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Motivations and Organisational Capacities of Potential Orienteering Developers: A Replication Study

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ABSTRACT

Background: This replication study, a survey, enhances the understanding of the motivations and organisational capacities of novice orienteers in the Philippines, with a focus on current and future PE teachers.

Methods: Survey. Statistical analysis using rank correlations (Spearman's rank correlation and Kendall's tau), Cohen's d for effect size, and t-tests complemented by simulations of response distributions.

Results: The findings reveal that respondents were motivated to develop orienteering despite its novelty and marginal status in the country. While participants expressed confidence in pursuing the sport, this confidence varied depending on the specific area of organisational capacity. Human resources capacity emerged as the strongest, while financial capacity was identified as the weakest, with no differences in the views between women and men.

Conclusion: Given the limited literature on the diffusion of non-profit sports, further research is recommended to better understand the motivations of novices to engage in orienteering. In particular, Self-Determination Theory could serve as a useful framework for examining the motivations of potential orienteering developers and participants in the Philippines. Additionally, key obstacles to sport development in emerging markets warrant further exploration, along with longitudinal studies tracking the sports' growth and the individuals involved over time. Such research could provide valuable insights into the patterns of new sport adoption.

Keywords: Organisational capacity, orienteering developers, new sport development

1. INTRODUCTION

Orienteering is a small but growing sport in the Philippines. Recently, its development has gained momentum, as seen in the (re) establishment of a national orienteering federation in 2021, the creation of new orienteering maps, the emergence of small orienteering events, and its inclusion in physical education curricula. As of July 2024, two Facebook groups dedicated to orienteering in the Philippines had a combined membership of over 800. Local enthusiasts' interest in developing the sport in the Philippines is also encouraged by the International Orienteering Federation's (International Orienteering Federation, 2020) aim of orienteering to achieve inclusion in the Olympic and Paralympic Games (IOF Strategic Directions 2019–2022) (International Orienteering Federation, 2018).

In many countries orienteering is commonly included in physical education programmes and has been shown to provide significant benefits, such as development of problem-solving skills (Uzuner & Ekız, 2023). However, effective implementation is often hindered by limited resources and insufficient training (Rodríguez & Montes, 2020). Volunteers

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are recognised as an important field of sports research (Sand & Hanstad, 2019).

In February 2020, a survey was conducted to assess the organisational capacities of potential orienteering volunteer developers in the Philippines (Camarador & Teinilä, 2023). Findings suggested that initial interest in orienteering could be generated with relatively modest financial means and that current or aspiring PE teachers were interested in promoting the sport. Respondents reported varying levels of organisational capacity, indicating a willingness to develop skills to support orienteering's growth. Financial capacity was identified as the most significant challenge. Because the data in Camarador and Teinilä (2023) had limited statistical strength, and because we considered it as important to deepen the understanding of the motivations and capacities of Philippine orienteering novices, we repeated the same survey with a new sample at an orienteering event in November 2023. The hypotheses we seek to test are as follows:

H_1: The strongest motivations and interests of novices to participate in orienteering in the Philippines are in the personal enjoyment and in engaging with friends, and the weakest motivations relate to technical aspects of the sport;

H_2: Organisational capacities and willingness to develop them for organising orienteering are relatively strongest for Human resources capacity and relatively lowest for Financial capacity; and

H_3: There is no significant gender difference in terms of respondents' motivations, or organisational capacities or interest to develop such.

2. METHODOLOGY

Following the literature review of the 2020 survey (Camarador & Teinilä, 2023), this 2023 survey focused on the elements of organisational capacity particularly as defined in Misener and Doherty (2009), applied in the context of orienteering for how potential developers of orienteering in the Philippines view their organisational capacities and motivation to develop the sport.

The research used the same survey instrument as in Camarador and Teinilä (2023). The 2023 survey had access to a pool of orienteering novices at an orienteering event that combined an introductory clinic on what orienteering is, followed by an informal sprint orienteering event on a campus in the Metro Manila area in November 2023.

Motivations

The development of a motivating environment for enjoyment, competence, and intrinsic motivation is a crucial element of human capacity in children's sports (Theeboom et al., 1995). According to Hall and Reis (2018), sport development programmes having a dominant vision are predicated on the idea that sports can effectively foster the development of social skills, values, leadership traits, and life skills. We expected that, in addition to enjoyment, respondents would be interested in taking up a new sport for athletic challenge, life skill development, or educational incentive, and we inquired about these in the questionnaire for both this survey and the activity that came before it.

Organisational capacity and sport development

Organisational capacity can be defined as a framework built from different characteristics related to organisational effectiveness (Misener & Doherty, 2009). Organisational capacities can be categorised as: (1) human resources capacity, (2) financial capacity, (3) relationships and network capacity, and (4) infrastructure and process capacity.

The primary goals of sport development programmes typically involve raising a sport profile, improving coaching, developing sport infrastructure, and supplying equipment necessary to facilitate participation and skill evolvement. Andrassy et al. (2017) found that organisational capacities are crucial for the development of student-athletes. Conversely, Misener and Doherty (2009) found that human resources and development and planning were the most important in non-profit community sport. In the context of non-profit sport organisations, Wemmer and Koenigstorfer (2016) outlined managerial capacity as an important factor of innovation, further listing the contributors to managerial capacity as negotiation skills, strategic thinking, social skills, and a supportive organisational environment. Moreover, Balduck et al. (2014) noted the significance of organisational capacity in building partnerships within community sport programmes. Balduck et al.'s (2014) finding was previously supported by Casey et al. (2009), who pointed out the importance of partnerships in developing not only community sports but also recreation programmes.

The research design was also informed by literature on diffusion of sports in new markets. There exists extensive literature on the dissemination of a new sport in a relatively novel market. However, no literature on the diffusion of orienteering was found.

Furthermore, we struggled to find studies systematically analysing diffusion patterns across different sports or resources used for their development.

The scarce literature on the diffusion of sports in new markets suggests some general elements as ordinarily involved in the development or diffusion of a new sport: (1) societal factors, as changes in lifestyles or in social attitudes (e.g. Tjønndal et al., 2018), (2) new technology and facilities, and access to them (e.g. Booth, 1995; Duret & Angué, 2015), and (3) willingness and capacity of actual or potential participants to organise themselves for the sport, the last one being the main focus of this survey.

Conducting replication studies

There is extensive debate on the relative paucity of replication studies (Perry et al., 2022) and how more replication studies should be done (see e.g. Hüffmeier et al., 2016; Peels, 2019; Mesquida et al., 2022).

Following various definitions of replication studies, we designed this study as a close replication of Camarador and Teinilä (2023) as follows: (1) use of the same survey instrument and research protocol, (2) aspiring to be comparable with the original survey, and (3) asking the same research questions. Following Peels (2019), this study is not designed with a dependency on the results of the previous survey.

Compared with the original survey, there are some differences in the context. The survey by Camarador and Teinilä (2023) was carried out just before the COVID-19 lockdown; and the 2023 survey was conducted about a year after the lifting of the COVID-19-related restrictions in the Philippines. This may be relevant since there is some evidence that post-COVID-19 research has found changes in attitudes towards outdoor activities (e.g. Ivanova & Khalifa (2024) in a Bulgarian sample). In a summary of a number of papers across 13 countries on the impact of COVID-19 on outdoor activities, Pröbstl-Haider et al. (2023) reported an increase in visits to parks, protected areas, rural hinterland, and remote forests. Furthermore, the 2023 survey respondents on average had slightly more orienteering experience, albeit at a low level (see Table 1), which may be linked to their attitudes. We do not believe that these differences weaken the value of the replication, and we cover these in our analysis and the discussion of the validity.

We consider this replication useful, given the practical relevance of learning more about conditions for developing orienteering in new markets, and as replications help establish the stability of our knowledge (Hüffmeier et al., 2016) or maintain trust in science (Peels, 2019). Hüffmeier et al. (2016) recommend that a replication should also be justified by possible outcomes, which can include: (1) the previous study is novel and its findings need strengthening, (2) the previous study's results are such that a replication can add strength, or (3) other replications of the original study have not yet been carried out (Hüffmeier et al., 2016). We consider these criteria as met.

The survey instrument

For the respondents' level of agreement, we provided five choices ("Very much", "Somewhat", "A little", "Not at all", or "Can't say") on a Likert scale. The questions, based on the literature review, and given the novice pool of respondents, asked about the respondents' own perceived capacity or competence in order to understand the respondents' motivation or interest in developing skills such as mapping or coaching.

The clinic gave relevant context for the survey, as it introduced the participants to orienteering as a sport, its rules, map symbols, map making, course planning. The clinic was followed by a sprint orienteering event on the university campus.

The survey data

The survey instrument was distributed to and returned by all 31 participants of the orienteering event in November 2023. This mitigates potential issues of non-response bias. Concerns about possible peer or other pressure impacting responses will be discussed later in this paper.

No forms had to be discarded due to material lack of data. Questions with no responses were few in number. Three respondents did not disclose their age and three did not disclose their occupation. Two respondents gave a high number of "Can't say" responses (6 and 4) to questions regarding organisational capacities, representing 2.0% of all responses to this section of the survey. The constructed scores on organisational capacities of these two respondents were excluded from the analysis.

The sample exhibited homogeneity, which makes it non-representative of the general population and limits generalisability. The participants were practicing physical education (PE) teachers, students of PE teaching, or faculty members involved in teaching PE teacher candidates. Six respondents came from outside this occupational area.

Table 1 summarises the demographics of the

two samples (surveys in 2020 and 2023). It shows high similarity between the samples: the gender splits are similar, median and average ages of the samples are within 1.6 years. The average age of the respondents was 30.4 years (women 31.8 years, men 28.5 years), median age 27.5 years. These were all slightly higher than in Camarador and Teinilä (2023), and compared to the first survey, the female population in the 2023 sample was older by about three years. Teachers are the largest and students the second largest group by occupation, and almost all respondents have an undergraduate or graduate degree. The respondents' experience in orienteering, with the number of orienteering events participated in thus far (including the event where the survey was done) was low at 1.11 times (2020) and 1.61 times (2023). We argue that the samples are very comparable, and allow for comparability of results.

Table 1. **Comparative data on the demographics of the two data samples**

Demographic Characteristic	**Feb 2020**			**Nov 2023**			**Total Women (n)**	**Total Men (n)**	**Combined Total (N)**
	Women (n)	**Men (n)**	**All (N)**	**Women (n)**	**Men (n)**	**All (N)**			
Number	18	10	28	19	12	31	37	22	59
Percentage	64.0%	36.0%	–	61.0%	39%	–	63.0%	37.0%	–
Mean age (years)	28.5	29.3	28.8	31.8	28.5	30.4	29.4	28.9	30.1
Median age	–	–	26.0	–	–	27.5	–	–	26.0
Occupation									
Teacher	15	7	22	7	5	12	22	12	34
Student	3	2	5	5	5	10	8	7	15
Other	0	1	1	4	2	6	4	3	7
Total	18	10	28	16	12	28	34	22	56
Level of Education									
High school	0	0	0	0	1	1	0	1	1
Vocational	0	0	0	0	1	1	0	1	1
Undergraduate	4	3	7	7	7	14	11	10	21
Graduate or higher	14	7	21	12	2	15	26	10	36
Total	18	10	28	19	12	31	37	22	59

Note: One respondent in the February 2020 sample and three respondents in the November 2023 sample did not disclose their age. Three respondents in the November 2023 sample did not disclose their occupation. Dashes (–) indicate data points that were not calculated or applicable.

There were three open-ended questions. Responses to these questions were categorised. The open-ended questions on obstacles to introducing orienteering in the Philippines received 14 responses, providing only limited information content. Sixteen provided the number of persons with whom they came to the event, between zero and six, and averaging 3.06. This data shows that the respondents are novices to orienteering, and relatively young. We are satisfied that the demographics between the two surveys are not significantly different.

3. RESULTS

Statistical analysis

Given the high average scores and the issues

with treating Likert scale data as an interval scale (e.g. Joshi et al., 2015; Pornel & Saldaña, 2013), we focus on the relative rankings of the different responses between the two surveys. This allows to focus on what interests and motivates novices more than some other aspects, rather than trying to assess absolute strength of interest or motivation.

Table 2 summarises the statistical analysis on our hypotheses. Because the ordinal scale of our data, and the non-normality of the distributions of the scores, we used primarily the Kendall's tau, and secondly Spearman's rank correlation, and for effect size we used Cohen's d. Because of the low n, between 6 and 15, we used critical value tables for both correlation coefficients. Criticality testing mainly relied on the Kendall's tau because Spearman's rank correlation is considered less suitable when there are ties in the rankings, as was the case in our data.

Table 2. **Summary of statistical analysis for correlations and effect sizes**

Hypothesis	**Correlations (C_1–C_6)**	**Kendall's tau and Criticality Level**	**Spearman's Rank Correlation and Criticality Level**	**Cohen's d**
H_1 – Strongest motivations to participate in orienteering are personal enjoyment and engaging with friends, and weakest are technical aspects of the sport	C_1 – Ranks of motivations between the two samples (n = 12)	+0.48 p = .025	+0.45 p = .100	−0.20
	C_2 – Ranks of adjusted set of motivations between the two samples (n = 9)	+0.48 p = .100	+0.63 p = .050	−0.19
H_2 – Human resources capacity is relatively the strongest capacity and financial capacity is relatively the weakest capacity	C_3 – Ranks of capacities between the two samples (n = 15)	+0.79 p = .001	+0.91 p = .001	0.25
	C_4 – Ranks of constructed scores for capacities between the two samples (n = 6)	+0.73 p = .050	+0.83 p = .050	0.18
H_3 – No gender differences in perceptions on motivations and capacities	C_5 – Ranks of motivations by gender in the combined sample (n = 12)	+0.79 p = .001	+0.88 p = .001	0.29
	C_6 – Ranks of organisational capacities by gender in the combined sample (n = 15)	+0.81 p = .001	+0.80 p = .001	0.38

These tests support the acceptance of all three hypotheses. Acceptance is particularly strong for the question of shared perceptions by women and men. In addition, the respondents' views in our replication survey strongly agree with the views on human resources capacity by the respondents in Camarador and Teinilä (2023). Where the criticality levels give us lower confidence, this is at least partly attributable to the limited size of our sample(s). H_1 and H_2 are also supported by the low to moderate values for Cohen's d.

Kendall's tau does not reflect the magnitude but only the direction of concordance of ordinal rankings, and the suitability of Spearman's rank correlation (for testing significance) suffers from tied rankings. Therefore, we additionally conducted Monte Carlo simulations to test what the probability would be for the correlations to have been achieved by random scoring. This is not a commonly used analytical method, and the simulations did not change the picture provided by the correlation tests. Only on C2 (see Table 2), the probability generated by the simulation (17%) suggested non-acceptance of H1.

4. DISCUSSION

On motivations for orienteering, our empirical findings confirm H_1, albeit with some reservations because of the moderate correlation (C1) between the rankings of the responses (see Table 3). The novice respondents of the survey were similar to the previous survey in their prioritisation of social aspects of orienteering. It is suggested that future studies explore the strength of the motivations with the help of other theoretical frameworks. More on this below.

On organisational capacities, H_2 was confirmed too, with human resources capacity ranking the highest, and financial capacity ranking the lowest, whereas the rankings of other capacities (infrastructure, relationship & networking, planning & development) were not distinguishable.

As to gender differences, H_3 is confirmed, since no significant differences between women and men in their motivations or views of their organisational capacities were found. Next, we discuss these findings in more detail, and identify areas for further research.

Motivation to participate in orienteering and experiencing it

On experience in and motivations for participating in orienteering, as in Camarador and Teinilä (2023), scores were on average very high, mostly "Somewhat agree" or "Very much agree", indicating that the respondents enjoyed the activity, are interested in engaging more in orienteering events, and that in relative terms, the technical aspects of orienteering ranked the lowest. On average, the two samples' scores for this section were 3.61 (2020) and 3.65 (2023), i.e. very similar and high. This similarity is also high as suggested by the low Cohen's d (≤0.20) for both comparisons. A summary comparison of the two surveys' responses on motivation and experience in orienteering is presented in Table 3.

Table 3. **Comparison of the two surveys' respondents' experience and motivation in orienteering**

Motivation Item	Average Scores			Rank	
	2020	2023	diff.	2020	2023
An orienteering event/race is a good way to spend a Sunday out with family and friends	3.96	3.81	−0.16	3	7
I like the physical challenge of orienteering	4.00	3.87	−0.13	1	6
I like the combination of mental and physical performance in orienteering	4.00	3.94	−0.06	1	4
At this event, I learned about the sport of orienteering	3.89	3.90	0.01	5	5
Reading the map and the course on it is difficult for me	2.61	2.77	0.17	12	12
It was easy to find the event site	2.93	2.97	0.04	11	11
The procedure of the event was easy to understand	3.82	3.72	−0.10	6	9
The course was easy	3.14	3.10	−0.04	10	10
The event centre and facilities were good	3.68	3.97	0.29	8	3

Motivation Item	Average Scores			Rank	
	2020	2023	diff.	2020	2023
The participation fee for the event for me was right	3.57	3.79	0.22	9	8
I would like to participate at more orienteering events	3.81	4.00	0.19	7	1
I will ask friends to join orienteering events in the future	3.93	4.00	0.07	4	1

Notes: 'diff.' indicates the direct numerical difference between the mean scores of the 2023 and 2020 survey windows. Items are evaluated on a standard Likert-type scale.

The samples have strong agreements on the motivations that received the weakest scores whereas the strongest motivations were not shared. The strongest agreements in the sample were on two questions that relate to the ease/difficulty of orienteering ("Reading the map was difficult", "The course was easy") or on the aspects that were ranked the lowest for motivation and interest. We interpret this to mean that the novices are comfortable in reading a printed map, but developing a plan on how to efficiently navigate an orienteering course using only the map was challenging for them. The strongest difference between the samples was that in relative terms the 2020 sample ranked the physical or athletic challenge as the strongest motivational/interest point. This resonates with a finding in a survey of orienteering participants in Turkey, who cited the opportunity to develop into a top orienteering athlete in the country as a factor to join the sport (Dağli et al., 2019). The respondents in 2023 appeared to place more emphasis on enjoyment and activity with friends, which was also visible in the 2020 survey. In the 2023 sample, the highest ranked questions had a social notion ("I want to do more orienteering"; "I want to bring friends to orienteering"). In the 2020 survey respondents rated highly the aspects of orienteering being a good activity for a free day, and interest to bring friends to future events, which also suggest that the social aspect of orienteering was a motivation.

In average scores, some large between-samples differences were on questions specific to the event where the data was gathered, such as the quality and reachability of the facilities, and the participation fee. After eliminating questions that may have event-specific factors reducing their comparability, we obtained a moderate to high correlation (C2) between the two samples on motivations and interests of the respondents. Categorised data from narrative responses aligns with the acceptance of the hypothesis.

Reviewing the data on motivations and interest at a more granular level, we find no significant differences in the distribution of responses by gender. Only on the question if participants found reading the map difficult, in the 2023 sample, women responded more often "Very much" or "Somewhat" than in the 2020 sample, and than men in both samples. This is also reflected in correlation C5 (Table 2).

The data from this survey gave stronger validation that for the respondents the most attractive aspects in orienteering were the social aspects (combination of mental and physical challenge, engaging with friends), whereas the technical and access aspects had the relatively lowest rankings. This is also supported by the narrative responses on why the participants joined the event where the survey was done. Less than 10% of the responses in both samples were for "fitness", whereas learning and curiosity ranked the highest. The 2023 survey showed a higher proportion of responses that gave "curriculum" as a motivation to join. This may be because between the two surveys, some Filipino educational institutions added orienteering to their curriculum.

Organisational capacities

Across the board, average scores were high, and the proportion of "Very much agree" over all responses was at 42% lower than in the 2020 sample at 47% but the sum of "Very much" and "Somewhat" agree responses went up in 2023 (81% vs. 76%), thus the difference in average scores on organisational capacities changed only minimally (from 3.29 to 3.21). Ranks and average scores are reported in Table 4.

H_2 is accepted on the basis of our statistical analysis (see Table 2). Comparing the rankings of the average scores, the Kendall's tau for the rank correlation was +0.807 and Spearman's rank correlation coefficient at +0.905, both very strong and inside the 0.1% critical level. This is further supported by the small or moderate effect sizes

(Cohen's d, in Table 2). In our view, this confirms a strong similarity of views of respondents' organisational capacities in the 2020 and 2023 samples. The scores can reflect actual capacities as well as intentions or aspirations to develop such and we cannot infer from them that such capacities already exist. However, we believe that they indicate relative interest or confidence in respondents' own abilities to deploy or acquire such capacities.

Table 4. **Comparison of the two surveys' respondents' organisational capacities**

Capacity Survey Item	Average Score			Rank	
	2020	2023	diff.	2020	2023
I understand what elements are needed to lead organising an orienteering group in my community	3.46	3.23	−0.24	3	7
I can mobilise other volunteers to help organise orienteering events and activities	3.25	3.13	−0.12	10	1
I know how to develop skills needed by volunteers to organise orienteering activities	3.37	3.06	−0.31	7	11
I have ideas how I can attract participants to orienteering events (publicity)	3.30	3.13	−0.16	9	9
I could run a social media page for an orienteering group	3.14	3.03	−0.11	12	12
I can participate in fundraising for orienteering activities	3.00	3.00	0.00	13	13
I can help budgeting costs and financing of orienteering activities	2.64	2.63	−0.01	15	15
I can negotiate access to grounds and facilities that can be used for orienteering	2.96	2.72	−0.24	14	14
I can engage in planning race courses for orienteering	3.20	3.23	0.03	11	7
I would like to motivate new participants to join orienteering events	3.54	3.74	0.20	2	1
I have ideas how I would explain orienteering to a novice and how to motivate them to try it out	3.44	3.52	0.07	5	4
I would like to learn to coach athletes in skills needed in orienteering races	3.46	3.57	0.11	3	3
I know how to find persons who can help me with developing orienteering activities	3.37	3.23	−0.14	7	6
I would like to learn the skills to create orienteering maps for events	3.77	3.71	−0.06	1	2
I know what different tasks are involved in organising an orienteering event, and how to carry them out	3.41	3.27	−0.14	6	5

Note: 'diff.' indicates the arithmetic difference calculated between the 2023 mean and the 2020 mean baseline.

On average scores per question, even the largest differences between 2023 vs. 2020 were small in magnitude, by 0.24 to 0.31 points on the Likert scale. The largest difference where the score for 2023 was higher than for 2020 was on the statement "I would like to motivate new participants to join orienteering events" – 0.20 points. This aligns with the observation on motivations, as the 2023 sample showed a higher tendency towards the social aspects of orienteering with friends than the 2020 respondents.

As in Camarador and Teinilä (2023), we constructed aggregated scores for questions grouped around the same elements of organisational capacity, namely (1) human resource capacity, (2) process and development capacity, (3) relationship and networking capacity, (4) financial capacity, (5) infrastructure capacity, and (6) motivation. Even with only six items to rank, our statistical analysis supports the acceptance of H_2, based on the high correlation and low Cohen's d for effect size.

On the 15 questions on organisational capacity, overall, the average of the scores for men across all 15 questions was 0.130 points higher than for women, and higher than the minimal difference of +0.007 points in the 2020 data. On each question, the difference was less than half a point on the Likert scale. On the basis of the high correlation and significance we accept H_3, albeit we need to note the moderate effect size.

As to age, the differences between the scores for the 21–25-year-old age group vs. 26 years and older were somewhat higher than differences by gender. Additionally, the differences were higher than the same difference in the 2020 sample. The older group had on average 0.34 point (vs. 0.19 points difference in the same direction as in the 2020 sample) higher scores. However, we are not comfortable drawing strong inferences on how age reflects on the responses since the respondents' ages are grouped in a relatively narrow range. The scores suggest that age may be a contributing factor to organisational capacity, possibly linked to experience.

Findings through replication

Conducting a replication survey approximately 3.5 years after the initial study provided new insights that did not emerge from the original sample. Access to the original 2020 survey dataset allowed for statistical comparison and analysis between the two surveys.

We now have a firmer view that in terms of organisational capacities, human resources and motivation are perceived relatively as the strongest, and financial capacity as the weakest. Furthermore, security issues were identified in the literature in the first survey (Camarador & Teinilä, 2023), but they were more clearly visible in the narrative commentaries in the 2023 replication survey.

Validity and reliability

There are issues which could affect the reliability of our data and validity of our findings. While it may seem that a short outdoor session can increase participants' perceived competence and willingness to teach and take outdoor activities, according to findings of Barrable and Lakin (2020), we need to make the following caveat. The responses may have been affected by the workshop and orienteering activity preceding the distribution of the survey. These activities could have influenced the participants' views on orienteering or their motivation to participate in it in the future. As the survey was administered immediately after an orienteering event, that event itself may have generated knowledge and positive sentiments towards orienteering by the respondents. Therefore, it is necessary to ask if such effect is lasting. For example, in political media studies, there is considerable debate over that lasting nature (or lack of it) of framing effects, as discussed in Lecheler and de Vreese (2011). Also, in labour market experiments, Gneezy and List (2006) documented that gift treatments yielded only short-term positive effects. This suggests a need to investigate motivations of potential orienteering developers in more detail and longitudinally.

The data, however, remains valid. Firstly, the workshop and orienteering event helped respondents gain a better understanding if orienteering might be interesting to them, and what effort participation in such an activity could demand. Thus, we believe the prior activities put the participants into a better position to provide meaningful responses. Second, to mitigate this risk in the data, our analysis focused on the data at an ordinal scale, meaning that we primarily focused on the which aspects of motivation or interest are ranked ahead or behind other factors, and which organisational capacities are reported as stronger or weaker relative to others, without taking the scores as absolute measures. Given that we surveyed a market where orienteering is a new and very small sport in the Philippines, we assume that capacities to organise it cannot be very strong. Therefore, it may be more useful to understand which capacities in relative terms are a lesser or bigger challenge to develop.

We also need to address if this was a convenience sample, which, as a concept, is, for example, criticised by Hooghe et al. (2010). Our sample does not represent the general population, and rather a targeted subgroup, namely potential orienteering developers which can be found amongst orienteering novices in this nascent sport. We consider this as targeted sampling of the relevant population and not a convenience sample despite the presence of students. The high response rate or usable information, almost 100%, strongly mitigates the risk of response bias (see e.g. Van Der Stede et al., 2005). Furthermore, the responding students did not gain any study credits for their participation. Also, our sample included non-students whose presence in sampling is strongly suggested by Hooghe et al. (2010). Libby et al. (2015) emphasises that the selection of participants shall match the goal of the study as well as the institutional features. Considering this, we believe there are no sampling issues in our study. In addition to that, the survey was anonymous and provided a safe medium to express one's opinions without being exposed. Thus, we consider the data as a true expression of interest to engage in the new sport.

Orienteering is considered to offer a number of benefits that are identifiable with the main elements of the Self-Determination Theory; competence, autonomy, and relatedness, and the different types of motivations. Future studies could be guided by Self-Determination Theory (Deci & Ryan, 2008) to provide deeper insights. The Self-Determination Theory proposes that motivational behaviour is dependent on the satisfaction of certain psychological needs, i.e., the opportunities to experience autonomy, competence, and relatedness (Deci & Ryan 2008). Dettweiler et al. (2015) suggest that outdoor education is a perfect starting point to promote the didactical approaches using concepts of autonomy and competence imparting 'hands-on' teaching science. In the context of Norwegian college students taking outdoor courses, Jakobsen (2023) found that students who enrolled in outdoor life programmes were largely influenced by intrinsic motivation and the two most autonomous forms of extrinsic motivation. Furthermore, in a study of secondary school pupils (12–16 years of age), Wang et al. (2004) found that intrinsic motivation positively predicted pupils' satisfaction levels of an outdoor course.

Uzuner et al. (2024) concluded that orienteering can be used as an educational purpose and tool, especially in primary education. Also, Yıldız et al. (2017) reported that outdoor orienteering camps can significantly influence the physical and social development of adolescents, especially in the age range between 13 and 19, fostering aspects of self-confidence, autonomy, and relatedness. In Italy, orienteering is used in some educational settings as an interdisciplinary approach to achieve goals of subjects such as Physical Education, Mathematics, Nature, Geography, and Biology (Tammaro et al., 2017).

Our data shows that relatedness featured strongly in the responses. On average, participants joined the event with 5.49 friends and acquaintances. On questions of how the respondents experienced the orienteering event, as well as on their interest to engage in orienteering going forward, scores on five questions that are linked to relatedness (e.g. interest to bring friends to orienteering, willingness to recruit volunteers) averaged 3.45 (maximum 4.00), and well above the average of 3.20 of the constructed scores on organisational capacities.

On autonomy and competence, our survey asked about the enjoyment of the orienteering task with mental and physical challenge, the interest to engage in orienteering map development, and the interest to learn coaching skills for orienteering. On these three questions, the average score was also high at 3.64, suggesting that orienteering can provide opportunities to learn skills leading to experiences of autonomy and competence.

In narrative responses to the question of why the respondents joined the orienteering event, 34% included personal enjoyment, fun, and curiosity, pointing towards intrinsic motivation. However, 21% of the responses also included the reason that orienteering is a part of curriculum, pointing towards extrinsic motivation. We interpret these observations as indicating that for participants, orienteering offers aspects for self-development aligned with the Self-Determination Theory. We consider that developing a better understanding of the elements of motivation of the potential Philippine orienteering developers can produce more practical information on how to recruit a sustainable body of volunteers for the sport.

Additionally, longitudinal studies tracking the development of orienteering in new markets over time could provide practical insights into the patterns of how this new sport spreads. Another promising avenue for research is the review of existing surveys on motivations and interests in orienteering conducted in other countries. We are aware of such studies in at least 12 countries. A comparative analysis of these surveys could offer valuable insights into orienteering participation and development above a local or national context.

5. CONCLUSIONS

Our main theoretical research outcome was the confirmation of our hypotheses, reinforcing the findings of Camarador and Teinilä (2023). Our other findings are of twofold nature: first, implications for future research, and second, implications for orienteering developers in the Philippines.

As to the replication nature of this study, the survey data helped strengthen the findings of Camarador and Teinilä (2023) by confirming our hypotheses and providing a more nuanced view of the motivations and organisational capacities of potential orienteering developers in the Philippines.

Future research could explore what motivates novices to participate in orienteering as athletes and organisers, as well as the key obstacles to their involvement in developing the sport. This survey's design was primarily based on literature on organisational capacities in volunteer-based and non-profit sports and leisure activities. As a result, the structure of respondents' motivations was not examined in depth through a specific motivational theory. This presents an important opportunity for further research to better understand the nature and strength of potential orienteering developers' motivations.

For developing orienteering in the Philippines, we have following recommendations. Since financial capacities were ranked as the relatively lowest capacity, the development should use low-cost means, and not start by aiming at the high (and expensive) technological standards set for international orienteering events. To address this, a programmatic approach that engages both individuals and institutions in collaboratively building the sport could create economies of scale, facilitating its growth. Second, given the motivation found in the enjoyment of orienteering, events should de-emphasise high technical challenges, and focus on providing suitable and safe courses for participants with low skill levels so that they are not deterred by challenges of elite courses. The limited accessibility of orienteering terrain in the Philippines – where many forested areas are not accessible, or unsuitable for traditional forest orienteering, suggests that university campuses and other urban locations present the best opportunity for events in urban (sprint) orienteering.

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