non-certified golf clubs were asked different questions. Certified clubs were asked whether the certification process drained their club's time and financial resources and whether they would again participate in the certification programme. In contrast, non-certified clubs were asked why they were not participating in the programme. Finally, the clubs were asked for club-specific characteristics, such as their legal form, the number of club members and the number of holes of their facility.

Regarding the importance of general objectives and the impact of the *Golf&Natur* certificate on selected targets, the participants answered questions on a 5-point Likert scale (from 1 = unimportant to 5 = important). Such scales have been widely used as they best reflect the preferences of participants (Revilla, Saris, & Krosnick, 2014).

As mentioned before, representatives of German golf clubs are surveyed over the course of evaluation for certificate eligibility. The German golf market contains a total of 732 golf clubs (DGV, 2017b), and the German Golf Association, the leading governing body of golf in Germany, counts 643,158 registered memberships of German golf clubs. Thus, the average golf club has about 880 members. Currently, 170 clubs are participating in the *Golf&Natur* certification process, and the German Golf Association has already awarded the certificate to 157 golf clubs. Therefore, nearly 22% of all German golf clubs are certified with the environmental certificate. So far, the association has awarded 75 certificates in gold (highest certification level), 39 in silver and 43 in bronze (DGV, 2017a). All golf courses in Germany for which the author obtained a functioning electronic address were contacted by e-mail (n=630) with a request to forward the message either to the manager or to a person responsible for the *Golf&Natur* certificate. The clubs were asked to select the person best versed in the subject of certificates. This was the manager in the majority of cases. While the respondents may have had different levels of knowledge about the certificates, all three certificates examined have been established on the German golf market for years; therefore, all participants should have had the minimum level of knowledge required for the present study. At the club level, only golf clubs with a golf course of at least nine holes were contacted. This criterion excluded golf facilities with, for example, only exercise facilities such as a driving range or a short course. About two weeks after the first e-mail,

the clubs were sent a reminder about the survey. The questionnaire was available from late July to mid-August 2017.

Recipients clicked on the online questionnaire 250 times, and ultimately, participants from 148 golf courses completed it (for a participation rate of nearly 25%). Of the 148 golf courses, 69 had received the *Golf&Natur* certificate, nine had begun the certification process, and 70 did not yet have the *Golf&Natur* certificate. Thus, the sample was balanced. Of the participating golf courses, 60% had the legal form "e.V." (registered association). On average, participating courses had 700 members. Furthermore, 11% of the facilities had 9 holes, 67% 18 holes, 19% 27 holes and 3% 36 holes or more. Moreover, 10% of the participating golf clubs had *The Leading Golf Courses of Germany* certificate, 7.5% *The International Golf Stars Classification Certificate*, 46% the *Golf&Natur* certificate and 49% none of these three certificates. Of the golf courses certified with the *Golf&Natur* environmental certificate, 19% had reached the bronze level, 25% silver and 57% gold at the time of the survey. Thus, certified golf courses have experience with the *Golf&Natur* certificate, since the gold level is reached only after bronze and silver have been passed successfully.

Results

The main results of the study are presented below. The sequence roughly follows the course of the survey described in the previous section.

First, participants were asked to compare the three quality certificates (*Golf&Natur*, *The Leading Golf Courses of Germany* and *The International Golf Stars Classification*), which are well represented in the German golf market and are awarded exclusively to golf courses that meet the highest quality requirements. They were asked to indicate the certificate that contributed most to achieving three overriding objectives. Alternatively, the answer option "None of the three certificates" was offered. As observed in Table 1, according to the participating golf courses, *The Leading Golf Courses of Germany* certificate is the most likely to lead to an increase in revenue. However, one-third of respondents believed that none of the three certificates is capable of increasing revenue. The *Golf&Natur* certificate is the best way to increase the quality of the entire facility and the golf course.

Table 1 Comparison of Three Quality Certificates Based on Three Criteria

	Increase in Revenue (e.g., Green Fee)	Quality Improvement for the Entire Facility	Quality Improvement of the Golf Course
The Leading Golf Courses of Germany	0.4662	0.3176	0.1824
The International Golf Stars Classification	0.0270	0.0608	0.0473
Golf&Natur	0.1486	0.4257	0.5811
None of the three certificates	0.3581	0.1959	0.1892

In the next section, we asked about the importance of selected golf targets on a 5-point Likert scale. In particular, economic, sporting and ecological factors were taken into account. The following Figure 1 shows the objectives according to their assessed importance using a column diagram. For a better orientation and relative classification, the mean values of all targets considered were calculated and are displayed graphically (red bar).

With values of approximately 5 on the Likert scale, three club objectives clearly stand out: the financial health of the facility, the satisfaction of members and the condition of the golf course. In golf management practise, all three factors can be related to a certain degree. A well-groomed golf course should increase the satisfaction of members, which should consequently have a positive influence on the financial health of the facility—at least in the medium to long term. In addition, the club image, the motivation and further training of employees, the number of members, and the protection of nature and the environment were assessed as above average. In addition to the objective of sporting success in the German Golf League, the target award also gives quality certificates comparatively weakly. Overall, the ecological targets are primarily in the middle of the rankings. However, all have an average value of more than 3, which can be interpreted as medium importance.

Since the importance of the objectives in question can vary by golf course, the mean values of certified and non-certified *Golf&Natur* were compared. Table 2 shows, in addition to the general descriptive results, the results of the mean value comparison and the mean values of both considered groups.

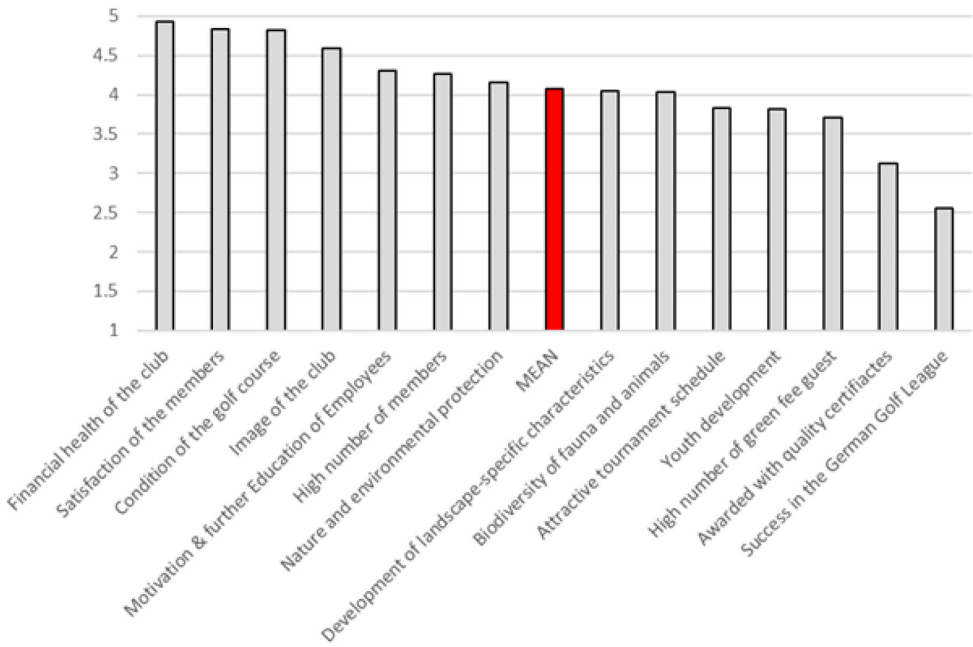

Figure 1 — Ranking importance of general objectives.

Table 2 Evaluation of General Objectives of Golf Courses

	Mean	Standard Deviation	Min	Max	Sign. of Differences by Clubs	Mean Certified Clubs	Mean Non-Certified Clubs
Financial health of the club	4.93	0.31	3	5	0.3316	4.94	4.90
High number of members	4.26	0.78	1	5	0.8251	4.30	4.27
High number of green fee guests	3.71	1.08	1	5	0.2104	3.55	3.77
Satisfaction of members	4.84	0.41	3	5	0.5511	4.86	4.83
Success in the German Golf League	2.55	1.13	1	5	0.0000	2.96	2.15
Youth development	3.82	0.99	1	5	0.1762	3.97	3.70
Attractive tournament schedule	3.83	0.85	1	5	0.5683	3.78	3.80
Condition of the golf course	4.82	0.40	3	5	0.0543	4.88	4.75
Development of landscape-specific characteristics	4.05	0.93	2	5	0.1226	4.19	3.90
Nature and environmental protection	4.16	0.93	1	5	0.0003	4.42	3.86
Biodiversity of fauna and animals	4.04	0.98	1	5	0.0246	4.22	3.82
Image of the club	4.59	0.62	2	5	0.7530	4.59	4.56
Awarded with quality certificates	3.13	1.16	1	5	0.0000	3.64	2.61
Motivation & further education of employees	4,31	0.77	2	5	0.0663	4.43	4.20

Six out of the thirteen objectives identified in the study identified significant differences between certified and non-certified golf clubs. In addition to the sporting success achieved in the German Golf League and the motivation and education of club employees, significant group differences can be identified, especially in the case of environmentally relevant factors. Certified golf clubs rated these higher. In addition, for certified clubs, the target of holding quality certificates was significantly more important. With the exception of the condition of the golf course—albeit at high levels—there was no significant difference between the two groups.

Afterwards, the questionnaire examined the importance and influence of the *Golf&Natur* certificate for the achievement of selected economic and ecological objectives. Again, the influence was assessed using a 5-point Likert scale. Figure 2 shows the objectives according to their evaluated importance by means of a column graph. Again, the mean values of all targets considered were calculated and are displayed graphically (red bar). Participating golf courses perceived that the *Golf&Natur* certificate plays a key role in environmentally oriented goals. For targets that are managerially and economically oriented, they perceived the certificate as less important and consequently gave lower ratings on the Likert scale.

A mean value comparison between certified and non-certified golf courses revealed significant differences in all targets considered (see Table 3). This comparison was carried out by the Wilcoxon test to identify group-specific differences between the clubs.

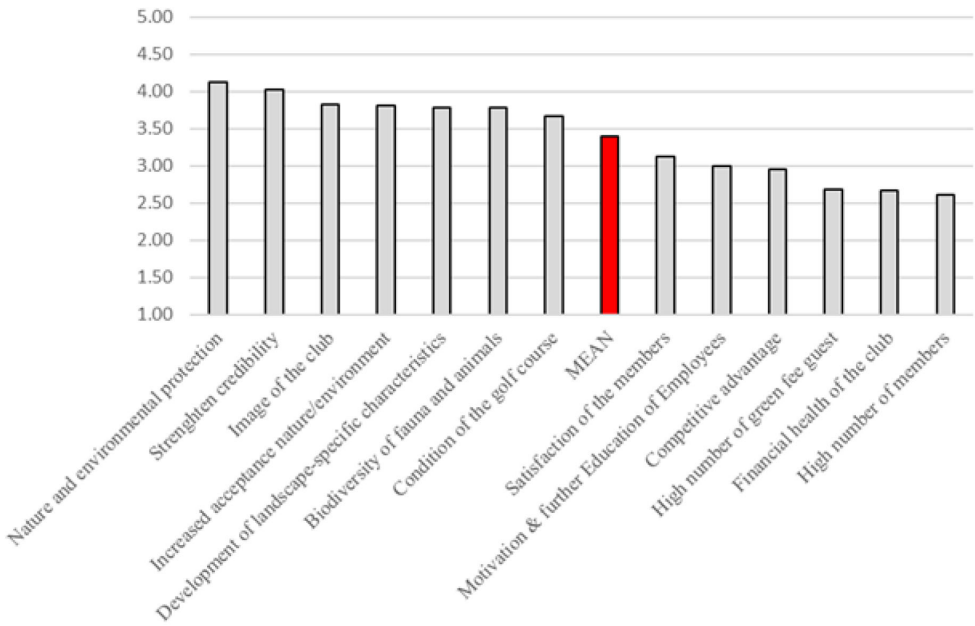

Figure 2 — Ranking mean values of the impact of the *Golf&Natur* certificate on selected objectives.

Table 3 Evaluation of the Impact of the Golf&Natur Certificate on Selected Targets

	Mean	Standard Deviation	Min	Max	Sign. of Differences by Clubs	Mean Certified Clubs	Mean Non-Certified Clubs
Financial health of the club	2.66	1.29	1	5	0.0079	2.93	2.37
High number of members	2.61	1.17	1	5	0.0022	2.91	2.31
High number of green fee guests	2.68	1.15	1	5	0.0366	2.83	2.46
Satisfaction of members	3.13	1.34	1	5	0.0020	3.46	2.75
Competitive advantage	2.95	1.34	1	5	0.0001	3.35	2.45
Condition of the golf course	3.67	1.29	1	5	0.0089	3.97	3.32
Development of landscape-specific characteristics	3.78	1.26	1	5	0.0003	4.20	3.34
Nature and environmental protection	4.13	1.15	1	5	0.0000	4.56	3.65
Biodiversity of fauna and animals	3.78	1.24	1	5	0.0009	4.12	3.37
Strengthen credibility	4.03	1.20	1	5	0.0000	4.46	3.55
Increase acceptance nature/environment	3.81	1.25	1	5	0.0008	4.16	3.42
Image of the club	3.83	1.25	1	5	0.0001	4.20	3.38
Motivation & further education of employees	2.99	1.25	1	5	0.0001	3.38	2.55

The *Golf&Natur* certificate is a driving force for achieving several objectives from the perspective of certified golf courses, in both ecological and economic terms. Thus, it can be stated that certified golf courses have a cross-section of the *Golf&Natur* certificate. However, the mean values for the ecological targets were higher than the economically shaped objectives, which were usually around the mean value of the 5-point Likert scale and therefore had a medium influence.

Table 4 shows, again by means of an average comparison, that certified golf courses that are a registered association (e.V.) have more members and offer a slightly higher number of holes. As expected, the *Golf&Natur* certificate is more important for certified golf courses than for non-certified ones. Not all clubs are convinced of the importance of an environmental certificate; however, those with the certificate also recognize clear benefits in different areas.

Finally, the certified and non-certified golf courses were asked group-specific questions. Certified golf courses perceived an increase in the use of human and financial resources, but the increase appeared to be minimal. The majority of the certified golf courses would participate in *Golf&Natur*'s certification process again. For non-certified golf clubs, the results demonstrate that all the reasons taken account – personnel, time and financial resources – influenced their decision not to participate. However, none of these can be identified as the main reason.

Table 4 Evaluation of the General Importance of the Certificate and Characteristics of the Golf Courses

	Sign. of Differences by Clubs	Mean Certified Clubs	Mean Non-Certified Clubs
Importance of holding the certificate Golf&Natur	0,0000	4,20	2,65
Legal form	0,0150	0,70	0,49
Number of club members	0,0002	789	627
Number of holes	0,0131	2,30	2,04

Conclusion

This study on the *Golf&Natur* certificate aimed to give insight into the certification of the German Golf Association from an ecological-economic perspective. It was of particular interest to determine the extent to which ecological factors, in comparison to managerial and economically oriented objectives, play a role in German golf clubs. In addition, the study examined the influence of the *Golf&Natur* certificate on the achievement of selected club targets, as perceived by the golf clubs. Of particular relevance was the comparison between certified and non-certified golf clubs.

In general, environmental protection and nature conservation are important topics in almost all golf clubs. Although economic objectives continue to play the most important role, which is unsurprising given the quasi-stagnating German

and European golf market (Craw & Dickson, 2018; Fischer & Kaiser-Jovy, 2018), ecological factors are somewhat more heavily weighted than sporting ones, such as the sporting success in the German Golf League (Huth, 2016). This result reflects, to some extent, the expectations of the golfers who seek clubs with the *Golf&Natur* certificate in the selection of a green fee round as a relevant decision criterion (Huth, 2017).

Although the *Golf&Natur* certificate takes into account a number of different characteristics and criteria, golf clubs add value to the certificate, especially with regard to ecological and publicly oriented aspects. The ranking of the mean values in Figure 2 shows the ecological and publicly effective aspects, such as the strengthening of the credibility of nature conservation organizations and of other stakeholders, of the *Golf&Natur* certificate more clearly than primarily economic aspects. Thus, the certificate breaks down previously described information asymmetries between golf clubs and their stakeholders, such as the critical general public and/or golfers (Briassoulis, 2010; Hartmann, 1988). Therefore, it helps to reduce the mentioned pressure of the critical general public regarding environmental issues of golf clubs. This result is also in line with Limehouse et al. (2010), who underline that there is a real demand for environmental quality in golf courses. The subsequent comparison of certified and non-certified golf courses showed that certified clubs rated the importance of the *Golf&Natur* certificate for all club objectives higher than non-certified clubs did. This result is in line with the aforementioned studies (Eltayeb et al., 2011; Fuerst & McAllister, 2010; Horvathova, 2012) that find that environmental engagements pay off. Additionally, this result suggests some satisfaction with the programme. However, some mean values are only in the mean range of approval of the 5-point Likert scale. The result is also supported by the fact that the majority of certified golf courses would again participate in the *Golf&Natur* certification process. Despite the cost, which includes certification (Palmer et al., 1995; Walley & Whitehead, 1994), an environmental certificate can add value to a golf club's diverse environmental and economic goals.

Overall, it can be stated that the *Golf&Natur* environmental certificate can create value in the ecological sector and—with cutbacks—the economic sector, especially from the perspective of certified golf courses. Thus, the certified clubs benefit not only in the environment context but also in club management, as Pröbstl (2009) and Bruhn (2013) underlined. Therefore, similar considerations and initiatives should be even more strongly considered in other golf markets or in other natural and resource-intensive outdoor sports. As mentioned, other near-natural and nature-intensive sport have already addressed this topic. Moreover, due to climate change and the associated need for additional resources, as mentioned above, winter sport must also implement environment-specific measures. An early example of this was the Austrian Alpine Association, with the *Bergsteigerdörfer* initiative in 2008. Integrated villages promote near-natural tourism without using resource-intensive sources, with technical development measures such as ski area extension, snowmaking or even fun parks in summer tourism (Alpenverein, 2017).

As mentioned at the outset, the legal component is also a key component of the *Golf&Natur* certification programme, especially due to the more restrictive environmental legislation. These aspects should also be considered in future studies. However, this study deliberately refrained from evaluating these criteria, as this would have spoiled

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