Challenges for sport organisations developing and delivering non-traditional social sport products for insufficiently active populations

Kiera Staley,[1] Alex Donaldson,[1] Erica Randle,[1] Matthew Nicholson,[1] Paul O'Halloran,[1] Rayoni Nelson,[2] Matthew Cameron[2]

Regular physical activity is a leading factor in promoting good health and preventing chronic disease,[1] and physical inactivity is a major contributor to the global burden of disease.[2] In Australia, more than 30% of all adults are insufficiently active;[3] 81% of children do not meet the physical activity guidelines;[4] and physical inactivity is responsible for 2.6% of the total burden of disease and injuries.[5] The term 'insufficiently active' refers to people who do not meet the Australian Physical Activity Guidelines.[6]

The Australian Federal Government recently released a sport-based strategy (Sport 2030) aiming to reduce the number of physically inactive Australians by 15% by 2030.[7] At a state level, the Victorian Health Promotion Foundation (VicHealth), a statutory authority focused on promoting good health and preventing chronic disease, has a strategic imperative to get 300,000 more Victorians engaging in physical activity by 2023.[8] Between 2015 and 2018, VicHealth endeavoured to encourage the engagement of new participants not interested or able to participate in traditional sports[9] by investing in two programs – the State Sport Program (SSP) and the Regional Sport Program (RSP) – to facilitate the development of new sport products or scale their existing, flexible, non-traditional social sport products to target insufficiently active members of the community. For the purposes of their program work with sports organisations, and to aid communication with the general public, VicHealth also divided those classified

Abstract

Objectives: To explore the challenges that Victorian sporting organisations experience when developing, delivering or scaling non-traditional social sport products to engage insufficiently active people.

Methods: Online Concept Mapping was used to gather qualitative data and analyse it quantitatively.

Results: A total of 68 participants (27 organisations) brainstormed 158 challenges. The research team synthesised these to 71 unique challenges for participants to sort into groups and rate for importance (0–5) and ease of overcoming (0–5). A nine-cluster solution – *Deliverers*; *Capacity to drive the product*; *Facilities and partnerships*; *Product development*; *Sustainable business model*; *Marketing to insufficiently active*; *Attracting the insufficiently active*; *Clubs and volunteers*; and *Shifting traditional sport culture* – was considered most appropriate. Participants rated the *Deliverers* challenges as the most important (mean=3.52), and the *Marketing to insufficiently active* challenges as the easiest to overcome (2.72).

Conclusions: Key ingredients to successfully developing and delivering non-traditional sport opportunities for insufficiently active populations are: recruiting appropriate product deliverers; building the capacity of delivery organisations and systems; and developing products relevant to the delivery context that align with the needs and characteristics of the target population.

Implications for public health: A system-wide response is required to address the challenges associated with sport organisations developing, scaling and delivering innovative social sport products for insufficiently active populations.

Key words: concept mapping, sport organisations, insufficiently active, social sport products, physical activity

as insufficiently active into 'somewhat active' and 'inactive'.[10]

The aims of the SSP and RSP align with previous calls for policy makers to view informal sports as an opportunity to encourage new user groups to engage in sport and physical activity,[9] and to respond to shifting physical activity participation trends in Australia. These trends, which are also evident internationally,[11,12] have included

stagnant or declining participation in many organised and team sports alongside a growth in informal and lifestyle sport and physical activity participation.[13-15] There is a growing demand for opportunities to participate in sport that is social, flexible and non-competitive, fits in with busy lifestyles, and focuses on achieving personal health and social objectives, rather than winning and competition.[13] In short, more people

want sport opportunities that fit in with their lifestyle, rather than having to fit their lifestyle around sport.[13]

Sport organisations need to provide opportunities that appeal to insufficiently active people, reflect the shift towards more flexible, social offerings, and can leverage the established latent sport delivery infrastructure and systems if they are to achieve government goals of addressing population-level physical inactivity through sport. This paper explores the challenges that a group of sport organisations experienced when they developed and delivered new products, or scaled existing social versions of their sport, for insufficiently active people. It focuses on 21 Victorian State Sporting Associations (SSAs), which are the state governing bodies for sports in the Australian state of Victoria and nine Victorian Regional Sports Assemblies (RSAs), which are organisations located in regional areas of the state that are responsible for supporting community sport and recreation groups within their region. These bodies were funded by VicHealth between 2015-18 through the SSP and RSP, respectively, to develop and deliver – or scale – social sport products to insufficiently active people.

The number and type of products developed or scaled for SSP (range 1–10 products per organisation) and RSP (range 10–38 products per organisation) varied across the 30 funded organisations. They varied in terms of: 1) delivery models (from set session times and season lengths requiring commitment by participants to attend all sessions, to come-and-try days or pay-as-you-go sessions requiring no regular commitment); 2) business models (for example, centralised delivery by paid sport staff; contracting third party deliverers such as personal trainers; paying school or community recreation facility staff to deliver social sport products in their facilities; or using volunteer coaches to deliver social sport products at community club facilities); and 3) different program activities (such as modified games of a traditional sport; skill-based sessions; fitness-based training using core elements of a sport).

For example, RSAs partnered with Netball Victoria to scale their existing Rock Up Netball products in regional locations through three delivery models: a social netball game; a netball-based training session; and a round-robin event day. Participants could just 'rock-up' without pre-registering or committing to

playing or training every week. By contrast, Triathlon Victoria developed TRIactive, a six-week program for beginners with an interest, but limited experience, in triathlon. Program participants trained twice a week as a group and aimed to complete a triathlon at the end of the program. For more information about the number of social products developed and scaled up by each SSA, see Supplementary Table 1 and https://www.vichealth.vic.gov.au/programs-and-projects/vichealth-state-sport-program

Research findings support exploring and promoting physical activity participation from a system or ecological perspective.[16] However, most physical activity research has focused on individual participants,[17,18] and the relatively small amount of institutional- or organisational-level research has been conducted in school, community and healthcare settings,[18] with an emphasis on environmental and policy-based interventions.[17] To the best of our knowledge, no previous research has been published on the promotion of physical activity at the organisational level from the perspective of sport organisations that develop and deliver social sport products, and have a focus on increasing participants' physical activity levels.

Although most published physical activity research has explored the frequency, patterns, correlates or predictors of physical activity,[19] more recent studies explore the barriers and facilitators to implementing physical activity interventions.[20–26] This research was conducted across a range of settings including schools,[25] youth-serving organisations,[20] and healthcare settings.[26] To date, no previous published research has explored the barriers or facilitators to developing and implementing physical activity interventions in community sport settings.

To fill these gaps in the extant literature, and help address the paucity of research examining how informal participation fits with traditional sport development structures and systems,[27] this research explored the challenges that sport organisations experienced when developing and delivering social sport products to engage insufficiently active people in regular physical activity. The findings of this study can be used to leverage the considerable infrastructure and resources already invested in sport organisations, to respond to changing trends in physical activity participation, and to tackle the

growing proportion of the population who are insufficiently physically active in Australia.

Methods

As a component of the process evaluation of VicHealth's investment in the SSP and RSP, we were interested in integrating the applied knowledge of practitioners (i.e. of sports that developed and delivered social sport products) with the scientific knowledge of researchers and policy makers (i.e. VicHealth). Therefore, we employed Concept Mapping (CM), a mixed-method participatory approach to gather qualitative data and analyse it quantitatively.[28,29] The key CM steps of preparation, ideas generation (brainstorming), statement structuring (sorting and rating), and concept mapping analysis, are described in detail elsewhere.[30] We used the Concept Systems Global MAX™[31] web platform to undertake this study.

Sample selection and recruitment

In mid-March 2018, we invited multiple contact people (total N=70: RSA=32, range=2–7 per organisation; SSA=38, range=1–4 per organisation) from each of the 30 organisations funded through the RSP/SSP to participate in the CM exercise. All participants were identified by VicHealth as integral to the development and delivery of the social sport products within their funded organisation. The emailed invitations were sent to all participants simultaneously and included a hyperlink to the online brainstorming. Several reminder emails were sent to all potential participants before the ideas generation step closed after 14 days.

Before undertaking their first CM activity, participants provided online consent (implied by self-registering to participate in the study), and were asked to describe: their gender; the type of sport organisation they worked for; how long they had worked for the organisation; their position within the organisation; and how long they had been working on developing and delivering social sport products funded through the RSP/SSP. All background questions were categorical with multiple choice responses.

Data collection

The focus prompt used to brainstorm ideas in this study was: "Based on your experiences of the RSP/SSP, what challenges are there to designing, developing and delivering a

successful program to engage inactive and somewhat active people in sport or physical activity?" The two rating instructions used were: "On a scale from 0 (least important) to 5 (most important), how important is overcoming this challenge for program success?" and "On a scale from 0 (hardest) to 5 (easiest), how easy is this challenge for your organisation to overcome?"

We asked participants to brainstorm as many single-thought statements as they could in response to the focus prompt (see above). As is usual practice in CM studies, participants could review the statements other participants made, and access the online platform multiple times.

After the brainstorming had been completed, the authors (KS and AD) conducted multiple rounds of synthesising and editing the brainstormed statements to: delete statements unrelated to the focus prompt; split compound statements; identify statements that represented the same idea, and select the statement that best captured the essence of the idea; and edit statements to reflect an agreed meaning. This iterative process involved all members of the research team and continued until there was consensus that the final statement list contained a manageable (i.e. not so many statements that participants would be unwilling to sort and rate them all) set of unique (i.e. each idea was represented once), clear and pertinent ideas. We cross-referenced the final and original sets of statements to ensure all relevant brainstormed ideas were represented in the final set of statements.

We invited all RSA and SSA contacts (N=70) to participate in the statement structuring, even if they had not participated in the brainstorming. Multiple reminder emails were sent to anyone who had not responded or completed the sorting and rating tasks over 14 days in early May 2018.

During the statement structuring process, each participant sorted the randomised synthesised statements into groups that made sense to them. They were instructed to group statements according to similarity in meaning, and to name each group based on its theme or contents. Participants could create single-statement groups if they thought a statement was unrelated to all other statements. They were asked to put every statement somewhere, and to avoid creating 'miscellaneous' or 'other' groups. They were also informed that 5 to 15 groups usually work well to organise the number

of statements they were asked to sort. Participants were also instructed to rate each challenge on 'importance' and 'ease of overcoming', using the full six-point scale (0–5), relative to the other challenges in the list.

Data analysis

During data analysis, we created a square symmetric similarity matrix from the sorted data, before applying two-dimensional non-metric multidimensional scaling to locate each statement as a separate point on an X–Y 'point map'. We then used hierarchical cluster analysis to partition the point map into groups of statements creating a 'cluster map'. A detailed description of the multidimensional scaling, including the stress index calculation, and hierarchical cluster analysis used in the Concept Systems Global MAX™[31] web platform, is available from Kane and Trochim (pp. 87–100).[28] We also calculated mean importance and ease of overcoming ratings for each statement, and used them to generate a 'go-zone' graph, in which we plotted each statement's mean ratings on a graph divided into four quadrants using the overall mean of each rating as the axes.

To select the most appropriate number of clusters, the research team followed Kane and Trochim's recommended process,[28(pp101-103)] examining the cluster maps for a 6-cluster solution through to a 12-cluster solution and paying particular attention to which clusters of statements were split as the number of clusters increased. This negotiated process was used to identify the cluster level that the research team believed retained the most useful detail between clusters, while merging those clusters that seemed to logically belong together. After agreeing on the most appropriate cluster level, statements that subjectively seemed to belong in an adjacent cluster were identified and reassigned to the more appropriate neighbouring cluster.[32]

Ethics approval for this study was given by the Human Research Ethics Committee of La Trobe University (Application Number: E15-081 Modification).

Results

Sixty-eight individual participants from 28 of the 30 funded organisations contributed CM data: 57 in the ideas generation, 55 in the statement sorting, 60 in the importance

rating, and 57 in the ease of overcoming rating. Forty-three participants contributed data in all phases, while three contributed to the ideas generation only.

Thirty-eight participants represented 19 SSAs (mean 2.0 participants per organisation, range 1–4, mode 2) while 30 participants represented nine RSAs (mean 3.3, range 2–6, mode 2 and 4). Just over half (53%) of participants were male, and more than three-quarters described their position as a program coordinator (60%) or an executive officer (19%). Half (50%) of the participants had been employed with their current organisation for three years or longer, and nearly three-quarters (72%) of participants had worked on the RSP/SSP program for 12 months or longer. Full details of the participants are available in Supplementary Table 2.

The participants brainstormed 158 challenges in response to the project focus prompt. The research team synthesised and edited these to 71 unique challenges for participants to sort and rate (Table 1). Fifty-five participants sorted the 71 challenges into groups (mean=7.65 groups; mode=7 groups (11 participants); range 4–12 groups).

The mean importance rating for all challenges was 3.34 out of 5 (Table1). Challenges in Cluster 1 (*Deliverers*) were rated the most important (3.52), while those in Cluster 9 (*Shifting traditional sport culture*) were rated the least important (2.83). The mean ease of overcoming rating for all challenges was 2.40. Challenges in Cluster 6 (*Marketing to insufficiently active*) were rated the easiest (2.72), and those in Cluster 5 (*Sustainable business model*) the hardest (1.98) to overcome.

The research team agreed that a 9-cluster solution: *Deliverers* (10 challenges); *Capacity to drive the product* (6 challenges); *Facilities and partnerships* (5 challenges); *Product development* (12 challenges); *Sustainable business model* (10 challenges); *Marketing to insufficiently active* (5 challenges); *Attracting the insufficiently active* (9 challenges); *Clubs and volunteers* (12 challenges); and *Shifting traditional sport culture* (2 challenges) retained the most useful detail while merging those clusters that seemed to logically belong together (see Figure 1). The distances between the individual points on the cluster map (Figure 1) represent the degree of similarity between challenges (i.e. the challenges grouped together by

Table 1: Statements generated during the concept mapping brainstorming process including the cluster in which each statement fits, mean importance and ease of overcoming ratings and go-zone graph quadrants for each statement.				
		Mean rating		Go-zone quadrant[b]
		Importance[a]	Ease of overcoming[a]	All statements	Within cluster
Cluster 1: Deliverers		**3.52[c]**	**2.61[c]**		
5	Finding a deliverer who can engage with your target market.	4.29	2.64	1	1
19	Finding the right deliverers with the capacity (time, skill, space).	4.28	2.24	2	2
25	Existing providers/delivers are stuck in their ways and won't adapt to change.	3.03	2.51	3	4
29	Educate existing providers/deliverers on the formalities of the product.	3.18	3.12	3	3
35	Understanding the need to get product deliverers involved in resource and product development.	3.13	2.83	3	3
43	Getting our providers to run the product in the designed way.	3.17	2.92	3	3
46	Finding an appropriately skilled deliverer that can engage the target market at a cost that suits.	3.92	2.25	2	2
49	Convincing deliverers to take a risk and do something differently ('break the rules'/challenge existing structures across all levels).	3.22	2.49	3	4
59	Engaging deliverers that understand the barriers to participation.	3.88	2.81	1	1
71	Developing models that don't require trained accredited facilitators/coaches.	3.12	2.31	4	4
Cluster 2: Capacity to drive the product		**3.49[c]**	**2.42[c]**		
2	Identifying clubs with the capacity to ensure product sustainability.	3.89	2.90	1	1
8	Community sport organisations not understanding the role of the SSA/RSA in the implementation of the product.	2.67	3.00	3	3
52[e]	Challenges around staff turnover and losing momentum because product development takes time; research, development, testing, recruitment, retesting, sustainability.	3.25	2.10	4	4
54	The recruitment of participants into products is highly dependent on the quality of partnering 'gatekeepers' (agencies and organisations) who introduce their members into products.	3.45	2.51	1	3
56	Finding local drivers to ensure products are sustained.	4.02	2.12	2	2
67	Ensuring that clubs persist with a product and do not become discouraged with a slow start or low initial interest.	3.72	1.95	2	2
Cluster 3: Facilities and partnerships		**3.43[c]**	**2.33[c]**		
13	Managing expectations of partners.	3.02	2.92	3	3
18	Developing sustainable supports around the delivery of the product (i.e. Councils, local business, other sports, schools).	3.89	2.00	2	2
33	Ensuring products continue as RSA/SSA involvement is withdrawn.	4.14	1.54	2	2
63	Facility access was a huge barrier as the traditional model of our sport takes priority.	2.92	2.49	3	3
68	Access to adequate venues (e.g. with lights).	3.20	2.75	3	3
Cluster 4: Product development		**3.40[c]**	**2.62[c]**		
3	Making sure the product is different enough from your usual offerings whilst not losing what the sport is all about.	3.02	3.20	3	3
7	Creating a product that people with little to no interest in sport/rec, who have sometimes had bad experiences, find interesting, enticing, and safe.	4.11	2.00	2	2
17	Appropriate time to consult with communities and to then implement products around a variety of needs/expectations.	3.67	2.19	2	2
22	Designing a flexible product that caters for degrees and types of disability, and individual capability and capacity.	3.67	2.63	1	1
24	Developing products to suit the different regions. When each community/town is different in what is available and the people who work within it.	3.16	2.75	3	3
28	Implementing new and/or adapting existing administration systems for social participation products.	2.67	3.07	3	3
30	Developing a Social Participation Strategy that includes a social player/team pathway.	2.79	2.62	3	3
36	Ensuring products that are social are also flexible (time, cost, insurance, membership, scheduling, competitiveness).	3.90	2.44	1	2
44	Ongoing engagement/feedback with the market when designing/developing the product.	3.73	2.85	1	1
50	Ensuring the product is simple and easy to understand for someone new to the sport.	3.88	3.19	1	1
51	Creating something truly original and engaging in an already crowded health and fitness marketplace. The average person is now so much more adept at 'self-exercising' and has the YouTube world as their oyster.	3.23	2.12	4	4
53	Having an infrastructure that is based on competition makes it challenging to provide the ongoing participation for those wanting casual and recreational opportunities.	2.98	2.34	4	4
Cluster 5: Sustainable business model		**3.40[c]**	**1.98[c]**		
1[d]	The balance between the need for immediate results and sustainable long term participation (e.g. time to research the needs of the community and design a product that fits that need).	3.82	2.20	2	1
6[d]	Engaging inactive and somewhat active people to participate, while ensuring a sustainable business model.	3.79	1.56	2	2
14	Insurance is tied to traditional sport products/models, and there is little flexibility with the majority of insurances to allow casual or flexible participation.	2.24	2.88	3	3
15	Building a critical mass for the running of, and social enjoyment of an activity.	3.15	1.88	4	4
37	The need for different Business/Revenue models (depending on location, facility owner, host club/council/etc.).	3.15	2.53	3	3
39	Products' and 'Programs' alone are not enough... we need to address systemic issues as a sector (e.g. cost, access, attitudes etc.).	3.47	1.68	2	2
41	Transitioning inactive or somewhat active people from introductory into ongoing participation (e.g. club products).	3.60	1.44	2	2

		Mean rating		Go-zone quadrant[b]	
		Importance[a]	Ease of overcoming[a]	All statements	Within cluster
45	Ensuring sufficient numbers at products when offering a flexible attendance policy creates uncertainty and impacts on a successful product.	3.60	1.73	2	2
65[d]	Finding the right cost structure to enable sustainable delivery post a funded pilot/trail, particularly in low SES & isolated towns.	3.58	2.03	2	1
69[d]	Sustainability - transition from free or low cost to full fees (needs to be considered upfront and communicated during initial products).	3.48	2.05	2	1
Cluster 6: Marketing to insufficiently active		**3.34[c]**	**2.72[c]**		
27	Developing a social marketing strategy that showcases the concept in its new social non-competitive format to entice the participant.	3.18	2.90	3	3
32	Ensuring the value proposition (benefits/sales pitch) is appropriate to the market.	3.67	2.68	1	2
40	Designing a marketing strategy targeting the inactive cohort (where relevant the strategy supports member clubs).	3.46	2.24	2	2
60	A lack of marketing expertise within the project team.	2.93	3.14	3	3
61	Resources (budget allocation) for marketing and promotion to create an ongoing awareness and participant recruitment campaign.	3.47	2.63	1	2
Cluster 7: Attracting the insufficiently active		**3.21[c]**	**2.14[c]**		
11	Participant lack of confidence and self-esteem.	3.05	2.42	3	3
16	At times, the products attracted the 'sports engaged' to play more sport.	2.51	2.83	3	3
20	Hard to get participants to commit to coming on a regular basis - regardless if it was free or low cost.	3.61	1.56	2	2
23	Consulting with the less active cohort to understand their motivations.	3.89	2.19	2	1
38	A modified form of a traditional sport is of no interest to this cohort because of their previous personal experiences with sport and clubs.	2.68	2.44	3	3
42	Changing the mindset of the target participant on what 'sport' is to include social sport.	3.57	1.92	2	2
47	Mobilising the inactive/someone active target market … getting them from 'contemplating' physical activity to actually showing up.	3.95	1.25	2	2
58	As a lot of "Active" players are already engaged in this product, it can be very confronting and competitive for a "non-active" player. They might attend 1 session but not return the following week.	3.02	2.54	3	3
66	Too big a step for participants, from nothing to sport-based activity.	2.62	2.27	4	3
Cluster 8: Clubs and volunteers		**3.18[c]**	**2.42[c]**		
4	Club people are not the right people to engage with this cohort.	2.61	2.88	3	3
9	Limited volunteer base.	3.31	2.22	4	2
12	Making sure it is not overly time intensive to organise for volunteer clubs.	3.59	2.36	2	2
21	Lack of club involvement or engagement in modified sports.	3.15	2.25	4	4
26	Limited expertise, knowledge and skill of volunteers.	2.84	2.71	3	3
31	Individuals in leadership positions, rather than the whole club/committee agree the club will deliver the product, but don't support club members to implement.	3.08	2.47	3	3
34	Many clubs/associations struggle to implement their 'core business' (eg. field teams and committee roles). Therefore implementing social and modified sport products is not on their agenda.	3.52	1.66	2	2
48	Club volunteers being targeted by multiple organisations with various priorities; when the priority is club admin, compliance, then everything else.	3.17	1.92	4	4
55	Volunteers struggled to see the benefits of social and modified sport to the club.	2.78	2.42	3	3
62	Engaging clubs/deliverers in the vision.	4.02	2.53	1	1
64	Getting the clubs across the state to deliver the same product.	2.37	2.80	3	3
70	Identifying club characteristics required for them to have the capacity to deliver the product successfully.	3.68	2.95	1	1
Cluster 9: Shifting traditional sport culture		**2.83[c]**	**2.43[c]**		
10	We're not geared to deliver to the inactive / somewhat inactive as our membership base is traditionally focused on current participants / active people.	2.59	2.54	3	3
57	Shifting the thinking of the sport community that the social products are not there to recruit people to our traditional formats.	3.10	2.32	4	2
For all statements		**3.34[c]**	**2.40[c]**		

Notes

a: 0 (least important/hardest to overcome) to 5 (most important/easiest to overcome); ^60 participants rated all 71 statements for importance and 57 rated all 71 statements for ease of overcoming

b: Go Zone Quadrants: 1 (Top right = above mean for both importance and ease); 2 (Bottom right = above mean for importance and below mean for ease); 3 (Top left = below mean for importance and above mean for ease); 4 (Bottom left = below mean for both importance and ease)

c: mean importance/ease rating for all the statements in the cluster

d: Reassigned from Cluster 1 to Cluster 5

e: Reassigned from Cluster 7 to Cluster 6.

more participants are located closer to each other on the map). For example, challenges #9, #31 and #55 were considered so closely related that nearly all participants grouped them together. By contrast, challenges #61 and #71 were considered so unrelated that almost no one grouped them together. The stress index – a representation of how well the two-dimensional map reflects the square symmetric similarity matrix generated from the sorted data – was 0.24, close to the average stress value across a broad range of CM projects.[28] A full list of the challenges within each cluster, including the five challenges that were reassigned to neighbouring clusters to which there was a better conceptual fit, is provided in Table 1.

Figure 2 is a go-zone graph for all 71 challenges. The 'go-zone' quadrant of challenges in the top right contains the 12 challenges that were rated above average on both importance and ease of overcoming. The go-zone graph quadrant for each challenge (when all challenges and when challenges within the same cluster only are considered) is provided in Table 1. To aid interpretation of the go-zone graph, see

Table 1 for the details of each challenge, including its mean importance and ease of overcoming ratings.
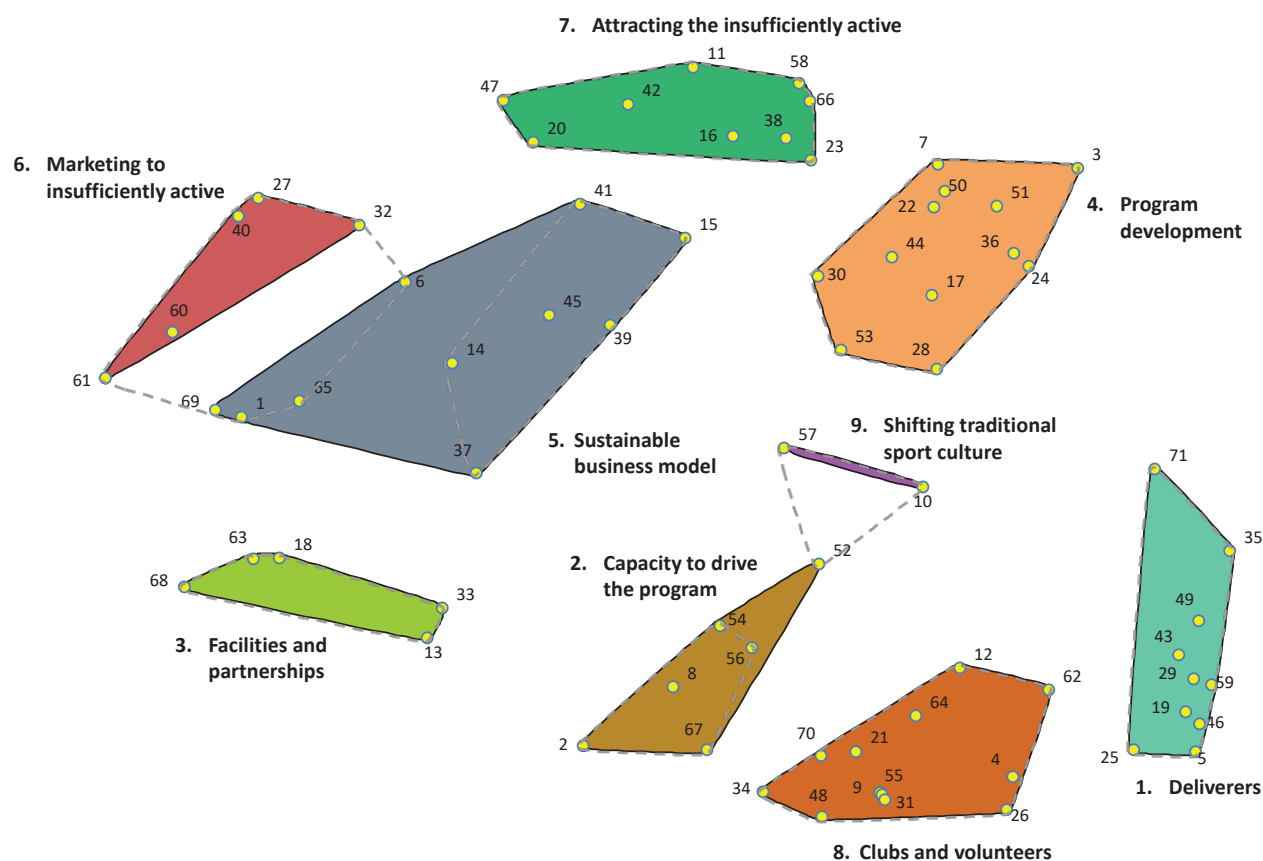
Discussion

This study is the first published investigation of the challenges faced by sport organisations when they attempt to develop and deliver – or scale – innovative, social sport products to increase physical activity among insufficiently active populations. The findings are internationally relevant, particularly in countries where trends are shifting towards more flexible and social participation in sport and physical activity (e.g. the United Kingdom and the United States),[15] and where sport development and delivery systems are similar to the Australian federated, multi-tiered, community sport-based system (e.g. Canada and New Zealand).[33]

A key strength of this study is that it draws on the reflections of three years of developing and delivering social sport products for insufficiently active populations. The study gathered data from a large number of people (n=68) with considerable experience (75%

had worked for at least 12 months, and 50% for more than two years on the RSP/SSP) who represented a wide variety of sport organisations (n=28). In addition, employing Concept Mapping enabled participants to both identify issues of interest and group them together. This overcomes some of the methodological limitations associated with previous research investigating barriers and facilitators to implementing physical activity interventions, which employed either surveys (in which participants rated their level of agreement with researcher-selected items)[23] or semi-structured interviews (in which participants' responses to open-end questions were coded and grouped by researchers).[21]

The nine clusters of challenges to developing and delivering social sport products for insufficiently active populations identified in this study span the dimensions encompassed by commonly cited ecological health promotion models.[34–36] Cluster 7 highlights the challenges related to individual participants, while Clusters 1 and 4 focus attention on the challenges involved in product development and delivery. Clusters 2,

Figure 1: A nine-cluster map of challenges to sport organisations developing and delivering social sport products for insufficiently active populations.

Note:
Dashed lines indicate clusters before statement reassignment.

3, 5, 6 and 8 identify the challenges associated with organisational capacity and leveraging partnerships to develop, attract participants to, and sustain the delivery of new, social sport products, while Cluster 9 raises broader challenges related to the culture and traditions of sport in the community. In addition, at least three challenges in nearly every cluster (except Cluster 9) are located on the right-hand side of the go-zone graph (see Figure 2), indicating that they were rated above the mean of 3.34 out of 5 for importance in overcoming to ensure product success. These findings support previous calls for multi-strategy ecological approaches to promote physical activity,[16,37] and highlight the need for change at all levels of the sports governance system to maximise participation in non-traditional sports in traditional sports settings.[27]

While acknowledging the need for a system-wide response to the challenges associated with developing and delivering social sport products for insufficiently active populations, recruiting appropriately skilled and experienced product deliverers is clearly a key challenge and an opportunity to influence program success. Not only was the *Deliverers* cluster rated as the most
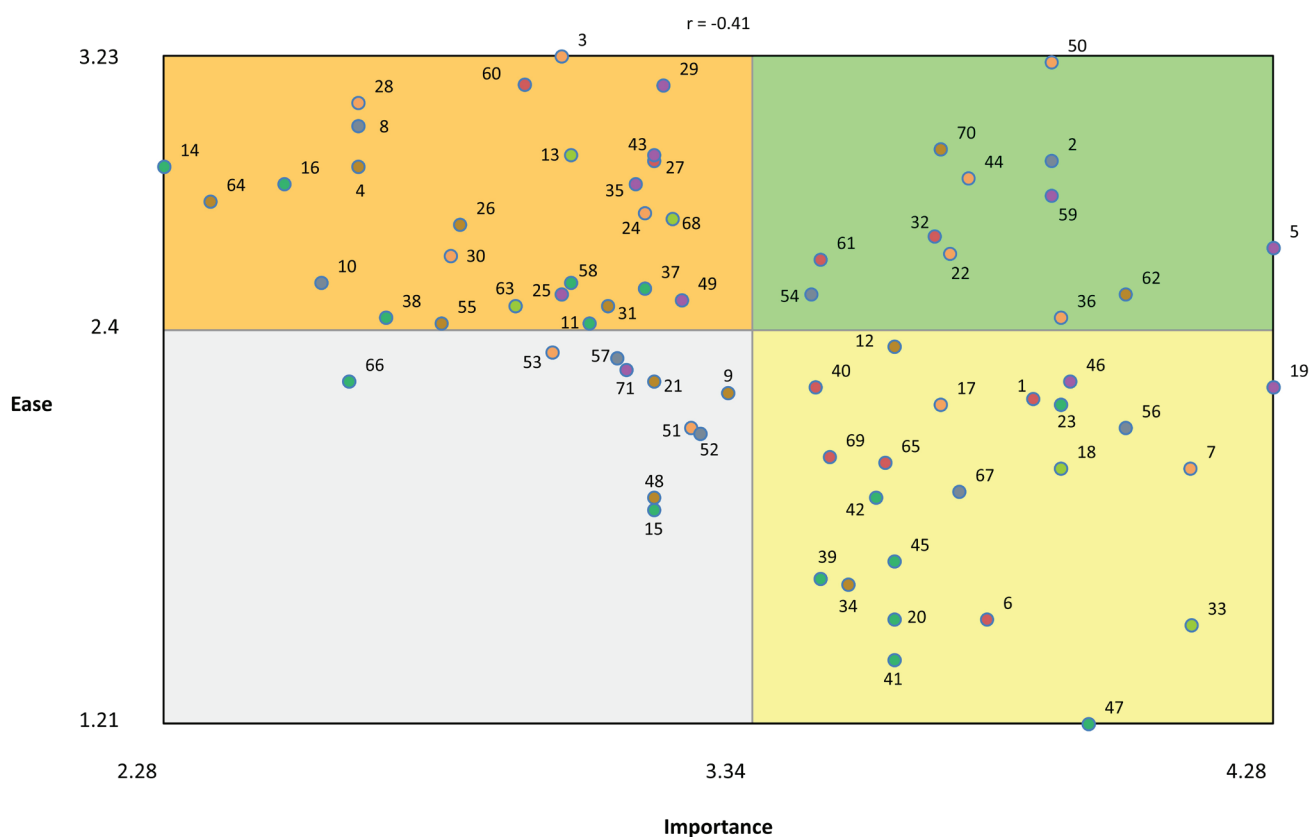
important to overcome for program success (mean=3.52/5), but the two challenges rated as the most important to overcome (Statements #5 and #19), were both located in this cluster. In addition, the *Deliverers* cluster was rated as the third easiest (mean=2.61/5) for the participating organisations to overcome. These findings suggest that sport organisations interested in or tasked with designing, developing and delivering or scaling social products to inactive people should make sure they recruit deliverers with the capacity to deliver social sport products, as well as the ability to engage with – and understand the participation barriers for – the target population. Such organisations should consider producing detailed position statements to facilitate the recruitment of appropriate product deliverers, as well as developing comprehensive orientation/ training programs to ensure all recruited deliverers have the knowledge and skill sets required.

The other two relatively important and easy to address clusters of challenges that emerge from this study are those related to *Product development* (mean=3.40 for importance and 2.62 for ease of addressing) and *Marketing to the insufficiently active* (mean=3.34 for

importance and 2.72 for ease of overcoming). The challenges within the *Product development* cluster highlight the need to ensure the social sport products being offered by sports organisations are developed in consultation with potential participants and deliverers, meet the needs of the target population (which vary across geographical locations and sub-populations) and reflect an understanding of the delivery context, and can be delivered using existing systems, resources and infrastructure. This approach is supported by well-cited health promotion planning frameworks.[38,39] The challenges within the *Marketing to insufficiently active* cluster highlight a need to improve the marketing of social sport products through a combination of resourcing and upskilling existing staff, allocating time and resources to developing appropriate marketing strategies, and recruiting staff with specific marketing expertise and an understanding of the target population.

Mapping the nine clusters and 71 challenges that emerged from this study onto the five-domain, 72-construct framework of common barriers to implementing and scaling up physical activity interventions developed by Koorts and colleagues[32] reveals that the

Figure 2: Go zone of challenges to sport organisations developing and delivering social sport products for insufficiently active populations.

outcomes of this study are well supported by highly cited implementation science explanatory frameworks. For example, Cluster 1 (*Delivers*) aligns very strongly with the Koorts and colleagues 'Implementer characteristics' domain; Cluster 2 (*Capacity to drive the product*) and Cluster 3 (*Facilities and partnerships*) align strongly with their 'Delivery setting' domain; and Cluster 4 (*Product development*) aligns strongly with their 'Intervention characteristics' domains.[36] In addition, Cluster 5 (*Sustainable business model*), Cluster 6 (*Marketing to insufficiently active*), Cluster 7 (*Attracting the insufficiently active*), Cluster 8 (*Clubs and volunteers*) and Cluster 9 (*Shifting traditional sport culture*) represent an amalgam of the constructs contained in Koorts and colleagues 'Community characteristics' and 'Process of implementation' domains.

The challenges identified in this study also reflect previously identified barriers and facilitators to implementing physical activity interventions across a range of settings, and using a variety of methods.[21,22,25] For example, the key factors that experts identified as influencing the implementation of physical activity interventions in youth-serving organisations[20] – including: available facilities, equipment, space and staff; competing programs; engaging intervention staff; provider belief, motivation, knowledge and skills about the intervention; and [program] adaptability – all align closely with the more important challenges (i.e. those in Clusters 1 to 4) identified in the current study. In addition, the challenges that emerged in this study, particularly in Cluster 5 (*sustainable business model*), Cluster 8 (*Clubs and volunteers*) and more specifically in Cluster 9 (*Shifting traditional sport culture*) reflect a previously identified need for cultural change within sports organisations to broaden the understanding of how sport is structured and the forms of sport that should be facilitated and prioritised.[27]

Concept Mapping, similar to other qualitative research methods, has methodological limitations associated with the reliability, validity and generalisability of the findings due to non-random sampling, small sample size and over reliance on the researchers' skills.[40] In this study, the project team used their subjective judgement to synthesise and edit the brainstormed statements, to select the number of clusters that most appropriately reflected the analysed data, and to reassign some statements to neighbouring clusters. Therefore, despite the project team following standard CM protocol,[28] a similar study involving the same participants but conducted by a different project team may produce different results. In addition, as this was a component of the process evaluation of VicHealth's investment, it was beyond the scope of this study to examine the effectiveness of the social sport products developed through the SSP and RSP. However, an impact evaluation to establish the effectiveness of social sport products in increasing physical activity participation among insufficiently active populations is currently being conducted and will be reported separately.

Conclusion

Understanding the challenges that sport organisations experience when developing and delivering new products or scaling existing flexible, social sport products to engage insufficiently active people is an important first step in supporting these organisations to undertake this task. Using Concept Mapping in the previously unexplored context of sport organisations, this study provides a real-world example of the importance of applying a multi-strategy, ecological approach to developing and delivering physical activity interventions. It also highlights that recruiting appropriate product deliverers, building the capacity of delivery organisations and systems, and developing social sport products relevant to the delivery context, which align with the needs and characteristics of the target population, are key ingredients to the successful development and delivery of sport opportunities for insufficiently active populations.

References

1. Australian Institute of Health and Welfare. *Australia's Health 2008*. Catalogue No.: AUS 99. Canberra (AUST): AIHW; 2008.
2. Lee IM, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT. Effect of physical inactivity on major non-communicable diseases worldwide: An analysis of burden of disease and life expectancy. *Lancet.* 2012;380:219–29.
3. Guthold R, Stevens GA, Riley LM, Bull FC. Worldwide trends in insufficient physical activity from 2001 to 2016: A pooled analysis of 358 population-based surveys with 1·9 million participants. *Lancet Glob Health.* 2018;6(10):Pe1077-e1086.
4. Australian Bureau of Statistics. *4364.0.55.004 - Australian Health Survey: Physical Activity, 2011–12* [Internet]. Canberra (AUST): ABS; 2013 [cited 2018 Sep 27]. Available from: http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/4364.0.55.004 Main%20 Features12011-nt&tabname=Summary&prodno=43 64.0.55.004&issue=2011-12&num=&view=
5. Australian Institute of Health and Welfare. *Impact of Physical Inactivity As a Risk Factor for Chronic Conditions: Australian Burden of Disease Study* [Internet]. Australian Burden of Disease Study Series No.: 15. Canberra (AUST): AIHW; 2017 [cited 2018 Sep 27]. Available from: https://www.aihw.gov.au/reports/burden-of-disease/impact-of-physical-inactivity-chronic-conditions/contents/summary
6. Australian Department of Health. *Australia's Physical Activity and Sedentary Behaviour Guidelines and the Australian 24-Hour Movement Guidelines* [Internet]. Canberra (AUST): Government of Australia; 2019 [cited 2019 May 30]. Available from: http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-phys-act-guidelines#npa1864
7. Australian Department of Health. *Sport 2030: Participation Performance Integrity Industry* [Internet]. Canberra (AUST): Government of Australia; 2018 [cited 2018 Sep 27]. Available from: https://www.ausport.gov.au/nationalsportplan/home/second_row_content/have_a_say2/Sport_2030_-_National_Sport_Plan_-_2018.pdf
8. VicHealth. *Physical Activity Strategy 2018–23* [Internet]. Melbourne (AUST): Victorian Health Promotion Foundation; 2018 [cited 2018 Sep 27]. Available from: https://www.vichealth.vic.gov.au/media-and-resources/publications/physical-activity-strategy
9. King K, Church A. Lifestyle sports delivery and sustainability: Clubs, communities and user-managers. *Int J Sport Policy Politics.* 2017;9(1):107–19.
10. VicHealth. *Physical Activity, Sport and Walking: VicHealth's Investment Plan (2014–2018)* [Internet]. Melbourne (AUST): Victorian Health Promotion Foundation; 2014 [2019 May 30]. Available from: https://www.vichealth.vic.gov.au/-/media/ResourceCentre/PublicationsandResources/Physical-activity/PhysActivity-InvestmentPlan-2014-18.pdf?la=en&hash=F87588A487798622619F6F80064473C740FD0DCC
11. Borgers J, Pilgaard M, Vanreusel B, Scheerder J. Can we consider changes in sports participation as institutional change? A conceptual framework. *Int Rev Sociol Sport.* 2018;53:84–100.
12. Laakso L, Telama R, Nupponen H, Rimpelä A, Pere L. Trends in leisure time physical activity among young people in Finland, 1977–2007. *Eur Phy Educ Rev.* 2008;14:139–55.
13. Hajkowicz S, Cook H, Wilhelmseder L, Boughen N. *The Future of Australian Sport: Megatrends Shaping the Sports Sector Over Coming Decades* [Internet]. Melbourne (AUST): CSIRO; 2013 [cited 2018 Sep 27]. Available from: https://www.sportanddev.org/sites/default/files/downloads/the_future_of_australian_sport___full_report.pdf
14. Eime RM, Sawyer N, Harvey JT, Casey MM, Westerbeek H, Payne WR. Integrating public health and sport management: Sport participation trends 2001–2010. *Sport Manage Rev.* 2015;18:207–17.
15. Gilchrist P, Wheaton B. The social benefits of informal and lifestyle sports: A research agenda. *Int J Sport Policy Polit.* 2017;9(1): 1–10.
16. Spence JC, Lee RE. Toward a comprehensive model of physical activity. *Psychol Sport Exerc.* 2003;4:7–24.
17. Bauman AE, Reis RS, Sallis JF, Wells JC, Loos RJF, Martin BW. Correlates of physical activity: Why are some people physically active and others not? *Lancet.* 2012;380:258-71.
18. Golden SD, Earp JAL. Social ecological approaches to individuals and their contexts: Twenty years of health education and behavior health promotion interventions. *Health Educ Behav.* 2012;39:364–72.
19. Milat AJ, Bauman AE, Redman S, Curac N. Public health research outputs from efficacy to dissemination: A bibliometric analysis. *BMC Public Health.* 2011;11:934.
20. Lau EY, Wandersman AH, Pate RR. Factors influencing implementation of youth physical activity interventions: An expert perspective. *Transl J Am Coll Sports Med.* 2016;1(7):60–70.
21. Mâsse LC, Naiman D, Naylor P-J. From policy to practice: Implementation of physical activity and food policies in schools. *Int J Behav Nutr Phys Act.* 2013;10:71.

22. Weatherson KA, Gainforth HL, Jung ME. A theoretical analysis of the barriers and facilitators to the implementation of school-based physical activity policies in Canada: A mixed methods scoping review. *Implement Sci.* 2017;12:41.

23. Carlson JA, Engelberg JK, Cain KL, et al. Contextual factors related to implementation of classroom physical activity breaks. *Transl Behav Med.* 2017;7:581–92.

24. van den Berg V, Salimi R, de Groot R, Jolles J, Chinapaw M, Singh A. "It's a battle … you want to do It, but how will you get it done?": Teachers' and principals' perceptions of implementing additional physical activity in school for academic performance. *Int J Environ Res Public Health.* 2017;14:1160.

25. Naylor P-J, Nettlefold L, Race D, et al. Implementation of school based physical activity interventions: A systematic review. *Prev Med.* 2015;72:95–115.

26. Huijg JM, Gebhardt WA, Verheijden MW, et al. Factors influencing primary health care professionals' physical activity promotion behaviors: A systematic review. *Int J Behav Med.* 2015;22:32–50.

27. Jeanes R, Spaaij, Penney D, O'Connor J. Managing informal sport participation: tensions and opportunities. *Int J Sport Policy Polit.* 2019;11(1):79–95.

28. Kane M, Trochim WM. *Concept Mapping for Planning and Evaluation.* Vol 50. Thousand Oaks (CA): Sage Publications; 2007.

29. van Bon-Martens MJH, van de Goor LAM, Holsappel JC, et al. Concept mapping as a promising method to bring practice into science. *Public Health.* 128:504-14.

30. Trochim WM, McLinden D. Introduction to a special issue on concept mapping. *Eval Progam Plann.* 2017;60:166–75.

31. Concept Systems Incorporated. *Concept Systems Global Max* [Internet]. Ithaca (NY): CSI; 2017 [cited 2018 Sep 27]. Available from: https://www.conceptsystems.com/gw/software

32. Mannes M. Using concept mapping for planning the implementation of a social technology. *Eval Program Plann.* 1989;12:67–74.

33. Stewart B, Nicholson M, Smith A, Westerbeek H. *Australian Sport–better by Design? The Evolution of Australian Sport Policy.* London (UK): Routledge; 2004.

34. Sallis JF, Cervero RB, Ascher W, Henderson KA, Kraft MK, Kerr J. An ecological approach to creating active living communities. *Annu Rev Public Health.* 2006;27(1):297–322.

35. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. *Health Educ Q.* 1988;15(4):351–77.

36. Koorts H, Eakin E, Estabrooks P, Timperio A, Salmon J, Bauman A. Implementation and scale up of population physical activity interventions for clinical and community settings: The PRACTIS guide. *Int J Behav Nutr Phys Act.* 2018;15:51.

37. Sallis JF, Owen N, Fisher EB. Ecological models of health behavior. In: Glanz K, Rimer BK, Viswanath K, editors. *Health Behavior and Health Education: Theory, Research, and Practice.* 4th ed. San Francisco (CA): Jossey-Bass; 2008. p. 465–86.

38. Green LW, Kreuter M. *Health Program Planning: An Educational and Ecological Approach.* 4th ed. New York (NY): McGraw-Hill; 2005.

39. Bartholomew LK, Parcel GS, Kok G, Gottlieb NH, Fernandez ME. *Planning Health Promotion Programs. An Intervention Mapping Approach.* 3rd ed. San Francisco (CA): Jossey-Bass; 2011.

40. Burke J, O'Campo P, Peak G, Gielen A, McDonnell K, Trochim W. An introduction to concept mapping as a participatory public health research methodology. *Qual Health Res.* 2005;15:1392-4.

Supporting Information

Additional supporting information may be found in the online version of this article:

Supplementary Table 1: Funded organisations and examples of products supported by VicHealth's State and Regional Sport Programs.

Supplementary Table 2: Characteristics of participants (n= 68).