Types of professionalization: understanding contemporary organizational designs of Swiss national sport federations

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Abstract

Purpose – This study aims to identify types of professionalization in Swiss national sport federations (NSFs) and to analyze organizational characteristics associated with specific types of professionalization. Such types reveal common patterns among the increasingly complex organizational designs of NSFs and thus contribute to the understanding of professionalization in NSFs.

Design/methodology/approach – An online survey of all Swiss NSFs was conducted to identify types of professionalization in these organizations using hierarchical cluster analysis, based on a multi-dimensional framework of professionalization.

Findings – The analysis revealed four types of professionalization: formalized NSFs managed by paid staff, NSFs managed by volunteers and a few paid staff off the field, NSFs with differing formalization and paid staff on the field, and moderately formalized NSFs managed by volunteers. The types differ in terms of the NSFs' organizational characteristics, in particular, size, financial resources, Olympic status, and performance.

Originality/value – Applying factor and cluster analysis is a new approach to analyzing professionalization in NSFs that makes uncovering distinctive organizational patterns among a large number of NSFs possible. These results lay the foundation for understanding the professionalization of NSFs, counseling NSFs on their organizational development, and conducting future research on the design types of sport organizations.

Keywords Design type; organizational characteristics; factor analysis; cluster analysis

Article classification Research paper

Introduction

National sport federations (NSFs) have been facing ever-growing organizational requirements for many years. These requirements, including the need for strategic planning, service orientation, and quality management, have created a process of professionalization– that is, a "transition from an amateur, volunteer-driven pastime to a more business-like sector" (Shilbury and Ferkins, 2011, p. 108). However, becoming more professionalized may not meet the needs of all organizations and the NSFs may have developed different forms of professionalization given their particular organizational characteristics and goals (Nagel *et al.*, 2015; Ruoranen *et al.*, 2016). Although recent studies have investigated the professionalization of NSFs (e.g., Bayle and Robinson, 2007; O'Brien and Slack, 2003, 2004; Shilbury and Ferkins, 2011), to date, the specific organizational designs of NSFs remain relatively unknown. Therefore, this study examines contemporary organizational designs of NSFs by identifying so-called *types of professionalization.* Such types contribute to understanding the professionalization of NSFs by revealing common patterns in the NSFs' increasingly diverse organizational designs. Understanding the professionalization and organizational designs of NSFs is important to ensure appropriate controlling of NSFs' organizational development. Thus, classification of NSFs into types of professionalization and information on how these types are organized may support the work of the umbrella organization as well as NSFs' directors.

Previous research has already recognized the benefits of exploring design types to understand organizational designs and professionalization in NSFs (Kikulis *et al.*, 1992, 1995). However, existing studies applied theoretical approaches, qualitative measures, or quantitative measures with limited focus. The methodological approach of this study, using cluster analysis, makes it possible to examine multiple dimensions of professionalization in large groups of organizations. As a result, all NSFs in a country can be considered for

analysis and classified into types of professionalization, to set the basis for counseling NSFs regarding their organizational development. Furthermore, quantitative results about a type's specific forms of professionalization allow for identifying potential relationships between forms of professionalization (e.g., paid staff) and organizational characteristics (e.g., size, financial resources). Such relationships give reason to the identified patterns and contribute to the understanding of the nature of organizational designs and professionalization in NSFs. Furthermore, the analysis of multiple dimensions contributes to a more differentiated understanding of organizational designs in NSFs.

Following Dowling *et al.*'s (2014) call to conceptualize professionalization more broadly and systematically, Ruoranen *et al.* (2016) developed a multi-dimensional conceptualization of *organizational professionalization*. This framework builds the conceptual basis of this study. Organizational professionalization considers the employment of paid staff and the changes caused by this process, such as the implementation of management instruments, formalized documents, and strategic planning (Dowling *et al.*, 2014). Applying factor and cluster analysis shall contribute to the conceptualization of professionalization in two respects: first, to evaluate the utility of the proposed dimensions and subcomponents to identify types of professionalization; and second, to explore specific factors that have the potential to identify distinctive types of professionalization.

The aim of this study is to identify types of professionalization in Swiss NSFs by applying hierarchical cluster analysis to all Swiss NSFs. Swiss NSFs and the umbrella organization, Swiss Olympic, are independent of the state, according to the traditional idea of subsidiarity and autonomy. This means that Swiss sports have no overall sport policy and follow instead a liberal model, which leaves room for own decisions and initiatives. Swiss Olympic and the NSFs undertake actions and solutions to problems independently and autonomously. This system brings about an autonomous organizational development of Swiss

NSFs (Bayle, 2017; Chappelet, 2010; Nagel and Adler Zwahlen, 2016), and as such, the NSFs are likely to develop various organizational forms and to differ in professionalization. Accordingly, the study asks a first question: *which types of professionalization exist in Swiss NSFs?* To understand the emergence of the identified types and to validate them externally, organizational characteristics suggested in Nagel *et al.*'s (2015) multi-level model of professionalization are examined (e.g., size of NSF, financial resources, Olympic status). Accordingly, the second research question is: *how do the identified types differ with respect to the NSFs' organizational characteristics?* Performance measurements aim to uncover the consequences of specific types of professionalization.

Literature review

NSFs are typically structured as non-profit organizations (NPOs). NPOs follow a non-profit mission with the main aim to serve members and participants and, as such, may receive financial support from the government. In contrast with for-profit organizations (FPOs), NPOs do not return profits to their owners or directors (non-distribution constraint). Thus, FPOs have incentives to generate profit, whereas the objectives of NPOs are mission-related. However, NPOs may still be interested in generating a financial surplus to re-invest in the organization (Anheier, 2014; Tschirhart and Bielefeld, 2012). NPOs traditionally rely heavily on voluntary work. However, paid staff have taken on an increasingly important role in the non-profit sector, and both governance structures and management processes are becoming increasingly more "business-like" and "professional" (Hwang and Powell, 2009; Maier *et al.*, 2016). Consequently, mixing the idealtypical characteristics with those of the private and public sector has become increasingly prevalent in NPOs, leading those NSFs to be called "hybrid organizations" (Brandsen *et al.*, 2005; Lucassen and Bakker, 2016). As such, NSFs' organizational designs are becoming increasingly complex.

Notable efforts have been devoted to the development and elaboration of theories related to the ideas of design types in general management. The fundamental knowledge and findings on design types, on which initial attempts to investigate types of sport organizations rely, have mainly come from the works of Miller and Friesen (1984), Mintzberg (1979), Pugh *et al.* (1969), and Weber (1947). These authors have theoretically and empirically identified different structural and organizational designs outside the sport sector. Weber (1947) made the first attempt using simultaneously occurring attributes to describe "the ideal bureaucracy" (e.g., division of labor, clearly defined hierarchy, standardized and formalized rules and regulations). Mintzberg (1979) defined five design types that display various levels of bureaucratization and professionalization. These types are based on a theoretical approach and represent *ideal types*. Pugh *et al.* (1969) clustered 52 organizations and, based on the concept of bureaucratization (i.e., specialization, standardization, formalization, and centralization), identified seven *structural design types*. Miller and Friesen (1984) identified 10 types by considering variables of strategy, structure, information processing, and environment. These types are constructed empirically and represent most significantly a group of organizations. According to these fundamental works, design types can be generated on the basis of either theoretical approaches or empirical investigations.

In contrast with the multitude of studies analyzing change in sport organizations (e.g., O'Brien and Slack, 2003, 2004; Skinner *et al.*, 1999; Slack and Hinings, 1992; Thibault *et al.*, 1991), research on design types focuses on the differences between organizations rather than the development of single organizations. Such inter-organizational comparisons contribute to the understanding of the nature of different designs in sport organizations. For this purpose, Slack and Hinings (1987) developed a conceptual framework to identify *structural design types*, based on the structural dimensions of specialization, standardization, and centralization. Greenwood and Hinings (1988), however, deemed the analysis of these

structural aspects alone too narrow; instead, they suggested identifying *organizational design archetypes*, based on Miller and Friesen's (1984) approach. The idea of an archetype is that an organization operates within a limited number of configurations of structure, strategy, and environment that have a coherence or common orientation (Greenwood and Hinings, 1988). A coherent archetype represents the appropriate design for adequate performance. Thus, it is crucial to understand which archetype an organization is in.

To date, a few studies have used a quantitative approach to investigate structural design types (Kikulis *et al.*, 1989; Theodoraki and Henry, 1994), change in structural design types (Kikulis *et al.*, 1995; Slack and Hinings, 1994), or formalization of sport clubs (May *et al.*, 2013; Nichols and James, 2008; Nichols *et al.*, 2012; Nichols *et al.*, 2015). Nichols *et al.* (2015) analyzed three countries (the United Kingdom, Germany, and Australia) and revealed clusters ranging from informal to formal types of sport clubs. Other studies also focusing on formalization have examined implications for sport policy according to different types of sport clubs (May *et al.*, 2013; Nichols and James, 2008; Nichols *et al.*, 2012). Kikulis *et al.* (1989) identified eight clusters among 59 Canadian sport clubs, from the simple structure type to the professional bureaucratic structure type, and Theodoraki and Henry (1994) identified six clusters among 45 British NGBs, from the specialized simple structure type to the machine bureaucracy type. Both these classifications applied Mintzberg's (1979) design types in an empirical study. However, these studies chose a relatively narrow scope of analysis by focusing on either formalization or structural designs. Thus, existing research might benefit from the application of this quantitative approach to analyze organizational design beyond organizational structure, for example, by applying a multi-dimensional concept of professionalization, which has not been used previously.

Besides those studies mentioned, research has generated design types using theoretical approaches or qualitative investigations analyzing literature, documents, and interviews (e.g.,

Fahlén, 2006; Kikulis *et al.*, 1992; Macintosh and Whitson, 1990). Macintosh and Whitson (1990) summarized their analysis in a traditional archetype, which opposes professional staff autonomy, and a corporate volunteer archetype, which supports professional management and governance. Fahlén (2006) analyzed interviews and documents of 11 sport clubs to demonstrate the variety in structural designs rather than identifying types. Kikulis *et al.* (1992) provided the most commonly used design types to date. An extensive review of the literature and documents of national sport organizations, based on the concept of organizational design archetypes by Greenwood and Hinings (1988), revealed three specific design archetypes: the kitchen table design archetype, the boardroom design archetype, and the executive office design archetype. Several researchers have applied Kikulis *et al.*'s (1992) types to analyze change types (Kikulis *et al.*, 1995; Slack and Hinings, 1994) and strategic change (Amis *et al.*, 2004) or to legitimize their studies, for example, on governance structures (Král, 2014) or organizational performance (Bayle and Robinson, 2007). Kikulis *et al.*'s (1992) types are broadly analyzed and insightfully described. However, when the goal is to classify a large number of organizations, quantitative methods are unavoidable and may complement existing results in terms of theoretical advancement and practical implications.

Conceptual background

Conceptual framework to measure professionalization in NSFs

Ruoranen *et al.* (2016) conducted an extensive literature review and synthesized concepts of professionalization from the sport sociology and management literature, as well as information attained from expert interviews with key individuals of Swiss sport, into a conceptual framework of professionalization. This framework relies on the three basic dimensions of conceptualizations used by Bayle and Robinson (2007), Legay (2001), and Nagel *et al.* (2015) (i.e., the professionalization of *strategies and activities*, *structures and*

processes, and *people and positions*). The three dimensions and the subcomponents

considered in the framework of Ruoranen *et al.* (2016) (Figure 1) build the basis for

investigating the organizational designs of NSFs and help differentiate relevant types of

professionalization in this study. The NSFs' culture, as an underlying factor, was thereby

beyond the scope of this research for reasons of measurability and practicability with cluster

analysis.

[Figure 1 about here]

The components allocated to the strategies and activities dimension describe the

orientations of "business-like" or "for-profit-like" organizations. The NSFs' philosophies

tend to shift to (long-term) strategic planning, efficiency, market and service orientation, and

quality improvement. Some NSFs apply external knowledge and counseling (knowledge

orientation). The development of partnerships and offering support to member organizations

(service performance) may further describe professionalizing NSFs (Ruoranen *et al.*, 2016).

The extent to which this shift takes place may differ depending on the goals of an NSF.

Strategic orientations are therefore important to incorporate because they may make the types

of professionalization consistent and reasonable. Regarding the second dimension, structures

and processes, structural differentiation (e.g., hierarchy, allocation of competences),

regulations in processes (ways of communication, routines in decision-making), and the

availability of formal concepts (e.g., HR concepts, communication concepts) and

management tools (e.g., communication tools, financial reporting) indicate the

professionalization of NSFs with respect to structures and processes (Ruoranen *et al.*, 2016).

The third dimension, people and positions, addresses professionalization in terms of the

employment of paid staff and the relationship between paid staff and voluntary boards.

According to the literature reviewed by Ruoranen *et al.* (2016), Swiss NSFs differ in forms of professionalization in the three constituting dimensions (see Figure 1). In addition, research assumes that there are groups of NSFs with similar profiles of professionalization, due to common organizational characteristics (Nagel *et al.*, 2015). Thus, this study explores as a first research question which types of professionalization exist in Swiss NSFs. Studies examining differences in strategic orientations and goals of sport organizations are lacking (Ferkins *et al.*, 2005; Nagel *et al.*, 2015). However, sport organizations that avoid a professionalization orientation (see Figure 1) tend to have fewer paid staff employed (Cachay *et al.*, 2001). The pressure to employ paid staff in federations increases with higher work requirements and the need for higher expertise (e.g., in marketing, communication, or financing)–for example, to manage stakeholder relationships (Horch and Schütte, 2009). The hiring of paid staff, in turn, may increase the levels of formalization (Nichols *et al.*, 2015; Thibault *et al.*, 1991). In addition, the employment of paid staff can be off the field (e.g., in the executive office) or on the field (e.g., paid coaches), which may reflect the relevance of the sport sector in an NSF (Ruoranen *et al.*, 2016). Accordingly, the three dimensions of professionalization and its subcomponents may describe characteristic configurations of forms of professionalization. As such, the subcomponents appear interdependent (i.e., high/low levels of professionalization in specific subcomponents coming with high/low levels in other subcomponents). However, the propositions are unclear for medium levels of professionalization. The assumption is that the subcomponents can be developed differently and do not necessarily have the same level of development within a specific type of professionalization (Nagel *et al.*, 2015; Ruoranen *et al.*, 2016). Thus, the purpose of this research question is to exploratively identify distinctive types of professionalization representing these specific configurations.

Relationship between forms of professionalization and organizational characteristics

Nagel *et al.* (2015) reviewed current sport management literature on causes, forms, and consequences of professionalization and categorized the findings into three levels: the level of the NSF, the external environment, and the internal environment. To understand contemporary organizational designs, this study focuses on forms of professionalization and the level of the NSF. According to the multi-level model of Nagel *et al.* (2015), the NSFs' forms of professionalization may be related to their organizational characteristics, such as the size of the organization, its financial resources, the type of sport, and the performance (Nagel *et al.*, 2015). Accordingly, these characteristics are likely to differ between the types of professionalization and thus are used herein both to describe the types more precisely and to validate them externally. In addition to the multi-level model of Nagel *et al.* (2015), the situational approach (Kieser, 2006) assumes that intra-organizational factors (situational factors) are relevant to the strategies of organizations and, consequently, to their professionalization processes. These situational factors could be size, financing structure, economic situation, age, and characteristics of the sport. Therefore, the second research question explores how the identified types of professionalization differ in terms of the NSFs' organizational characteristics.

It can be assumed that larger organizations are more likely to have a higher proportion of paid staff (Seippel, 2002) and formalization of management processes (May *et al.*, 2013; Nichols and James, 2008; Nichols *et al.*, 2015). The financial resources are also expected to correlate with the number of paid staff employed (Horch and Schütte, 2009; Seippel, 2002). Horch and Schütte (2009) found that the pressure to employ paid staff was highest for federations of top-level sports because of the necessity for extensive cooperation with sponsors and the need to employ paid coaches. According to Bayle and Robinson (2007), the financial income has an impact on the potential performance of an organization. In

connection with the second research question, it is assumed that the more highly

professionalized types of NSFs are characterized by larger size and considerable financial

resources, while less professionalized types may show contrary organizational characteristics.

The highly professionalized types are also likely to have better performance than less

professionalized types. While the propositions are relatively clear for both highly

professionalized and less professionalized types, no clear proposition is possible for

moderately professionalized types, which are assumed to have different levels of

professionalization in each subcomponent (see research question 1). Thus, this research

question aims both to confirm the assumptions about highly professionalized and less

professionalized types and to explore plausible patterns of moderately professionalized types.

Method

Sample

The umbrella organization of Swiss NSFs, Swiss Olympic, conducts a nationwide

representative panel study on sport clubs and NSFs every six years to obtain actual data on

the organizations' size, structures, services, and staff. With the cooperation of Swiss

Olympic, the items for this study were integrated into the online survey of Swiss NSFs (i.e.,

the headquarters of Swiss NSFs) to gather data on the NSFs' professionalization. The

directors of the NSFs were asked by Swiss Olympic to complete the questionnaire. The data

were collected from January to April 2016. All member organizations of Swiss Olympic ($n =$

85) were obligated to participate in the survey, so the response rate was 100%. Member

organizations of Swiss Olympic are the "traditional" NSFs that represent a particular sport

(n = 75) as well as foundations and associations with superordinate functions (n = 10; e.g.,

the Swiss Paraplegic Foundation, Swiss Hiking Trails, Friends of Nature Switzerland). The

latter organizations have different objectives (e.g., prevention of accidents in sports,

maintenance of sports facilities) and pre-conditions in terms of financial support (e.g., donations) than the traditional NSFs. Therefore, their inclusion was likely to distort the analysis of the traditional NSFs' types of professionalization, on which this study focuses, and thus were systematically excluded. Six more NSFs, which provided incomplete data, were excluded from the data analysis as well. Thus, the sample consisted of 69 NSFs (92%).

Measurement

The components considered for data collection were selected according to the focus on the NSF and their appropriateness for a quantitative survey. Regarding the professionalization of strategies and activities, the six potential orientations of NSFs mentioned in the conceptual framework of Ruoranen *et al.* (2016) were considered (see Figure 1). The components "partnerships" and "service performance" refer to the external environment of the NSFs and were not integrated. The directors of the NSFs were asked to estimate their federation's strategic orientation on a five-point Likert scale with 19 items. For theoretical considerations (Ruoranen *et al.*, 2016), these items were partly selected from the existing questionnaire of Swiss Olympic but largely constructed by the authors. Both the existing and the newly constructed items were based mainly on a similar investigation of German NSFs and sport clubs (Breuer, 2013a, 2013b). The structures and processes dimension could not be accurately measured, as proposed by Ruoranen *et al.* (2016) (Figure 1), because specific structures and processes are shaped differently in each NSF and thus not measurable or comparable in a quantitative analysis. Consequently, the formalization of structures and processes was analyzed, as in previous studies (e.g., May *et al.*, 2013; Nichols and James, 2008). Using 14 items and a three-point scale, the formalization was determined by asking the NSFs the extent to which specific instruments and documents existed in their organization. These items were constructed on the basis of theoretical considerations and

extant studies measuring formalization in sport organizations (e.g., Nichols and James, 2008).

To measure the professionalization of people and positions, the number of voluntary and paid

staff managing the NSF both *off the field* (management board, executive office, and

commissions) and *on the field* (coaches, supporting staff) was determined. Twelve positions

were defined as precisely as possible to optimize their comparability. The respondents were

asked to indicate the number of employees per position as well as the percentage by position

of paid staff in a formula. The latter was used to calculate the number of full-time

equivalents.

To describe the clusters in more detail, several organizational characteristics were

examined: size of the NSF (measured by the number of individual members in each NSF's

club and the individual members in the NSF if they were not members of a club), financial

resources (membership fees and funds from Swiss Olympic; recorded in CHF, the Swiss

currency), Olympic status (non-Olympic or Olympic sport), founding year, and performance

(classification by Swiss Olympic; rated from 1 [*low performance*] to 5 [*high performance*]).

The classification of performance considers mainly the success of elite and young athletes in

national and international competitions, but also the existence of a development concept for

young athletes, the economic relevance of the sport, and the national popularity of the sport

for active participants as well as spectators. Swiss Olympic uses this classification to

determine the amount of funds to provide to each NSF.

Data analysis

After measurement of both the strategies and activities dimension and the structures and

processes dimension using many variables, the data needed to be reduced for the purpose of

the subsequent cluster analysis. Thus, an exploratory factor analysis (EFA) with the

respective items was conducted using principal component analysis (PCA) and varimax

rotation, to identify appropriate cluster variables. The Kaiser-Meyer-Olkin measure (KMO)

indicated values well above the acceptable limit of 0.50 (Field, 2009) and verified the

sampling adequacy for an exploratory factor analysis in the strategies and activities

dimension (KMO = 0.61), as well as the structures and processes dimension (KMO = 0.75).

Bartlett's test of sphericity showed sufficiently large correlations between items for PCA

regarding strategies and activities (χ^2 (21) = 119.63, $p < 0.001$), and structures and processes

(χ^2 (66) = 282.94, $p < 0.001$). Kaiser's criterion (eigenvalues over 1) and the analysis of the

point of inflexion in the scree plot were considered to determine the number of extracted

factors. To measure the professionalization of strategies and activities, the factors *growth*

orientation and *service orientation* were identified, and explain 56.5% of the variance (Table

I); growth orientation refers to the importance of growth of the NSF (number of members)

and its financial resources, and service orientation refers to the importance of customer

service the NSF provides to member organizations. For the structures and processes of the

NSFs, the factors *formalization of strategy*, *formalization of marketing and communication*,

and *formalization of human resource management* (HRM) were determined. These explain

57.3% of the variance. With this factor structure, seven out of 19 items measuring strategies

and activities, and 12 out of 14 items measuring structures and processes, were retained

(Table I). The results of reliability analyses with Cronbach's alpha (for the factors) and the

corrected item to total correlations (for the single items) were generally acceptable (Table I).

Alpha values were above 0.70 and corrected item to total correlations were above 0.30 (Hair

et al., 2010; Schmitt, 1996), with the exception of the factors growth orientation ($\alpha = 0.62$)

and formalization of communication and marketin*g* ($\alpha = 0.69$). According to Hair *et al.*

(2010), Cronbach's alpha may decrease to 0.60 in exploratory research. However, it must be

noted that alpha values and some item-total correlations were only marginally above the

minimum requirements.

The variables measuring the professionalization of people and positions were generated according to the conceptual framework of Ruoranen *et al.*, as well as operationalization in previous studies (e.g., Cachay *et al.*, 2001). From that, three cluster variables emerged. First, the *absolute number of paid staff off the field* (management board, executive office, and commissions; in full-time equivalents), because it may determine the NSFs' organizational development and professionalization. Second, the *proportion of paid staff on the field* (coaches, supporting staff) in relation to paid staff off the field, because the distribution of paid staff is probably related to the NSF's objectives, particularly the relevance of sporting success. Finally, the *proportion of voluntary staff* in relation to paid staff (off and on the field), because this is a commonly used indicator of non-professionalized sport organizations (details on cluster variables in Table I). Because a factor analysis was not practicable for this dimension, correlations between the variables were tested using Spearman's rank order correlation for non-normally distributed data. Furthermore, correlations with the factors of the other dimensions were tested to verify the absence of strong correlations between the dimensions. Two critical correlations were identified; one between the absolute number of paid staff off the field and the proportion of voluntary staff ($r_s = 0.804$, $p < 0.001$), and another between the absolute number of paid staff off the field and the formalization of HRM ($r_s = 0.716$, $p < 0.001$). According to this, the number of paid staff off the field will influence the cluster analysis more than other aspects, as cluster analysis is sensitive to correlating factors.

[Table I about here]

The cluster variables were included in the subsequent hierarchical cluster analysis based on Ward's algorithm and squared Euclidean distances. The hierarchical procedure was

chosen because it does not demand the number of clusters a priori. Ward's algorithm (with squared Euclidean distances) was suitable for the analysis of this relatively small sample because of its tendency towards similar cluster sizes, which were required for further comparisons of the identified clusters. The inverse scree test and the dendrogram, as well as content criteria, were used to determine the optimal cluster solution. The quality of the cluster solution was examined with regards to interpretability, homogeneity within clusters, and stability in comparison with other agglomerative procedures and the k-means method. To compare the clusters and identify meaningful differences, z-scores were considered (Figure 2). Regarding the cluster variables measuring people and positions, absolute cluster means and standard deviations were added in the text for means of interpretability. For the other cluster variables, which are based on factor scores, this was not meaningful. The absolute number of paid staff off the field is a count variable and may therefore come along with larger standard deviations. However, this variable is deemed to be important when measuring professionalization and the procedure using cluster means is still seen as the best alternative to describe the clusters in this case (Tabachnick and Fidell, 2013).

Organizational characteristics of the NSFs were examined using descriptive analysis to further describe the identified clusters. Significance analysis was not meaningful because of the complete inventory with a high response rate. The variables of size and financial resources indicated a skewed distribution of scores. These results are reported using medians instead of means, and interquartile ranges instead of standard deviations, to provide more precise information. As the types are expected to differ in their organizational characteristics, these analyses are considered as indicators of the external validity of the cluster solution.

Results and discussion

Optimal cluster solution

The inverse scree plot did not indicate a particular cluster solution, but according to the dendrogram, the three-, four- or five-cluster solutions appeared to be promising alternatives. A closer examination of the data regarding interpretability resulted in the choice of four clusters. In the three-cluster solution, clusters 2 and 4 would have formed one cluster. However, these two clusters differ remarkably regarding the formalization of instruments and documents, as well as the number of paid staff off the field. A five-cluster solution would have meant splitting cluster 4 into two more clusters with just slight differences, and one of them would have contained only four NSFs.

The four-cluster solution shows meaningful differences between the clusters. The F-values measuring the homogeneity are acceptable, as most of them are below the critical level of 1 (Schendera, 2010). The homogeneity was reduced by the factor proportion of voluntary staff ($F = 1.38$) in cluster 1, service orientation ($F = 1.14$) in cluster 2, the proportion of voluntary staff ($F = 1.20$) and the absolute number of paid staff off the field ($F = 2.18$) in cluster 3, and service orientation ($F = 1.13$) in cluster 4. Because the heterogeneous factors differ between each cluster, no intervention was required. The stability of the cluster solution is fairly low when testing different cluster algorithms (other agglomerative procedures and k-means method) and examining the allocation of the NSFs to the clusters, due to some exceptional cases forming very small clusters. However, the cluster centers remain similar, and another algorithm would generate a similar interpretation of the clusters.

Types of professionalization

Four types of professionalization were identified and labelled according to the peculiarities of the respective forms of professionalization (see Figure 2).

Cluster 1: *Formalized NSFs managed by paid staff* ($n = 14$; 20.3%). These NSFs show a high degree of formalization compared to the other types, and growth orientation is most

important to these NSFs. They have a relatively low proportion of voluntary staff ($M = 0.60$, $SD = 0.26$) and by far the highest number of paid staff off the field ($M = 21.40$, $SD = 16.68$). Almost one third of the paid staff work on the field ($M = 0.29$, $SD = 0.18$). Examples are the Swiss Football Federation and Swiss Ski.

Cluster 2: *NSFs managed by volunteers and a few paid staff off the field* ($n = 13$; 18.8%). These NSFs show formalization scores well above the average, although they are managed mainly by volunteers ($M = 0.91$, $SD = 0.08$). The fact that these NSFs have a few paid staff off the field ($M = 3.65$, $SD = 6.08$) makes a remarkable difference to NSFs managed almost exclusively by volunteers. However, the number of paid staff varies within this cluster and the cluster label was therefore chosen carefully. These NSFs are far less growth-orientated than those in the other types. Examples are Swiss Archery and Swiss Underwater Sports.

Cluster 3: *NSFs with differing formalization and paid staff on the field* ($n = 17$; 24.6%). The high proportion of paid staff on the field ($M = 0.62$, $SD = 0.23$) mainly characterizes these NSFs. According to this result, there are more paid staff working on the field than off the field ($M = 2.66$, $SD = 2.83$) in these NSFs. The formalization of structures and processes differs within these NSFs, as formalization of marketing and communication is least developed, but formalization of HRM is above average. Service orientation is most important to these NSFs. Examples are Swiss Rowing and Swiss Fencing.

Cluster 4: *Moderately formalized NSFs managed by volunteers* ($n = 25$; 36.2%). These NSFs are almost exclusively managed by voluntary staff ($M = 0.98$, $SD = 0.04$). They have an average of only one paid employee off the field ($M = 1.01$, $SD = 3.33$) and no paid staff on the field ($M = 0.01$, $SD = 0.03$). The formalization of structures and processes is below average throughout. In particular, the formalization of HRM is considerably lower than in

other types. However, growth orientation is above average. Examples are the Billiards

Federation, Street Hockey Federation, and the Boxing Federation.

[Figure 2 about here]

When comparing the identified types with the most commonly used ones of Kikulis *et al.* (1992), cluster 1 is most comparable to the executive office design archetype and cluster 4 to the kitchen table design archetype. Clusters 2 and 3 lie in between these and represent kinds of boardroom design archetypes. However, the identified types complement the results of Kikulis *et al.* (1992), as well as those of other research (e.g., Macintosh and Whitson, 1990; May *et al.*, 2013; Nichols and James, 2008; Nichols *et al.*, 2012; Nichols *et al.*, 2015), by showing that within the different types of professionalization, the analysed subcomponents have different levels of professionalization. The NSFs of cluster 3, for example, focus on service orientation, growth, and paid staff on the field, but not on formalization of instruments and documents. Consequently, it is not possible to determine whether cluster 2 or 3 is "more professionalized". They simply exhibit different types of professionalization. Thus, the results confirm the assumption of more diversified profiles of professionalization within the types than an overall "judgmental" level of professionalization, particularly for moderately professionalized types, thus differing substantially from previous results (e.g., Kikulis *et al.*, 1992) (first research question).

Organizational characteristics and validation of the identified types

The results regarding organizational characteristics in Table II indicate that the formalized NSFs managed by paid staff (cluster 1) are by far the largest, have more financial resources than other NSFs, and represent Olympic sports almost exclusively. Swiss Olympic rates the

performance of NSFs in cluster 1 the highest. The NSFs managed by volunteers and a few

paid staff off the field (cluster 2) have scarce financial resources for such mid-sized

federations. Just one of these NSFs represents an Olympic sport, and their classification by

Swiss Olympic is quite low. The NSFs with differing formalization and paid staff on the field

(cluster 3) are rather small but have more financial resources available than other NSFs of

similar size. These NSFs represent most often an Olympic sport, and are rated fairly highly

by Swiss Olympic. The moderately formalized NSFs managed by volunteers (cluster 4) are

small with scarce financial resources, and only a few of them represent an Olympic sport.

They are rated as low as those in cluster 2 by Swiss Olympic. The analysis of the founding

years showed that the formalized NSFs managed by paid staff (cluster 1) tend to be older (M

$= 1917$, $SD = 50$), whereas the NSFs of clusters 2 to 4 show founding years between 1936

and 1948 (mean).

[Table II about here]

        The forms of professionalization found in the different types of NSFs can be explained

and understood using their organizational characteristics (see Figure 2 and Table II). Larger

NSFs (clusters 1 and 2) are more likely to have paid staff off the field and to have formalized

instruments and documents than smaller NSFs. This result conforms with previous findings

(e.g., May *et al.*, 2013; Nichols and James, 2008; Seippel, 2002; Thibault *et al.*, 1991) and

can be explained by the need for formalization in large organizations as well as for paid staff

off the field for administration purposes. However, a high level of formalization requires

neither high financial resources nor necessarily a high number of paid staff off the field. A

certain amount of financial and human resources appears sufficient (see cluster 2) and the

quality of the staff might be as relevant as its number (see also Seippel, 2002). Financial

resources appear necessary to employ paid staff (see clusters 1 and 3), as Horch and Schütte

(2009) and Seippel (2002) also found. The types containing smaller NSFs (clusters 3 and 4)

exhibit differing levels of formalization in terms of the three subcomponents. The difference

in the formalization of HRM is probably related to the presence of paid staff (off and on the

field). Accordingly, HRM may require formalization when paid staff are employed in an

NSF. This result complements the findings of existing studies that analyzed formalization

(Nichols *et al.*, 2015; Thibault *et al.*, 1991).

As the identified types do not represent ideal types, some specificities are not quite

plausible and could probably be improved. The moderate formalization of marketing and

communication instruments in cluster 3, for example, is probably related to the high

proportion of paid staff on the field, which reflects a focus on high-performance sports rather

than on marketing and communication. However, the NSFs in cluster 3 might benefit from

increased formalization of marketing and communication (Bayle and Robinson, 2007). The

notably lower growth orientation of NSFs in cluster 2 might be due to the already relatively

large size of these NSFs, which makes further growth a lesser priority. However, these NSFs

could also benefit from a larger size (e.g., increased income from membership fees).

The types' organizational characteristics support the proposition of the second research

question that types containing large NSFs with a solid financial basis (cluster 1) tend to

exhibit higher professionalization and types containing small NSFs with scarce financial

resources (cluster 4) lower professionalization. However, for the moderately professionalized

types (clusters 2 and 3), large size does not necessarily come with high financial resources.

Financial resources are dependent on the classification of Swiss Olympic and apparently are

also related to Olympic status (see Table II). Overall, Olympic NSFs reach higher values in

Swiss Olympic's classification, which means that they tend to be more successful in sporting

competitions and have a higher relevance in Swiss sports than non-Olympic NSFs (see

criteria for Swiss Olympic's classification in the measurement section). Consequently, they receive more funding from Swiss Olympic. Furthermore, these NSFs are probably more attractive to sponsors, which may further contribute to their higher financial resources. Aside from differences in financial resources, the demands and expectations of athletes, coaches, and stakeholders (e.g., sponsors) in small NSFs oriented toward high-performance sports (cluster 3) may push them towards professionalization, as Horch and Schütte (2009), Ruoranen *et al.* (2018), and Kikulis *et al.* (1992) also found. This may explain why the NSFs of cluster 3 are smaller but have more financial resources available than those of cluster 2. The availability of financial resources, in turn, may promote professionalization (Cachay *et al.*, 2001; Ruoranen *et al.*, 2018), in this case particularly regarding paid staff on the field (cluster 3). These findings disprove the common perception of "the larger, the more financial resources, the more professionalized" by showing that these characteristics do not necessarily come along with one another. Instead, size seems to matter more for formalization and financial resources for professionalization of paid staff (off or on the field), but not necessarily vice versa.

Swiss Olympic classifies the mainly non-Olympic NSFs in clusters 2 and 4 lower. Thus, they receive less financial support and need to find other organizational solutions, which appear to result in different types of professionalization. However, although the Olympic status appears highly likely to determine professionalization, it is not necessarily required. Swiss Orienteering stands as the most obvious example of a non-Olympic NSF in cluster 3, which is rated high by Swiss Olympic (four of five points) despite missing Olympic status, most likely due to the Swiss athletes' success in international competitions. This result, in turn, indicates the importance of designing types of professionalization instead of simply classifying NSFs according to organizational characteristics.

According to the identified configurations in the four clusters, there is no "best" type of professionalization, but it should be in accordance with the organizational characteristics of an NSF. Clusters 2 and 4, for example, show that different types of professionalization can perform equally, as they are classified the same by Swiss Olympic. The external validation of the clusters is satisfactory, as the type's forms of professionalization can be explained and understood using organizational characteristics (size, financial resources, Olympic status, and performance). Thus, the organizational designs are coherent.

Conclusions for the concept of professionalization

The conceptualization of professionalization by Ruoranen *et al.* (2016) is useful for uncovering types of professionalization because the identified types can be explained using organizational characteristics, which makes them coherent (external validation). The results indicate that the strategies and activities dimension is less useful for distinguishing types of professionalization in NSFs than either the structures and processes dimension or the people and positions dimension. The pursuit of Swiss Olympic's interests may lead to the strategic approximation of the NSFs in this case, though the NSFs are not obligated to follow any standards. Such approximations, which previous studies have also observed (e.g., Edwards *et al.*, 2009; Slack and Hinings, 1994), could be related to the theory of institutional isomorphism (DiMaggio and Powell, 1983).

Measuring structures and processes quantitatively is difficult because of missing standardization. Regarding this dimension, the concept is better suited to analyzing single organizations. However, analyzing the formalization of structures and processes proved to be an adequate alternative. The exploratively generated subdivision among the formalization of instruments and documents is valuable because it reveals distinctive configurations within this dimension that characterize moderately professionalized types. These patterns of

formalization are also related to the people and positions dimension and the size of the NSFs. Nevertheless, conclusions about the professionalization of structures and processes must be made carefully when measuring them by formalization alone. Regarding the people and positions dimension, the differentiation between paid staff off and on the field, which was newly incorporated in the framework of Ruoranen *et al.* (2016) and applied in this study, proved particularly important when identifying types of professionalization in NSFs because it mainly characterizes cluster 3.

Limitations and future research

The conceptual framework of Ruoranen *et al.* (2016) was useful for the explorative approach of this study, but the operationalization requires further development. The items and factors measuring strategies and activities as well as structures and processes need to be further developed and tested using a larger sample, to further improve the reliability of analysis. The methodical instrument, a standardized questionnaire, entailed some difficulties. Single parts of the questionnaire required subjective estimations by the individuals responding to the questionnaire, mainly regarding the items measuring the NSFs' strategic orientation. These do not necessarily coincide with the actual strategy or the strategy another person within the same organization would describe. The number of volunteers in an NSF is difficult to measure and compare between NSFs because their working hours are usually not recorded. Furthermore, a standardized survey is unable to measure certain forms of professionalization, such as the allocation of competences or the quality of staff, thus resulting in a selective adoption of the conceptual framework. Consequently, the results provide a basic classification, which must be interpreted carefully by researchers and practitioners. The types should be further investigated in terms of these missing aspects through the use of complementary methods of qualitative research (e.g., case studies). The types indicating

lower professionalization in this classification would likely prove to have other assets, such as highly motivated and experienced staff. Furthermore, it must be noted that the results of cluster analysis are dependent on the choices the researcher makes (e.g., cluster procedure, distance measure, optimal cluster solution) and cannot be taken as the only possible cluster solution. Weighting the number of paid staff off the field higher and the strategic orientations lower in cluster analysis should not be problematic, because these represent their respective importance in practice. Despite a high response rate and, thus, representativeness for the Swiss sport system, the profiles of the types may not necessarily be applicable to other countries because of differences in the national sport system (e.g., subsidy system, national popularity of a sport). However, the main message is transferrable to practice, regardless of context: common types of professionalization can be identified despite the NSFs' organizational uniqueness, the identified patterns of professionalization are independent of a judgmental level of professionalization, and organizational characteristics are relevant for understanding organizational designs and for defining the capabilities and limits of an NSF.

The identification of such fundamental types of professionalization builds the basis for future research. This cross-sectional study provides only a snapshot; it is not capable of considering processes of professionalization (e.g., the processes that led to the forms of professionalization observed in Swiss NSFs). A follow-up study could investigate how the professionalization of NSFs develops over time (e.g., if it shifts from one type to another), as well as the influence of organizational characteristics. As such, future research should include the analysis of the NSFs' culture, as well as influences from the internal and external environment, in addition to the level of the NSF (Nagel *et al.*, 2015). Furthermore, similar analyses in different countries would contribute to the generalizability of the results. The analysis of performance should be more differentiated, considering not just the classification by Swiss Olympic, to determine the consequences of each type of professionalization more

broadly. Swiss Olympic's classification follows transparent and measurable criteria; however, the criteria are set according to what is most important to Swiss Olympic. When analyzing, for example, the satisfaction of member organizations, the less professionalized types would possibly perform better than the more professionalized ones. Consequently, because Swiss Olympic's classification determines the funding the NSFs receive, the choice of these criteria has an indirect influence on the types of professionalization because financial resources are fundamental to professionalization (Cachay *et al.*, 2001; Ruoranen *et al.*, 2018).

Managerial implications

The view of "professionalization" as the desired development for every sport organization is common among practitioners. However, the results of this study indicate that more professionalization in each of the measured components is neither necessary nor possible for all NSFs. Instead, there are multiple types of professionalization, each of which has developed specific aspects. Smaller NSFs focusing on high-performance sports have paid staff on the field and, consequently, formalized HRM. By contrast, small non-Olympic NSFs with nearly no paid staff have more formalized marketing and communication instruments rather than a formalized HRM; as such, formalization is realizable for these NSFs despite having few paid staff off the field. Only the large Olympic NSFs exhibit holistic professionalization, particularly high levels of formalization of instruments and documents and paid staff off and on the field. Accordingly, the identification of plausible patterns in the NSFs' organizational designs helps elucidate their professionalization, thereby enabling to control their organizational development in line with their possibilities.

The identified types provide a classification that could help Swiss Olympic consult Swiss NSFs more effectively by addressing their respective profiles of professionalization specifically. Therefore, the types need to be evaluated by Swiss Olympic to determine

improvement opportunities, as they may not necessarily represent ideal types (e.g., raising the question whether low levels of formalization of marketing and communication are appropriate for NSFs in cluster 3). In addition, the results provide information for the NSFs themselves about their organizational set-up and differences from other NSFs of the same type, which may help managers purposefully develop the NSF by defining objectives in the professionalization process more precisely. In this sense, the results reveal how NSFs can handle the complexity of organizational designs and their development opportunities and, in doing so, reduce the risk of undesirable development. In controlling NSFs' process of professionalization, Swiss Olympic needs to be aware that the funding system, particularly the definition of the criteria for the NSFs' classification, has an impact on NSFs' professionalization. The same occurs in funding systems in other countries.

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Table I.

Measurement and descriptive statistics of cluster variables

Dimension Cluster variable	Item	Factor loading[a]	Corrected item-total correlation
Professionalization of strategies and activities			
	How important is it for your federation in the near future to…[b]		
Growth orientation	…generate more sponsorship funds?	0.83	0.60
($\alpha = 0.62$)	…gain new members?	0.66	0.32
	…achieve more earnings?	0.64	0.48
Service orientation	…optimize the federation's processes?	0.87	0.72
($\alpha = 0.72$)	…professionalize the federation and its services?	0.72	0.49
	…optimize the federation's structures?	0.70	0.47
	…be a service provider for the member organizations?	0.64	0.37
Excluded items	…improve strategic planning		
	…improve data management (member data/results of competitions)		
	…adapt the NSF's services to supply and demand		
	…improve employees' collaboration within the NSF		
	…improve employees' qualifications in the NSF		
	…reduce expenses or introduce economy measures		
	…raise membership fees		
	…broaden the existing sport program		
	…make the existing sport program more attractive		

...promote sport programs for non-members

...bring in external knowledge

...generate new ideas for the management of

   the NSF

Professionalization of structures and processes

	Do the following instruments/documents exist in your federation?[c]		
Formalization of strategy	Mission statement	0.75	0.52
($\alpha = 0.71$)	Strategy	0.74	0.53
	Multi-annual planning	0.71	0.56
	Controlling instrument	0.47	0.41
Formalization of marketing	Communication concept	0.72	0.58
and communication	In-house communication tool	0.65	0.50
($\alpha = 0.69$)	Concept of member support	0.65	0.37
	Marketing concept	0.63	0.44
Formalization of HRM	Job descriptions	0.84	0.60
($\alpha = 0.74$)	Staff regulations	0.78	0.59
	Remuneration regulations	0.63	0.32
	Contracts of employment	0.45	0.63
Excluded items	Organigram		
	Concept for voluntary staff		

Dimension		
Cluster variable	Measurement	

Professionalization of people and positions

Absolute number of paid staff off the field	Sum of paid staff off the field
Proportion of paid staff on the field	Number of paid staff on the field divided by the sum of paid staff off and on the field
Proportion of voluntary staff	Number of voluntary staff (off and on the field) divided by the sum of voluntary and paid staff (off and on the field)

[a] Only factor loadings above 0.40 were considered. [b] Scale: 1 (*very unimportant*) to 5 (*very important*). [c] Scale:

1 (*no*), 2 (*partly*), 3 (*yes*).

Table II.

Descriptive statistics of organizational characteristics of the four types of professionalization

Organizational characteristics	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Size of NSF (number of members)				
MD	60,244	5,673	3,910	1,959
P25	30,788	2,600	2,503	821
P75	147,695	20,156	13,581	4,560
Financial resources (CHF[a])				
MD	1,509,486	147,173	283,448	44,833
P25	920,403	46,667	143,777	31,333
P75	2,562,833	297,262	717,930	70,333
Proportion of Olympic NSFs				
%	93	8	82	16
Classification by Swiss Olympic[b]				
M	3.53	1.67	2.64	1.68
SD	0.87	0.52	0.91	0.69
Founding year				
M	1917	1940	1936	1948
SD	50	43	30	32

Note. $P25 = 25^{th}$ percentile; $P75 = 75^{th}$ percentile. Cluster 1 ($n = 14$; 20.3%) = Formalized NSFs managed by paid staff; Cluster 2 ($n = 13$; 18.8%) = NSFs managed by volunteers and a few paid staff off the field; Cluster 3 ($n = 17$; 24.6%) = NSFs with differing formalization and paid staff on the field; Cluster 4 ($n = 25$; 36.2%) = Moderately formalized NSFs managed by volunteers.

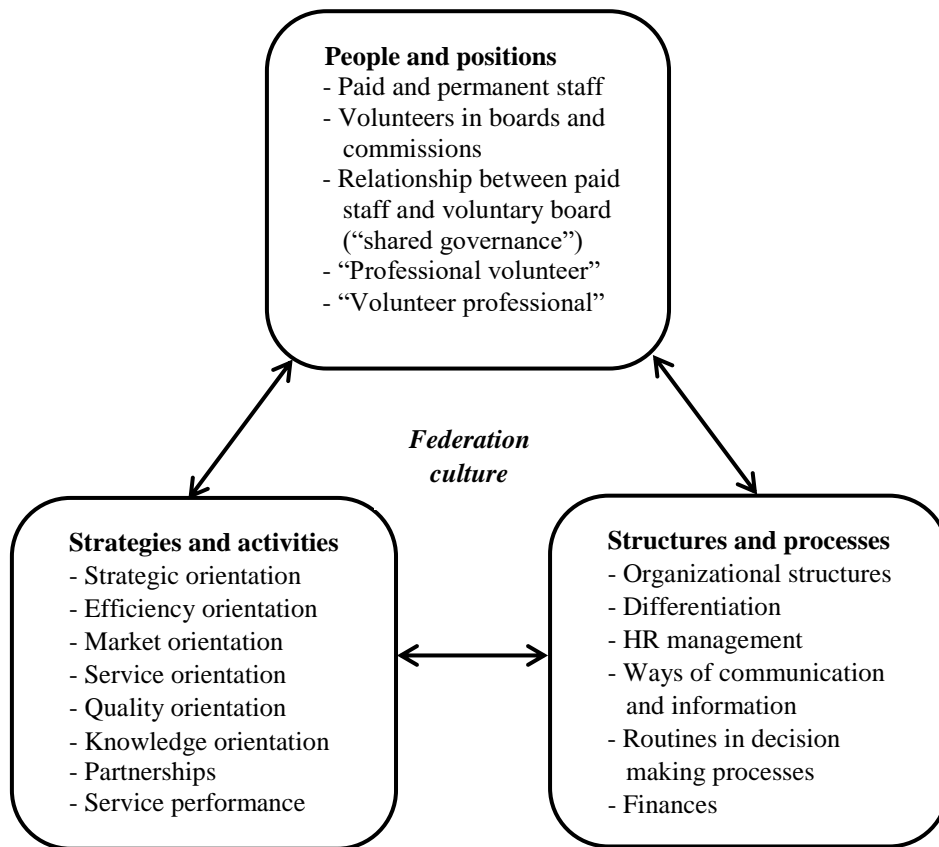[a]1 CHF = 1.02 US dollar (correct on 26 April 2018). [b]Scale: 1 (*low performance*) to 5 (*high performance*).

Figure 1.

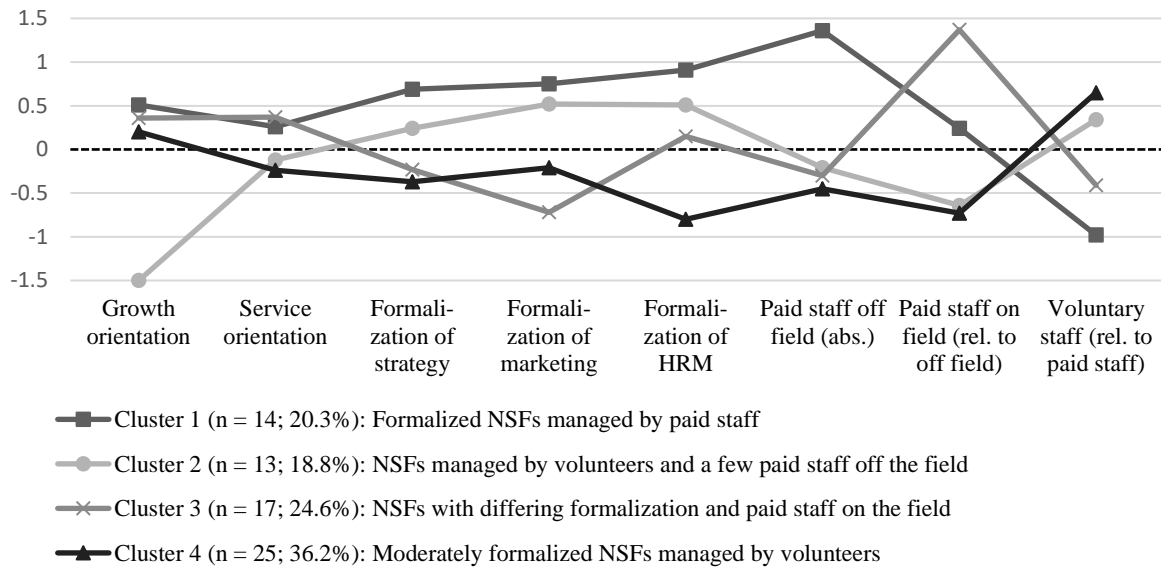A framework to analyze forms of professionalization in sport federations (Ruoranen et al., 2016)

Figure 2.

Cluster means of the four types of professionalization (z-scores)