

The role of community in exercise: Cross-cultural study of online exercise diary users

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ABSTRACT

This study investigates users of a newly launched website aimed at tracking exercise activities. The data was collected through an online questionnaire with 282 respondents. Three nationalities, Spanish, Germans and Americans, were compared, and the results show that their relation to community aspects of the service was significantly different. The Spanish showed most interest in collaboration and creation of new contacts, whereas Germans were the least interested in these activities. The finding may be explained by the differences of these national cultures along the individualism-collectivism dimension of Hofstede's cultural theory. Across the nationalities, the users were foremost motivated by using the website for promoting their individual goals in exercise.

Categories and Subject Descriptors

H.5.2 [User Interfaces]: User-centered design

General Terms

Human Factors, Design, Measurement.

Keywords

Social networking sites, online communities, exercising, health and wellness applications.

1. INTRODUCTION

The internet has become the most important medium for social networking and the exchange of information. Social media, that is, websites utilizing user-generated content, and websites aimed for social networking have become hugely popular. Current information technology that allows people to create, share and collaborate facilitates group formation, thus bringing people from different geographical locations and cultural backgrounds together around shared interests and activities. Popular forms of online social networks and communities include websites that are created for discussing and sharing information on a common interest or passion. For example, there are sites dedicated to pet-owners [11], body builders [28], and fans of certain music genres [3]. User-generated content is known to attract people and create traffic on a website and therefore features typical of social media have been utilized in the design of various websites. When there is a possibility for social interaction on a website, internet users tend

to spend more time on it, and become more involved with its activities.

The benefits of social media have also been recognized in the design of health and wellness applications. There has been an interest to motivate people to exercise more regularly, and adopt a healthier life-style by documenting, tracking and sharing their individual training data online [1,7]. Previous research on exercise related applications points out that they are mostly used for keeping a track of personal exercise, but needs for social sharing have been identified as well [1,19].

Even though research on cultural differences in the use of social networking sites is rare, there is evidence that cultural differences may have an impact on how they are used, and which features and aspects are preferred. Especially differences have been investigated between users from individualistic and collectivistic cultures [17,31]. However, the studies investigating cultural influence have concentrated on the use of general social networking sites like Facebook, and not on sites dedicated to a specific topic or interest which may inspire different use of the site.

Due to a lack of research investigating how online exercise communities are used in real life, this study investigates the usage and the perceived benefits of such a service, in order to add to the limited amount of research on the topic. The emphasis of the study is on identifying the role of cultural background generally in the use of the service, and in particular, its relation to interest to use features that enable community building.

The subject of this study is an online exercising diary and community called Movescount [23], a website that is open to everyone who has an interest in tracking their exercises. The research data was collected through an online survey that was targeted at users of Movescount from three different national backgrounds: Spanish, German and American. The total amount of respondents was 282. Our aims are to examine how the service is used as part of exercise routines, the role of community in this type of website, and whether there are differences in relation to privacy concerns and interest in sociability that may be explained by users' demographic backgrounds.

2. BACKGROUND

Groups formed online through site members' shared interests are often referred to as online communities of interest. They bring together people who interact extensively about a specific topic of interest or passion. Typically, interactions are focused on a specific area, and members do not share intensely personal information [2]. In recent years, there has been an explosion of new types of online communities referred to as social networking sites (SNS). Typically, social networking sites allow individuals to (1) construct a public or semi-public profile within a bounded

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system, (2) create a list of other users with whom they share a connection, and (3) view and navigate their list of connections and those made by others within the system [5]. The creation and maintenance of social relationships are essential for SNSs, hence technology is designed to facilitate networking and personalization of one's networks, for example, by being able to follow others, become friends, or include them in one's personal networks.

Current studies of social networking sites for the most part focus on two domains: professional networks and friendship networks [5]. Unlike friendship-based networks, such as Facebook or Friendster, that connect individuals who know each other in real-life context, passion-oriented networks tend to connect strangers around a common passion, and therefore the motivations to participate in the community are different. Usually, in passion-oriented networks people use nicknames and are partially anonymous, thus presenting only one side of their personalities [11,2]. When joining a website based on common interest we expect to meet people who share our interests, and this presumption of similarity is known to make other people more attractive [3,21]. Hence, online social networking is likely to lead to connections that might not form otherwise.

The success of social media has not gone unnoticed among companies. Online communities and networks can offer manufacturers of consumer products and services direct contact with customers. They allow customers to engage in a dialogue with companies, thus improving loyalty by committing customers to use products of a certain brand and manufacturer [26]. Therefore, when online communities grew in popularity worldwide, companies started to invest time and money in creating and maintaining their own sites. Online customer communities benefit companies in many ways: their members usually show high product interest and can support product development [25]. Organizations can also foster deeper buyer relationships by customizing their products and services to meet consumers' needs and demands better [2]. Customers can also benefit from participating in business-to-consumer communities, because they often seek for information and experiences of other customers before purchasing a product or service [2].

Technology has definitely facilitated the evolution of groups in the online context, however, using the term 'community' is deemed as somewhat controversial among scholars. There has been a debate among the researchers on the field of internet studies about the notion of community and whether such a traditional term is suitable to describe the new phenomenon of online interaction [34]. In addition, it has been questioned whether communities can flourish in a digital environment in which members are bound together through mere use of the site [3,30,9].

In his famous theory of social networking, Granovetter [12] states, that most of our interpersonal relationships are so called "weak ties", meaning relationships with people who are outside of our immediate network of friends and with whom we interact and get to know only briefly with a limited amount of emotion and investment. The internet has expanded our access to these weak ties, which are more likely to provide us with information and opportunities that are not available among the group of strong ties [12]. Thus connecting with weak ties through social networking sites can provide us with more specialized contacts with more people, and expand the range of resources available for us [4].

According to Wellman [33] during the last decades, there has been a shift from tightly-bounded communities constrained by geographical locale to "networked individualism" in which each person is a centre of his or her own community. As Miller [22] suggests, it may be more appropriate to talk about community as an ego-centric network of relationships, centered around oneself and one's interests, than as a set of people who all have things in common, a mutual interdependence, and share common beliefs.

2.1.1 Influence of culture on SNS use

Cultural background has been found to influence how we use and perceive technology, and Hofstede's cultural dimensions theory [14,15] has been found to be a useful tool to understand cultural differences [20]. It has been used as a reference in cross-cultural comparisons regarding SNS use as well [8, 17, 31].

Hofstede's theory provides five cultural dimensions in which countries (national cultures) can be ranked according to on how 'high' or 'low' they score on each of the dimensions. The dimensions are measured on a scale from 0 to 125. Cultures are characterized by power distance, individualism vs. collectivism, uncertainty avoidance, masculinity vs. femininity and long-term orientation. In the context of SNSs, individualism-collectivism is considered the most important dimension. According to Hofstede [14,15], individualism and collectivism are polar opposites, and they differ in how members define their relationships with others. Members of individualistic cultures prefer loosely-knit social frameworks and tend to see themselves as self-reliant. Therefore, competition is encouraged, and personal achievement is valued. In contrast, members of collectivistic cultures see themselves as interdependent with each other. As a result, they give priority to group achievement and harmony instead of individual success.

Since SNSs are a relatively new technology, studies concentrating specifically on cultural differences in SNS use are rare, and the findings are mixed with regard to success of explaining SNS use and behavior with cultural impacts. For instance, in a study by Dou [8], against expectations, collectivistic and individualistic did not differ on the amount of personal information shared, but they differed on what kind of content was provided for the community. The collectivist provided content that benefited the community by giving advice, whereas instead of sharing advice and information, the content by the individualistic merely expressed their individual opinions.

Rosen et al. [31] investigated the relationship between online behavior, culture and gender, and found the more individualistic culture to differ from the less individualistic. Participants who identified with more individualistic cultural backgrounds had larger networks of friends on SNSs, a greater proportion of friends they had not met face-to-face, and shared more photos online, as opposed to participants who identified with less individualistic cultural backgrounds. Based on the difference, Rosen et al. [31] concluded that the more individualistic cultures tend to self-promote and are better connected than lesser individualistic cultures.

In contrast to Dou [8] and Rosen et al. [31], Ji et al. [17] found it hard to explain the difference in SNS usage (specifically motivation to use SNS) by cultural difference with Hofstede's theory. They explained this by the fact that both cultures and the online environment are continuously changing, and involve various types of users. Consequently, Ji et al. [17] suggest that cultural theories alone may not be enough to explain the differences in SNS usage, but in the analysis additional

components should be reflected on. These are, for instance, detailed SNS components of each nation such as infrastructure or geographic difference [17]. Therefore, the sample and the national cultures included in the studies should be considered as a factor influencing results. All in all, it is important to understand how people from different cultures use SNSs to enhance the development of SNSs to better accommodate the characteristics of their users.

2.2 Motivations to engage in physical activity

Regular physical activity, exercise, rewards people with better general and health-related quality of life, better functional capacity and better mood states [27]. However, despite the obvious benefits of exercising, people often need extra motivation to engage in it regularly. To understand what motivates people to exercise has been an important research topic not only in sports and exercise science, but also in Human-Computer Interaction. For instance, persuasive technologies aimed for health and wellness interventions are an emerging research area.

2.2.1 Tools to support exercise

It has been found out that tracking, saving and storing data of physical exercise motivates people to increase their level of physical activity and keep their current motivational levels [13, 24]. In addition, social interaction, enjoyment and competence have been found to motivate exercising [32]. Consequently, to promote exercise and to increase satisfaction in exercise activities, (digital) tools have been developed to provide means for social support, visualize the perceived benefits of being active, give feedback about the workout and help set appropriate goals [1,10,24].

Keeping a personal diary is useful for keeping up with one's current activity level. It also has a motivating power, as users may find tracking performance rewarding in itself. In a study by Harjumaa et al. [13] on a training program, virtual rewards were found unnecessary to motivate the user to perform the target program, as tracking performance was perceived as a reward in itself. A similar result was found in a study by Munson and Consolvo [24] in which users experienced entering their activity data on the activity journal rather as a reward and not a burden.

Ahtinen et al. [1] categorized current applications and solutions to support physical activity roughly into four main categories: a logger, a virtual personal trainer, gaming and entertainment, and community and social sharing. An application or solution may contain features from several categories, or it may be combined with other solutions for enhanced features. For instance, a logger may be combined with tools for analysis and interpretation that work as a virtual trainer by giving feedback on the performance. Social sharing could be supported with a function that allows sharing of the exercise log online.

Previous research on the online exercise diary [19] and sports tracking applications with web services [1] shows that both personal and social uses can be identified with such technologies. On the other hand, the feedback collected on possible usage of a web application (RunWithUs) that combines a tool to keep track of statistics from personal workouts and a social network, shows that users would be more interested in keeping track of their own performance than competition or social interaction [10].

2.2.2 Peers as a motivator in exercise

Social interaction and sociality are important in many sporting activities: peers can motivate, offer feedback and support. On

websites meant for exercising activities, such as Movescount, users' goals are on individual performance rather than in social collaboration, and personal use is thus perceived to be prevailing and more valuable [1]. However, there is evidence from the research of websites dedicated to goal-setting that users who engage in social features perform better on their goals than those who are non-social [6]. In goal-setting, public commitment seems to play an important role because by telling people about your goals, you feel social pressure to stick to them [6]. Consolvo et al. [7] found that users of a mobile physical activity monitor were more likely to meet their goals when they shared their step counts with friends than when they kept their information private.

Social features may provide inspiration: other people's exercise logs and jogging routes may be perceived as interesting [19,1], or in the case of SNSs for bodybuilders, pictures of other people's bodies showing progress provides inspiration [28]. At the same time, self-promotion in the form of pointing out accomplishments with pictures has motivation value for the user [29]. In addition, being able to share workouts with an online training diary was seen as an additional way of keeping in touch with friends who were friends also offline. In other types of services, like SNS for bodybuilders, motivation to use social features and interact with others may extend the offline connection to provide support and to reinforce the values underlying passion [29]. The services can also be used as a resource to seek advice [29] or find training partners [7].

Despite the many positive aspects of social features of websites, users may be cautious or even feel negatively about using them. For instance, users do not want to bother their friends [24]. Users may also suspect sharing exercise data could be deemed boring or boastful [24], and they may not be able to see any value in sharing their exercise data with others [1]. In a study by Munson and Consolvo [24], not even the use of support groups (possibility to target posts to a friend that was deemed interested) diminished the avoidance of sharing. On the other hand, in the same study, some participants who shared with support groups were disappointed by the lack of support, i.e. no likings on her posts. However, if likings were received, it felt like encouragement. Another concern among the users with sharing was the loss of privacy [24].

3. METHOD AND DATA

The goal of the study was to understand how users of a newly launched online exercise diary and social network site took advantage of it in their exercising practices and what kind of features were appreciated in the service. The focus was on identifying if a user's demographic background explains the use and perception of the site, especially what comes to privacy and sociality aspects.

3.1 Movescount

Movescount, a website aimed for documentation and sharing of exercise data, is maintained by Suunto, a producer of sports watches and instruments like heart rate monitors. Even though Suunto is the provider of the website, joining does not necessitate owning a Suunto product, and is free of charge for everyone. However, as the aim of the site is to give the users more value for their product through the service, there are some benefits gained from owning a product produced by Suunto. For example, the site is easier to use for Suunto product owners because automatic transfer of the exercise data from (some) of the Suunto device is supported and, thus, there is no need for manually logging exercise data.

Figure 1. Screen capture of the Movescount home page.



The English version of the service was launched officially at the beginning of May 2010. On July 2010, the service was also launched in Danish, Dutch, Finnish, French, German, Italian, Norwegian, Portuguese, Spanish and Swedish.

There are two main uses for the website: it can be used as a personal online exercise diary for tracking one's training sessions, and as a social networking site for sharing and viewing entries from other members. This duality is highlighted on the home page by the labels 'private' and 'community' on top of the page. The private side of the service contains personal content like the user's profile page and training statistics, whereas under the community, information on other service users can be found, for example based on location, type of exercise log or popularity. In addition, in the community side, the user can create groups or join an existing one.

To use the site, registration is needed. After that, a profile page, called 'scoreboard', is created in which the user can present himself/herself by displaying a picture, choosing the main sports (s)he does, and writing a statement on what motivates him/her to exercise. In addition, on the profile page a summary of the latest exercising activity ('move') in the last 30 days is shown. The page also shows the members who the user is following, the members who are following the user ('fans'), the groups joined, and the discussions ('shouts') had with others. The private side of the site allows logging exercises on a calendar, and has features to review and analyze the performance. In addition, tools are provided for creating new routes and planning new exercises, which are shown on the calendar.

3.2 Survey for Online Exercise Diary Users

At the time of the data collection in mid-September 2010, the service had been running for approximately four months. Users from three countries (national cultures), Germany (from now on labeled as GER), USA (US) and Spain (ESP), were chosen as the main targets of the study. There were two reasons for this: first, these countries are among the main markets of Suunto so it was estimated that we would be able to reach a fair amount of respondents, and secondly, according to Hofstede's [14,15] dimensions of national culture these cultures show differences, especially on an individualism dimension, when compared to each

other. Spain is considered a collectivist culture (individualism score 51), whereas USA (91) and Germany (67) are individualist cultures. The participants were recruited with the help of Suunto: they provided the e-mail addresses of 1000 service users (392 US, 214 GER, and 394 ESP) who had agreed to receive marketing material during the registration (including invitations to surveys) from the company.

The invitation to participate was written in their native language and sent as e-mail that included a link to the online questionnaire. As an incentive to participate, the respondent was eligible to take part in a prize drawn of five Suunto heart rate monitors (each valued 169€). The survey was open for three weeks. After a week, a reminder e-mail was sent. In addition, to enlarge the potential sample, the invitation to participate in the survey, with links to the three language versions of the questionnaire, was posted on Movescount's Facebook page.

In the questionnaire, participants were asked background information such as age, gender, nationality, type of sports, and how often they exercise. The statements regarding Movescount and its various features were rated on a scale of 1-6. In order to compare the ratings of statements with their backgrounds, statistical tests were conducted. The questionnaire also included open-ended questions for example about why they joined the service. The qualitative data was analyzed by deriving categories from their statements, and counting the frequencies of categories to each questions.

3.3 Participants

In total, 286 respondents representing 16 different nationalities completed the online questionnaire. Four respondents were excluded from the analysis due to missing data leaving the sample to 282 respondents.

The largest groups of nationalities were the Spanish (39%), followed by the Americans (29%) and the Germans (25%). The invitation to participate posted on the Facebook page resulted in 19 responses (7% of the respondents) outside the three main national cultures. These respondents were mostly single cases of other nationalities and here classified as other. They were included in the sample apart from the cultural analysis.

The gender distribution was uneven as the majority, 95% of the respondents, was male. The age of the participants ranged from 19 to 65, the average age being 39 years. However, there are some age differences between the three nationalities since the group of Spanish participants was slightly younger (mean 37 years) than Americans and Germans (mean 41 years in both of the groups). We do not have specific information on what is the average age or gender for all the users of Movescount or Suunto customers who have purchased a heart rate monitor. However, according to Suunto, the sample of this study well represents the average Suunto customer based on age and gender.

The most popular sport was running and/or jogging, which was mentioned by 84% of the respondents. Other popular sports types were cycling (46%), mountain biking (33%), swimming (30%), and hiking and/or trekking (27%). The respondents reported having one to nine different exercises that they do on a weekly basis (avg. 3 different sports). The majority seemed to be using Movescount regularly and at least weekly, since 43% reported using the service 2-4 times per week and 23% once a day.

At the time of the survey, the site had been open to public for only four months; therefore, all the participants were rather new to the

service. 35% had joined it less than month ago and 27% had been members since its launch (4 months).

4. RESULTS

4.1 Reasons to join Movescount

The respondents were asked with an open-ended question about their reasons to join the site. Open coding was employed to identify each reason to join (categories of motivation) given by the respondents. 11 respondents gave no reason at all, and the largest number of reasons was six (avg. 2). After the initial categorization, the individual reasons were combined to seven thematic groups: diary keeping, practical reasons, social connection, recommendation, curiosity, motivation and design.

The most often mentioned reason to join the site was related to keeping an exercise diary (130 respondents, 48%). Most often the respondents expressed their need to just record their workout sessions to follow activity levels, but many mentioned also the need to track and analyze the progress or plan future training:

"Provided me with better tracking, analysis and planning tools for my training." (ID77)

Practical reasons were given almost as often reasons as diary keeping (128 respondents, 47%). These include the compatibility of the Suunto produced device the user owns or the operating system the user uses (Win7, OS/X) with the site. In addition, many respondents had started to use the service to replace an old exercise analysis software. In these instances, it was often to replace old Suunto software suggesting they were old Suunto customers. However, other applications to replace were also mentioned (beginnertriathlete.com, 2peak, Polar web application). A valued feature of the site was the ability to map or plan a route, but a specifically positive and practical reason to join and use the site was the online access. The respondents seemed to appreciate the feature greatly since the data can be accessed from any computer, which is perceived to bring ease of use:

"To save the data from my Suunto online and keep them available at all times." (ID183)

Reasons to join related to social aspects of the service were mentioned by 47 respondents (17%). Most of these referred to the possibility to share one's information with other members of the site or friends:

"I think it's interesting and fun that I can describe in detail the exercised [sic] which I have done and can then share that information with people from all over the world." (ID283)

The readiness to share with 'others' outside the normal circle of friends or training partners differs from the findings of previous research [1] in which users have been cautious to share, especially with unknown others.

On the other hand, there were some respondents who did not mention sharing as an important feature but the possibility to see other people's training habits and logs. These were seen to enable learning from others and competition, by allowing comparison to user's own performance.

37 respondents (12%) had joined the site out of curiosity or interest. It was considered fun to try out something new with the idea and hope that the use of the site would give motivation:

"I was curious about something new. I need a bit of incentive when I go running in the evening. Seeing the kilometers I have run on the monitor gives me the strength I need to get off the sofa again the next day. Movescount also allows you to race with others brilliantly." (ID156)

4.2 Feature use

Respondents were asked which features of the site they used most often (see Figure 2). The results show that the most often used features were those aimed for personal documentation; adding moves (78% of participants had added moves at least weekly), reviewing previous moves (72%), and editing something in a move (48%). The least used features were linking to Flickr or Youtube (87%), leaving a group (86%), and stopping to follow someone (83%).

Altogether, features relating to content creation and social interaction seem to be rather unpopular, as 79% had never created a group, 73% had never written shouts, and 69% had never shared moves in SNS (see figure 2). This indicates that individual documentation features were most often used, whereas linking to social media and socializing with others were the least popular functions. Also, most of the respondents had not stopped following other users or left any groups, which is not surprising since only a minority had joined groups and followed others.

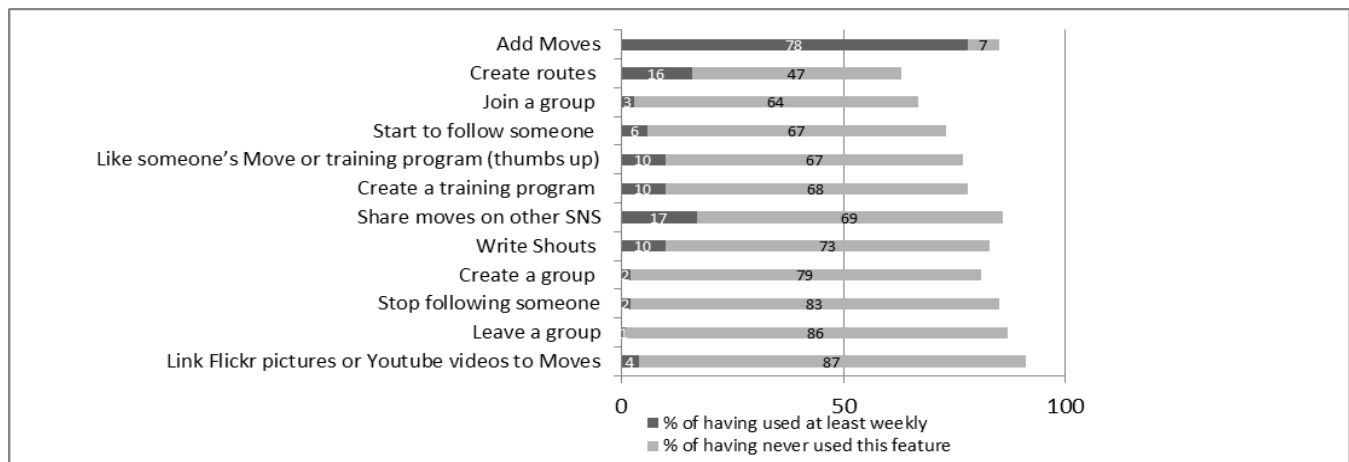


Figure 2. Popularity of socializing and content-creation features of Movescount (N=282)

The statements about belonging to the community and the importance of other members were measured on the scale from 1 to 6 (1=strongly disagree, 6= strongly agree). The aim of these questions was to measure the overall importance of collaboration and sharing. As shown in Table 1, to the greatest extent, the respondents agree that the social side of the service is not important. However, somewhat inconsistently, the respondents feel they are a part of the community. The respondents agree least on the statement about having found new contacts through the service.

Table 1. Agreement with community related statements (N=282) (1=strongly disagree, 6=strongly agree)

Statement	mean
I don't care about the social side of the service – I only keep track of my own training	4.0
I feel that I am a part of Movescount community	3.8
I want to show other Movescount users that I'm active	3.5
It motivates me when others can see my profile and moves	3.5
I want to keep my profile private	3.4
Input made by other members has been useful to me	3.4
I have got new contacts through Movescount	2.3

Variance analysis (One-Way Anova with Bonferroni Post hoc tests) was conducted in order to compare the means of community statements with respondents' backgrounds. The tests show that there were no statistically significant differences according to respondents' age, but several statistically significant differences were found between the nationalities. The Spanish (mean 4.2) agreed significantly more with the statement 'I feel that I am a part of Movescount community' than the Germans (mean 3.2, $p<.001$). Also the Spanish agreed significantly more than the Germans with the statements: 'Input made by other members has been useful to me' (Spanish 3.8; Germans 2.9, $p<.001$, and 'I have got new contacts through Movescount' (Spanish 2.6; Germans 1.8; $p<.005$).

4.3 Benefits of training related online community

Participants were asked, on the scale from 1 to 6, what they find the most important benefits of an online training community to be, not just Movescount but any other online service. The results show that the most important benefits are rather individualistic: 'Seeing statistics of my training and development' (mean 5.2), 'Setting goals in exercising' (4.7) and 'Gaining information of sports and training' (4.5). It also seems that they saw competitive elements as the least important benefits: 'Seeing my profile in most popular move or most active athlete lists' (2.7) and 'Competing with others by comparing results' (2.9).

When comparing the statements regarding the benefits with respondents' nationality with One-Way Anova and Bonferroni Post hoc tests, several highly significant statistical differences ($p<.001$) were found between Germans and Spanish and between Germans and Americans (see table 2).

Table 2. The perceived benefits of an online exercising community according to nationality, highly statistically significant differences marked as * (N=282)**

How important these issues are for you? (1=not important at all, 6=very important)			
	GER (mean)	ESP (mean)	US (mean)
Learning from other people	3.5***	4.7***	4.3
Sharing information of myself and my exercising	2.6***	3.6***	3.0
Getting feedback and guidance from the others	2.8***	4.4***	3.7
Setting goals in exercising.	4.1***	4.8	5.0***

When comparing the statements of benefits with age, the results show highly statistically significant differences ($p<.001$) in relation to two statements. 'Sharing information of myself and my exercising' was rated higher among the youngest age groups (30 years and younger, mean 3.6; 31 to 35 years, mean 3.7) and was the least appreciated among the group of the oldest respondents (46 years and older, mean 2.6). Also, 'Getting feedback and guidance from the others' was the least appreciated among the oldest age groups (41-45 years, mean 3.4; 46 and older, mean 3.2), whereas the youngest group (30 years and younger, mean 4.4) rated this benefit significantly higher.

4.4 Benefits of Movescount

Based on their user-experience of Movescount in particular, the respondents were asked how they thought they benefit from using it. The results are consistent with the findings from the other statements of the survey, since the activities that were rated as the most beneficial can be classified as individualistic, whereas the least beneficial activities were more collectivist in nature concerning the extension of social networks (see table 3). Also, the statements measuring usability and attraction of the design of Movescount scored high.

Table 3. The perceived benefits of using Movescount (the highest and lowest rated statements presented) (N=282)

I am happy with Movescount because... (1=strongly disagree, 6=strongly agree)	mean
I can see statistics of my training and development	5.0
it looks nice	4.7
it is easy to use	4.6
it helps me to set goals in exercising	4.5
maps and routes feature	4.2
I can create new contacts	3.3
I can maintain and strengthen existing contacts	3.3
I can compete with other community members by comparing results	3.3

When these statements were compared with nationality (One Way Anova and Bonferroni post hoc tests), several highly statistically significant ($p < .001$) differences were found (table 4). The results show that the Germans agree significantly less with the following statements regarding Movescount.

In comparisons with age, highly significant statistical differences ($p < .001$) were found regarding two statements. ‘I can compete with other community members by comparing results’ was most appreciated in the youngest age group (mean 4.0) and the least appreciated among the oldest (mean 2.7). ‘I can share information of myself and my exercising’ divided opinions as the youngest group (mean 4.5) rated it significantly higher than the oldest group (mean 3.1).

Table 4. The perceived benefits of using Movescount according to nationality, highly statistically significant differences marked as * (N=282)**

I am happy with Movescount because... (1=not important at all, 6=very important)			
	GER (mean)	ESP (mean)	US (mean)
I can communicate with people with same interests	3.1***	3.9***	3.3
I can learn from other people	3.3***	4.3***	3.7
I can get feedback and guidance from the others	3.3***	4.2***	3.6
it helps me to set goals in exercising	3.8***	4.8***	4.7
maps and routes feature	3.7***	4.6***	4.0

4.5 User profile and privacy

The respondents were asked about their current user profile settings: 50% of the respondents had a public profile and 35% private, and 15% did not know about their current settings. There were no differences regarding privacy settings depending on the nationality, but younger age groups seemed to be slightly less aware about their settings and had more frequently left them public.

At the time of the study, the default profile setting on the site was public, but 27% (76 respondents) reported having changed their privacy settings at some point during their usage. Most of them (46 respondents) had changed the setting from private to public because they wanted to share their exercises and connect with like-minded people, as one respondent explains:

“Once I saw that there was the possibility of enriching the experience with shared experiences” (ID269).

On the other hand, there were those who were uncertain what was private and public causing them to try out different settings. In addition, some people (11 respondents) strictly wanted to keep their information private. Reasons for this were general caution in the web environment or the opinion that individual’s training would not interest others:

“From the word go, private data should remain as such” (ID147).

Online communities are known to go through different stages during their life-cycle. After its launch, in the stage of growth, community is strengthened and trust begins to emerge [16]. In the beginning, the members are usually more cautious, but when they get familiar with the site and its rules, the threshold to participate is lowered. As the site had only existed for four months, all the members were rather new to the service and were just getting familiar with it. Therefore, it is possible that many of them were beginning to trust the service more and had loosened their settings for this reason. In addition, since some users started to use the site to replace their old analysis software for exercising, the new features and functions may have taken some time to get used to and appreciate.

5. DISCUSSION

Not surprisingly, the results show that the most important reason for using Movescount was personal documentation and following individual activity levels. Keeping track of one’s exercises was perceived as an important motivator for training. On the other hand, social interaction and sharing on SNSs were least interesting features for the users. However, there was some interest in seeing others’ training activity and results.

When compared with the respondents’ backgrounds, it turned out that the nationality has a more significant role than age in their relation to community and collaboration, as the Spanish were clearly the most interested in collaboration, learning from others and getting new contacts. The Germans were the least interested in these activities. For the Americans, personal goal-setting was more important than for the Germans and Spanish. There were some age differences concerning sharing and privacy since the youngest users were most interested in getting help and support from others and to share information of themselves. On average, people were not interested in using Movescount in a competitive way. However, age-comparisons showed that younger users found competing with others more important than older ones.

It is very likely that the gender (95% male) and the age (average age 39 years) of the respondents affected the results. Previous research indicates that women use SNS in a more social way than men [31], and women disclose more information on themselves on SNSs than men [18]. As the average age of the participants was rather high, their activity and interest in online social networking and sharing is likely to be lower than in younger age groups.

The usage of an online training diary may also be affected by the type of sports exercised. As the majority of the participants were runners, the importance of individual tracking and goal-setting was highlighted in this study, whereas among some other types of sports exercisers, e.g. bodybuilders [28,29] the need for feedback from others plays a more important role. In addition, bodybuilders have been found interested in interacting with member of the community they knew only online [28,29], whereas in the case of general sports tracking application, the users have not been keen on sharing with previously unknown people [1]. Consequently, the authors in [1] speculated if one of the reasons for social features not being interesting was that there needs to be a large enough community of familiar persons before it could act as a motivating factor. Interestingly, in our study, some of the participants were willing and interested in sharing with unspecified ‘other’. Nevertheless, it may be that the interest in social features increases among all nationalities in the future when there are more members in the site who, perhaps, are friends also offline.

In the study by Rosen et al. [31], users from the more individualistic culture were interested in social features: they had larger networks of friends on SNSs and shared more photos online. In contrast, in our study users from the more collectivistic culture showed more interest in social features. Our explanation to the opposite finding is the different goals of using SNSs. In a networking type of SNS, as in the study by Rosen et al. [31], the goal of users from more individualistic culture may be self-promotion, whereas in an exercise type of SNS, the main goal is to track one's performance and progress in exercise. It may be that sharing in this context is not considered to help reach individual goals, and thus, the more individualistic were less interested in those features than the more collectivistic.

Based on the results, we propose that online training diaries should take into account the various cultural backgrounds of users. Both the documentation of individual training history for personal monitoring of exercise, and sharing of one's activities as an inspiration for others and self, are needed. Users should have a possibility to customize the service according to their individual needs. This is especially important in relation to features that relate to privacy and sharing. It is important that there are tools for the user to help to understand how to control sharing and what kind of personal data is available for others. For example, it may be useful for the user to share the basic information about the exercise (e.g. type of sport and intensity) but to share the location may feel too personal and a possible threat to privacy.

Cultural differences could be taken into account in the marketing, and services could be tailored based on cultural differences. For example, for individualistic cultures the instrumentality of the service could be emphasized also in relation to more socially oriented features. For example, other people's exercise logs could be portrayed as tools for one's training.

Ji et al. [17] suggest that other possible influencing factors should be added to the analysis on the cultural effects of the SNS usage. In this research in progress, we aim to add the type of exercise of the users' as an additional variable in the analysis to better understand their service usage. In addition, an investigation on whether the device used by the user to collect his or her exercise data has an effect on the online exercise diary use is considered important.

In order to improve the results of this research in progress, in future studies log data of the actual usage of the website needs to be collected to understand users' activities more specifically. Data collected with online questionnaire relies on respondents self-reports that cannot be proven. In addition, to analyze the cultural effects more explicitly, more detailed data on the users' backgrounds needs to be collected. In the future studies, the survey needs to approach cultural identity more specifically and take into account the various ethnic and cultural backgrounds instead of mere nationality. Furthermore, in order to grasp respondents' activity on SNS we need to add questions asking about their overall SNS usage.

6. CONCLUSION

We studied the users of an online exercise diary and investigated how cultural background impacts the use of the service. In line with previous research on cultural effects on SNS usage, our initial results show differences between national cultures. Most importantly, our results show differences between individualistic and collectivistic cultures on the community aspects. The respondents from collectivistic culture, Spain, show more interest

in sharing and communicating with others, whereas the respondents from the more individualistic cultures, Germany and the United States, were less interested in these activities. Across the nationalities, the users were foremost motivated by using the website for promoting their individual goals in exercise.

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