Health-supporting public spaces: Exploring the potential of outdoor gyms to promote physical activity and placemaking in urban Cape Town

Cape Higher Education Consortium (CHEC) and City of Cape Town (CCT) RESEARCH PROGRAMME (2023)

Final Report

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Executive Summary:

This report provides a comprehensive evaluation of outdoor gyms (OGs) in Cape Town, utilising a mixed-methods approach that combines observational data, intercept interviews, and Geographical Information Systems (GIS) mapping across 20 sites, with complete data available for 18. The study aimed to determine the usage patterns, community impact, and health benefits of these facilities, as well as the attributes that influence their use. The research provides valuable insights into how OGs may contribute to public health and community well-being in urban settings, while also identifying areas for improvement. The study reveals several key findings regarding the demographics and usage patterns of OGs:

While OGs are used by a range of people, **men are more likely to be gym users than women**. Children are also frequent users of the equipment, but senior adults are significantly underrepresented. This suggests a need for targeted interventions which may help to engage women and older adults more effectively. OG users engage in more moderate-to-vigorous physical activity (MVPA) than non-users. This indicates that OGs are successful in promoting physical activity among those who choose to use them.

The **number of equipment stations** at an OG is the strongest predictor of use. This highlights the importance of providing a sufficient variety and quantity of equipment to attract and retain users. The mean number of equipment stations was lowest in community and smart parks (12 and 13.5 respectively), whereas recreational centres had a significantly greater number of stations.

The study also noted that nearly one third of the gym users observed were children. This may be related to the time of day and may also indicate that children use the equipment for play rather than for exercise or fitness, which raises concerns about safety and appropriateness of the equipment.

A large proportion of the equipment was found to be **only partially functional**, highlighting the need for improved maintenance and repair. This suggests that regular maintenance and inspection policies are crucial to ensure that the facilities remain appealing and safe. Most OGs (83.3%) had a Walker-Stepper or Elliptical device followed by the Leg press (77.8%), and Pullup chair (66.6%). This information could be used to make decisions about equipment procurement, especially if certain types of equipment are under-utilized or over-represented.

We also explored the impact of the built and social environments on gym usage. **Perceived safety** was a significant concern and was negatively correlated with gym use. However, the presence of **crime events was positively associated with the number of gym users**. These seemingly paradoxical findings suggest that OGs might be seen as a "safe space" within less than ideal social environments, or perhaps provide a destination that draws people despite the presence of crime in the broader area.

The **walkability** of the surrounding area also influences access and use. OGs located in areas with higher walkability indices, such as those in regional parks, recreation centres and sports grounds, tend to have better utilisation. This is because more walkable areas are more likely to be accessible.

Social cohesion is positively linked to gym use, indicating that OGs contribute to community connectivity. This finding suggests that OGs have benefits beyond physical health, and may contribute to improved mental well-being and social support. OG users were more likely to cite benefits of affordability, improved health and well-being, and reduced crime in the area. This further demonstrates the positive impact that OGs can have on their users' lives.

The study also included an economic evaluation, projecting that the OGs could prevent 827 premature deaths annually, corresponding to a substantial economic benefit of $774,000,000.00. This highlights the potential of OGs as a cost-effective public health intervention.

Based on these findings, the report offers several policy recommendations aimed at improving the effectiveness and accessibility of OGs, including:

- **Community consultation** to understand the needs of the local population before installing or upgrading OGs. This includes determining the type of facility, the types of equipment, and the need for supervision or programs.

- Providing **age-appropriate equipment**, with some specifically for children and low impact options for older adults. This includes child-friendly stations with appropriate dimensions, as well as low-impact and balance-focused equipment tailored for older adults.

- **Improved maintenance** and regular inspection of equipment and amenities. This is crucial to ensure that OGs are safe and inviting for all users.

- Enhancing **safety measures** by improving lighting, and developing community-led safety strategies. This also includes improving walkability and fencing.

- **Community involvement** in maintenance and promoting social cohesion programs to strengthen community ties. This can include fitness events and integrating the OGs into broader urban design strategies.

- Integrating OGs into broader wellness programmes. This can be achieved by partnering with schools, workplaces, and community organizations.

In conclusion, the findings suggest that outdoor gyms are a valuable resource for promoting physical activity and community well-being in Cape Town, but to maximise their potential there is a need to address issues of inclusivity, maintenance, and safety through targeted interventions. By implementing the policy recommendations, the City of Cape Town can enhance the use and impact of its OGs, ultimately contributing to a healthier and more connected community.

OGs and the linked parks and recreational facilities form an integral part of the City of Cape Town's Integrated Development Plan, particularly with reference to public spaces and amenities and working with communities to activate these spaces.

1. Background

A substantial body of evidence exists on the health benefits of living a physically active lifestyle, in particular, engaging in 2.5 to 5 hours a week of at least moderate intensity physical activity (Bull et al., 2020). However, physical inactivity and sedentary living, alongside non-communicable diseases such heart disease, diabetes, overweight and obesity, as well as mental health conditions, are on the rise (Di Cesare et al, 2020). There is a growing body of evidence concerning the impact of the attributes of the built environment, including neighbourhood walkability, availability of public open and green space, absence of litter, access to public transport, opportunities for active travel, and destinations, such as amenities and recreational facilities, on physical activity, mental well-being and social cohesion (Kepper et al., 2019, Kärmeniemi et al., 2018).


https://greenair.co.za/our-search-for-the-perfect-outdoor-gym

Amenities such as outdoor gyms (OG) are becoming increasingly popular worldwide. An outdoor gym has been defined as "fixed exercise equipment placed in an outdoor area that is freely accessible to the public, to promote structured physical activity (PA) through strength, aerobic and stretching devices (Cohen, et al., 2012; Cranney et al., 2018; Fernández-Rodríguez et al., 2021; Lee et al. 2018). A growing body of evidence on outdoor gyms exists internationally, aiming to understand how these outdoor exercise facilities are used, who is more likely to use them, and what is the potential for societal return on investment for capital and operational budgets spent (Jansson et al., 2022; Baker et al., 2020).

In an evaluation of outdoor gym use in the town of Sefton in the UK, Bates et al. (2013) explored characteristics and attitudes of gym users and non-users. Of the 162 survey respondents across 10 sites, 60% were women and the average age of respondents was 42 yrs, with over 60% reporting being regularly physically active. Between 70-80% found that OGs were "easily accessible, beneficial for their health, and enjoyable to use". The social aspect of outdoor gym use was also highlighted in the surveys and interviews, with users indicating that they enjoyed exercising with others in this setting. One barrier that was mentioned was that some persons that did not feel confident using the equipment, and that classes or in-person support might increase use and satisfaction.

Of those persons who had used the OGs in Sefton at least once, "over half agreed or strongly agreed that the outdoor gyms had an overall positive impact on their health and that since using the equipment they felt fitter or healthier, more confident when exercising and took part in more physical activity." (Bates et al., 2013). The average time spent on the gym equipment was 19 minutes, and slightly longer(22 min) for regular users (>1 x per week).

The recommendations arising from this evaluation included the suggestion that instructors be incorporated, with offerings of public exercise classes using the OG equipment. The need for regular maintenance was also mentioned, with frequent monitoring and providing more facilities associate with or in proximity to the OG, to encourage a diversity of users.

More recently, in Santiago, Chile over 1900 outdoor gyms were mapped and over 1000 individual surveys were conducted (Mora et al., 2017). Nearly two-thirds of persons surveyed lived within 500m of an outdoor gym, with the majority of these OGs located in low income settings. There was an average of 4.6 equipment stations per OG. Women were less likely to use gyms more than 5 blocks from their home, whereas men were more likely to use OGs that had sufficient equipment to provide them with a more complete workout. Just over a quarter of all persons surveyed indicated that prior to the establishment of the OGs, they were not physically active (38.7% of women). Of those persons surveyed, 70% reported now exercising 3 or more times per week in an OG.

Location and equipment were the major 'draw cards" for outdoor gym use in 18 facilities across 3 towns in Israel. The proximity of OGs to beaches and parks explained 75% of the variance in use, with the number of equipment stations explaining another 8.4% of the variance (Baron-Epel and Ran, 2023).

In a recent systematic review, Fernández-Rodríguez and colleagues (2021), characterised attributes of outdoor gyms including the average number and condition of equipment stations, location and proximity of OGs to end users, as well suggestions for improvements and upkeep.

The table below shows the main barriers to the use of outdoor gyms which were found in the systematic review by Fernández-Rodríguez et al., (2021). Issues which were most commonly raised as barriers included: bad weather, issues of maintenance, lack of upkeep, cleanliness, and safety and lack of proximity.

Table 3. Main barriers to go to an OG.

Barriers	Papers	Barriers	Papers
Cleaning	12, 13, 22	Lack PA teacher	22
Children	21,22	Lack of a roof	22
Comfort	1	Maintenance	13, 22
Crowding	21, 22	Modest machines	22
Damage machines	22	Painting	13, 22
Deck/pavement- quality	2	Safety	20, 22
Bundles and seats comfort	2	Bad weather	1,11, 21, 22
Too much distance	19, 21		

In the review, suggestions for improvement of OGs included: the need for more instructors, a greater variety of equipment stations, the provision of roofing or shelter over the equipment stations, and more signage, as well as better lighting, regular maintenance, security and the provision of toilets.

Moreover, neighbourhood attributes such as street connect-ivity, residential density, transportation hubs, land use mix, adequate lighting and safety from crime and traffic, have all been associated with greater use of local recreational facilities directly, and increased levels of leisure time physical activity (LTPA) in the neighbourhood. A systematic review published in 2018 in older adults, found positive associations between neighbourhood walkability, land-use mix, access and aesthetics with leisure time walking (Van Cauwenberg et al., 2018). As such, it is equally important to characterise the setting and neighbourhood surroundings

Using a local lens, the City of Cape Town's Recreation and Parks Department has invested in over 200 outdoor gyms across the city, with a budgetary spend in excess of ZAR30

million. These gym facilities are located in green public spaces, mainly within public parks or associated sport grounds, providing free access to the public to engage in health and recreational pursuits. The City of Cape Town continues to invest in outdoor gyms as part of the Department's recreation strategy to provide recreation facilities to the public. However to date, no evaluation on the use of and satisfaction with these gyms has been conducted.

This feasibility project has been designed to assess the usage, satisfaction perceptions and accessibility at selected public outdoor gym facilities across the city. We have established a user and non-user profile of the outdoor gym facilities provided by the city, and the extent to which outdoor gym use is associated with increased physical activity, perceived health benefits and quality of life. Finally, we have provided insight into the societal return on investment of outdoor gym facilities provided by the City

and offer recommendations to enhance their use and public satisfaction.

The project aligns to the Integrated Development Plan (IDP) of the City of Cape Town under the priority of "Public Space, environment and amenities":

- Objective 1. Quality and safe parks and recreation facilities supported by community partnerships (Quality community facilities programme).

- *Objective 2.* Recreation and parks development and activation initiative.

Therefore this study has served to evaluate, at least in part, the success of these strategic objectives to activate public spaces and increase its vibrancy through the provision of outdoor exercise equipment. Further, this study provides insight into the Community Services and Health Directorate's Live Well approach to improve healthy living through increasing opportunities for exercise in public spaces.

Finally, the project will help to address the Recreation and Parks Department's recreation strategy which includes the provision of sport and recreation facilities to the public to "promote an active citizenry, be it through formal and informal sport and active and passive recreation participation" (Sport and Recreation Policy Framework, 2016). As such, the study is well aligned with the City's work on enhancing urban health; building community resilience through addressing the stress of chronic diseases of lifestyle, hence building a more resilient population; and providing quality public spaces that the public can enjoy in their recreational time.

1.1 Project aims

The overarching aims of this project were to i) describe the socio-demographic characteristics of outdoor (OG) visitors (e.g. age group, gender, etc.) and the nature of the visits (frequency, time spent, equipment used, etc.), ii) describe the attributes of each gym (location, types/number of equipment, functional status of equipment, safety, access and aesthetics), and iii) to determine the extent to which these characteristics are associated with observed OG-based physical activity in 20 outdoor gyms, located in high, middle and low income areas of the Cape Town metropole.

The <u>specific objectives</u> of this project were:

1.1.1 To determine the pattern and volume of use of City outdoor gyms, in communities of low, middle and high socioeconomic status;

1.1.2 To determine the extent to which attributes of outdoor gyms (location, facilities and equipment, upkeep, safety, accessibility, proximity, personnel, etc.) influence the use of and satisfaction with outdoor gyms by the public;

1.1.3 To establish a user and non-user profile of the outdoor gym facilities;

1.1.4 To model the potential societal return on investment of outdoor gym facilities provided by the City and offer recommendations to enhance their use of and public satisfaction with outdoor gyms.

To achieve these objectives, we have:

- conducted an observational audit of selected outdoor gyms (setting, accessibility, types of equipment, state of equipment, availability of personnel, signage, etc.);
- conducted brief intercept interviews with both gym users and park (facility) visitors who are not using the gyms;
- assessed the outdoor gym usage and park-based physical activity by direct observation of park visitors;
- made use of open source GIS tools to map the catchment area of the gyms, to determine the number of households, as well as built environment attributes within a 1 km buffer zone of the outdoor gym;
- examined relationships between outdoor gym use and satisfaction, with environmental attributes within and surrounding the outdoor gyms; and
- conducted a cost-benefit analysis of the assessed outdoor gyms.


Cape Town-151018-Children play in the City's new park in Gugulethu. Picture Jeffrey Abrahams

https://iol.co.za/capetimes/news/2015-10-19-citys-smart-parks-project-wins-award/

2. Methods

2.1 Site selection: There were 20 outdoor gyms (OGs) purposively-selected based on demographic and geospatial priorities established by the City of Cape Town. These OGs were located in public open spaces (POS), such as public parks or recreational facilities, community centres and sport grounds. However due to safety concerns at one location and the lack of functional gym equipment at another, complete data were only available for 18 of the 20 OGs.

2.2 Observational scans and environmental audit

The System for Observing Play and Recreation in Communities (SOPARC) was adapted to document the numbers, characteristics, level and nature of any physical activity of users and non-users of the outdoor gyms, along with other areas or zones within the pre-selected sites. Prior to collecting data, an in-person training session was conducted with all fieldworkers to familiarise them with the observation protocol in order to minimise inter-observer error. In the session that was held, fieldworkers were presented with the SOPARC templates and a practical walk through of the observation protocol.

Observational scans were conducted every 15 minutes in the OG areas as well as other target zones of the POS (parks, recreational facilities, sports grounds, and public spaces) in which each OG was located. The various zones, one of which was the OG, had been demarcated prior to the visits using Cape Town Open-Source Data (Open Street Maps) URL: https://odp-cctegis.opendata.arcgis.com/ .

https://www.facebook.com/CityofCT/posts/city-hands-over-parks-in-gugulethu-and-crossroadsthree-recently-upgraded-communi/3356204927749736/

During the scans, the research team documented the gender and number of all persons (children, teens, adults and seniors) in each zone, and the level and nature of the physical activity in which they were engaged (sedentary, light, moderate, vigorous). Each site was observed on one weekday and weekend day, between 07:00-09:00, 11:00-13:00, and 15:00-17:00, by two trained observers over the period of June 2022 to September 2023. The OGs at each site were observed throughout the entire day.

Audits of gym equipment (number, type and condition of stations: non-functional, partially functional, fully functional) and related attributes of parks and recreational facility, such as aesthetics, litter, shade, benches, water fountains, toilets, and fencing, were conducted by the research team at each site. Audits were conducted for each "zone" of the recreational facilities, sport ground or park (Appendix 1).

2.3 Intercept interviews

On each weekday and weekend day of observation, the research teams approached both outdoor gym users and persons who were present in the parks or public open spaces but who were not using the gym, inviting them to complete a brief intercept interview (Appendix 2). Individuals were randomly selected to be interviewed, using either a paper-based or a Google Form-based survey which was comprised of 20 questions related to the following constructs, including: demographics, proximity to the facility, means of transportation to get to the facility, reasons for use or non-use, perceptions of the neighbourhood and facility environment, satisfaction with or suggestions for improvement of the facility, feelings of safety and the potential benefits of the gym to the broader community.

2.4 Built environment attributes of surrounding communities

We used GIS mapping to explore the relationships between the use of and satisfaction with outdoor gyms and attributes of the neighbourhood in which they were located. A 1km buffer was placed around each site using Cape Town Open-Source Data (Open Street Maps) URL: https://odp-cctegis.opendata.arcgis.com/ .

Shapefiles were created from the open source and loaded into the open-source GIS analysis (QGIS, https://www.qgis.org). This created layers to quantify the following attributes such as: transport hubs, residential density, land use mix, and street connectivity. Other attributes included: crime events and street lighting.

The term Walkability, "reflects an environment in which walking is the fundamental mode of transportation." (Southworth, 2005) Walkability was determined using Z-scores for attributes including: residential density, intersection density, and land-use mix based on residential, retail, civic space and other space. Z-scores were determined based on the mean and standard deviation of each of these attributes for all outdoor gyms and associated facilities. The formula for walkability is given:

Walkability = (2 x Z-residential density) + (Z-intersection density) + (Z-land use mix) (Adams et al., 2014)

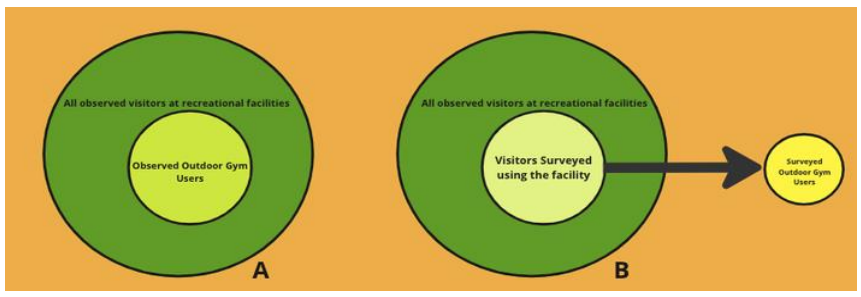
2.5 Analyses

Normally distributed quantitative data are expressed as means and standard deviations. Non-normally distributed data are presented as medians and inter-quartile ranges. Observational data were recorded as total numbers of individuals from different age and gender groups, over the two days of collection, in the OGs specifically and in the other zones, in the recreational facilities, parks or sports grounds (POS), in which the OGs were located.

To determine the pattern and volume of use of each OG; firstly all visitors observed within the POS or facility zones at 15 min intervals were observed followed by those using the OG (Figure A); secondly, visitors were randomly approached to share their experience using the facility of which a proportion were also OG users (Figure B below).

Comparisons were made between age and gender groups, and across types of facilities (community parks, regional or coastal facilities, sports grounds), using Mann-Whitney and Kruskal-Wallis tests (IBM SPSS Statistics, Version 29.0.0.0).

Nominal and ordinal data from the intercept surveys were analysed using frequency distributions (% respondents) and Chi-squared analysis between groups. Spearman's correlations and Kruskal Wallis tests were used to describe the relationships and differences between numbers of people observed and perceived attributes of the gyms and the built environment.



After initial analyses, ChatGPT was utilised to highlight the themes embedded within the "Choice" variable of the intercept survey. To identify these themes the following prompt was used to "list common themes" with the "choice" variables;

The following output was created by ChatGPT:

- **Close to Home or Work:** Proximity to either a residential area or a workplace.
- **Free:** Indicates entrance to a facility that is without charge.
- **Convenient:** Ease of access or use.
- **Well-maintained:** High standards of upkeep and cleanliness.
- **Feel Safe:** Providing a sense of security and safety.
- **Before/After Hours:** Accessibility to facility is extended beyond normal operational hours.
- **Well-lit:** Adequate lighting for safety and visibility.
- **Preferred Equipment:** Availability or use of specific or preferred tools or resources.
- **Signage:** Clear and helpful signs for information.
- **Linked to Other Facilities:** Proximity to other related services or facilities.

The next step was to combine themes by common purpose that were within the context of POS and OGs. These themes were: accessibility, equipment, infrastructure, and safety. Table 1 lists choice variables and the factors from which they were comprised.

Table 1: Combined Themes relative to Choice variables utilised from the intercept survey

Theme	Choice Variables
Accessibility	• Close to Home or Work; Convenient; Well-lit; Before/After-hours; Free
Equipment	• Preferred equipment; Well-maintained; Signage
Infrastructure	• Close to Home or Work; Well-maintained; Well-lit; Preferred equipment; Signage; Linked to other facilities
Safety	• Feel safe; Well-lit; Signage

Final analyses included multivariate regression to predict numbers of gym users (linear and logistic regression) to predict gym users vs non-users.

Attendance figures and frequency of visits (from surveys), as well as the counterfactual (whether persons would exercise if they did not use the outdoor gym from surveys) were used, along with an adaptation of the World Health Organization Health Economic Assessment Tool for Walking and Cycling (https://www.heatwalkingcycling.org/#homepage).

https://www.vectorstock.com/royalty-free-vector/group-outdoor-sport-training-street-workout-vector-51737801

3. Results

3.1 Overall findings

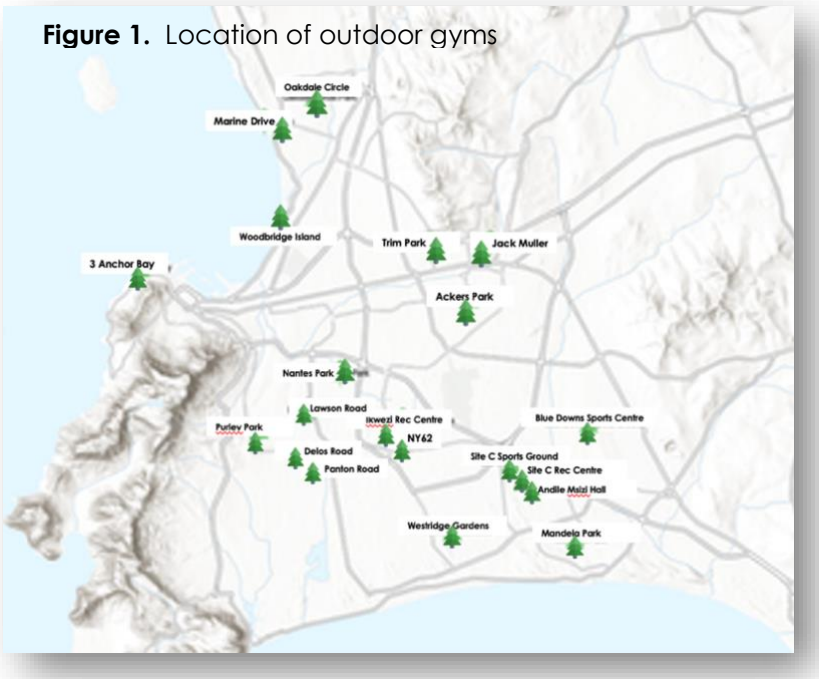


Figure 1. Location of outdoor gyms

Between June 2022 and September 2023, 3649 visitors were observed across 20 recreational facilities , parks or sports grounds which served as the location for the outdoor gym (OGs) (Table 2; Figure 1). Complete data was not available for two of the original 20 OGs due to lack of functional equipment in the one site, and concern for personal safety in the other.

Outdoor gyms with the most densely populated residential area within a 1km radius were Khayelitsha Site C Sports Ground (5,094 households), Khayelitsha Site C Recreation Centre (4,972 households), Ikwezi Recreational Facility (4,383 households), and Mandela Park (4,198 households) (Table 1). These OGs were predominately located in Area East (Figure 1).

https://www.vectorstock.com/royalty-free-vector/people-at-outdoor-gym-man-with-beard-pulls-up-vector-38220616

3.2 Direct Observation of POS Visitors and Outdoor Gym Users

Complete data was available from 18 gyms (2 excluded for safety concerns or lack of functional equipment- Ackers and Andile Mkizi). We observed a total of 3,649 POS visitors (Table 2) and 1,271 gym users, over one week day and one weekend day in each facility. It is important to note that the POS visitors were observed over specific intervals (07:00-09:00, 11:00-13:00, 15:00-17:00), whereas gym users were observed throughout each day. The mean (±SD) number of equipment stations was lowest in Community parks and Smart parks (12 + 5.5, and 13.5 + 2.1, respectively). Conversely, OGs located in Recreation Centres had a significantly greater number of equipment stations compared to all other sites, with the exception of Sports Grounds (Figure 2). There was no significant difference in gym users between POS types, largely due to wide variation (for example, one recreation centre had > 350 gym users, whereas the other had only 7).

Table 2 : Characteristics and location of outdoor gyms

Outdoor Gyms	Residential Density (1km buffer)	Area Size (m2)	Region	Type
Blue Downs	3401	9371	East	SPORT
Delos Road Park	1747	15581	Central	COMM
Jack Muller	1151	185114	North	REGIONAL
Lawson road	2451	6560	Central	COMM
Mandela Park	4198	18713	East	COMM SP
Marine Drive	598	287	North	COASTAL
Nantes Park	2825	213651	Central	REGIONAL
NY62 Gugulethu	3265	9464	East	COMM SP
OR Tambo Rec Centre	3003	14255	East	REC

Outdoor Gyms	Residential Density (1km buffer)	Area Size (m2)	Region	Type
Oakdale Circle Park	2736	7854	North	COMM
Panton Road	2600	7332	Central	COMM
Purley Park	2438	3659	Central	COMM
Site C Sports Ground	5094	32033	East	SPORT
Site C Rec Centre	4972	3202	East	REC
Three Anchor Bay	997	23095	North	COASTAL
Trim Park	1349	33129	East	COMM
Westridge Gardens	3608	321330	East	REGIONAL
Woodbridge Island	618	-	North	COASTAL

Coastal refers to coastal public open spaces, Comm refers to community parks, Comm SP refers to community Smart Parks, Rec refers to recreational centres, Regional refers to regional or district parks and facilities, and Sport refers to sports grounds. Men were observed more frequently than women (P<0.01) and senior adults were rarely observed, compared to children and adults (P<0.01, Table 3). Figure 3 shows the numbers of persons observed using SOPARC in the POS compared to those observed in OGs. Outdoor gym users (children, teens and adults) were significantly more likely to do Light and Moderate-Vigorous PA compared to their non-gym user counterparts (Figures 4a and 4b, P<0.001), across all facility types. Very few senior adults were gym users, and those who did use the gym/s were only observed in light PA.

Table 3. Visitors to Public Open Spaces (POS or Parks, Rec Centres, Sports Grounds, and Coastal Open Spaces)

Figure2. Gym visits and equipment across settings

Characteristic	2022 (N)	2023 (N)	TOTAL N	% of TOTAL
Total	1763	1886	3649	
Gender				
Female	805	542	1347	36,9
Male	765	1327	2092	57,3
Age Group				
Children	724	764	1488	40,8
Teens	183	452	635	17,4
Adults	817	574	1391	38,1
Seniors	38	34	72	2,0

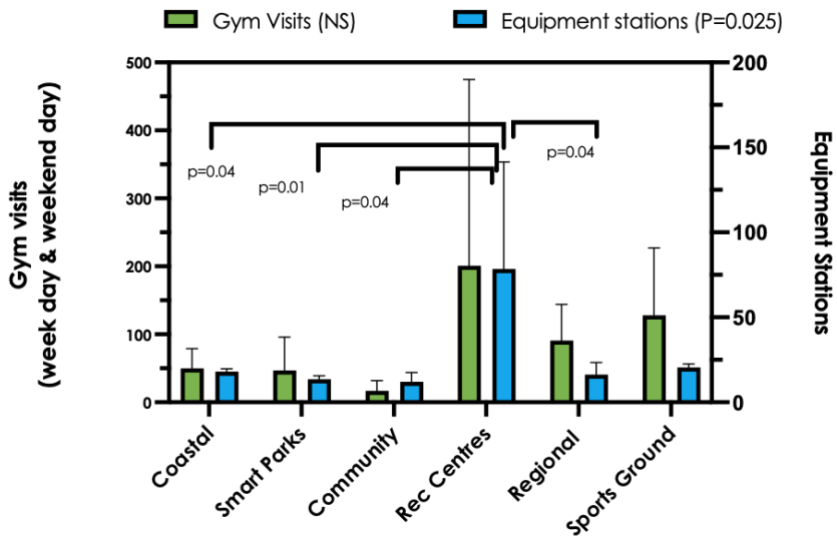
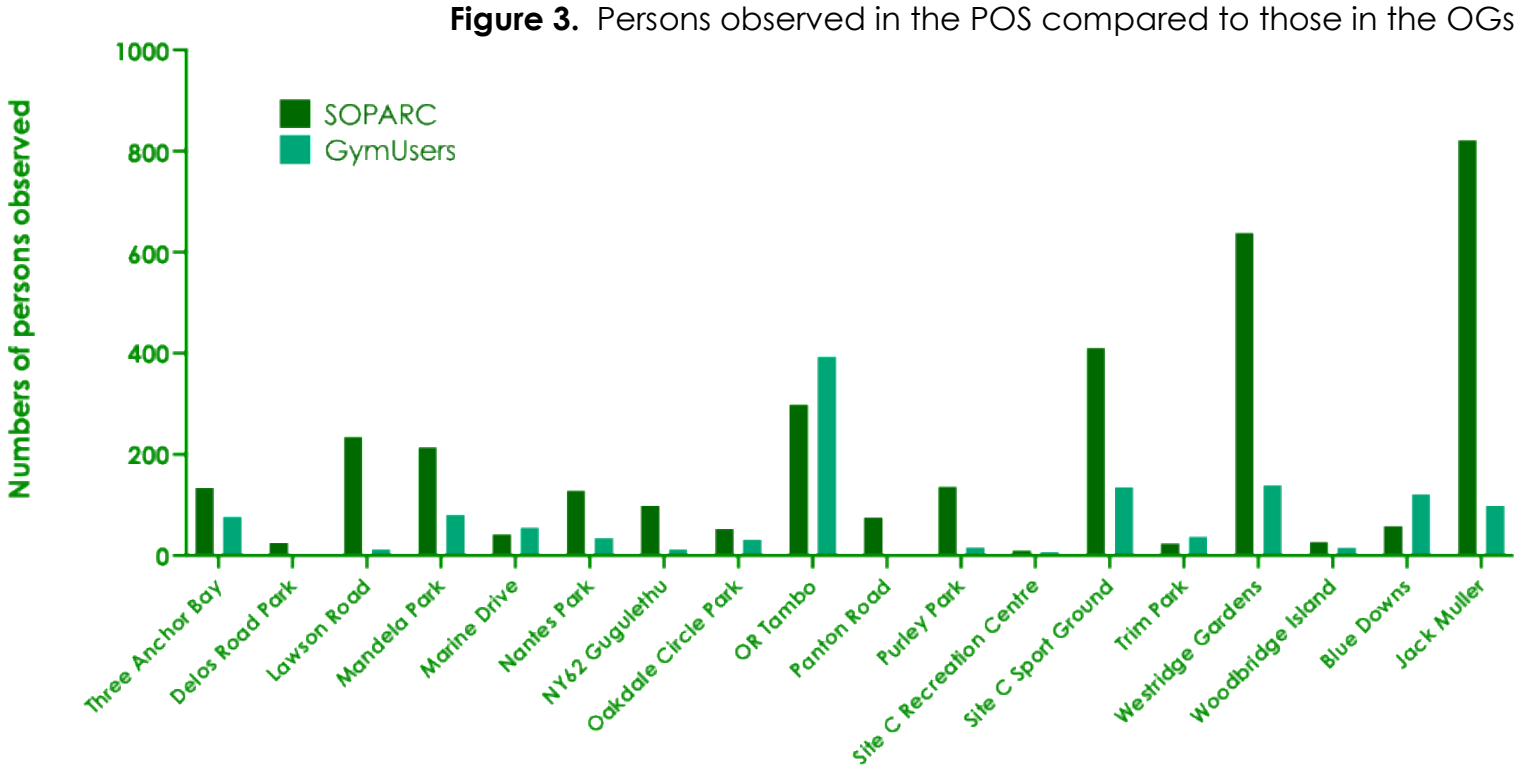


Figure 3. Persons observed in the POS compared to those in the OGs.



There were no significant differences between facility types and the OG users-to-POS visitors observed ratio, which varied widely, in part due to the different sampling frames. In general, the smart parks and regional parks had the fewest gym users in relation to POS visitors (0.25±0.18 and 0.20±0.08), compared to recreation centres or sport grounds (1.01±0.44 and 1.21±1.24, respectively). Additionally, children made up 31% and adults comprised 46% of OG users observed compared to adolescents (14%) and senior adults (8%, P=0.003).

Figure 4a. Physical activity levels in outdoor gym users and non-users

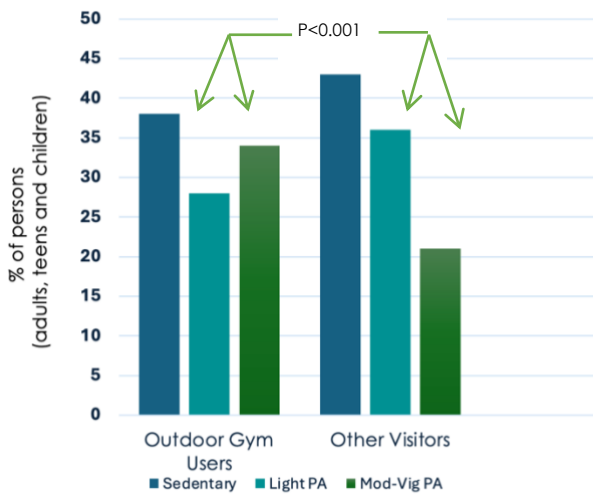
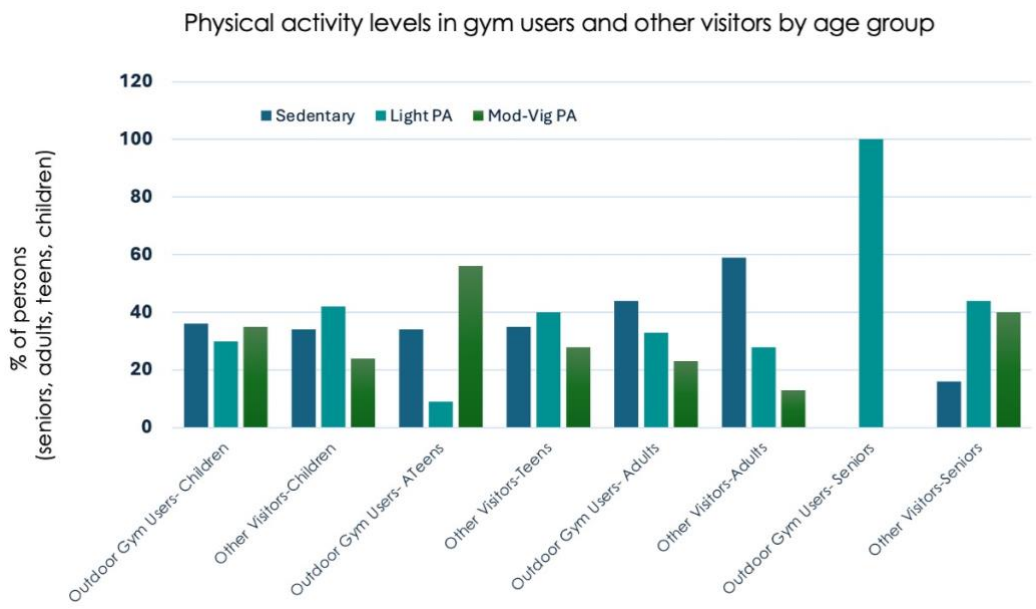


Figure 4b. Physical activity levels in outdoor gym users and non-users, by age and gender (OG users were more active than non-users, P<0.001)



3.3 Physical and geospatial attributes of outdoor gyms and the surrounding built and social environments

We conducted an observational audit of the outdoor gyms with respect to physical attributes, including condition of gym equipment and other infrastructure, aesthetics, shade, benches, lighting, fencing, playgrounds and toilets. In Table 4 below, we summarise if attributes were present, and if so, if they were dysfunctional (1), partially functional (2) or fully functional (3). Greenery, benches and playgrounds were the most commonly cited attributes and amenities, in addition to the outdoor gyms. However, playgrounds and benches were largely only considered partially functional.

Table 4. Physical attributes and infrastructure of amenities in the outdoor gyms.

	Type	Benches	Shade	Greenery	Aesthetic	Lights	Sports-fields	Courts	Play-ground	Paths	Fencing	TOILET
3 Anchor Bay	Coastal	2	0	2	3	3	0	0	0	3	0	0
Delos Road	Community	0	2	2	0	2	0	0	2	0	0	0
Ikwezi Rec	Rec Centre	3	0	2	3	0	2	2	2	3	3	0
Lawson Road	Community	2	2	2	0	0	0	0	2	0	0	0
Mandela Park	Smart park	2	0	2	0	0	0	2	2	2	0	0
Marine Drive	Coastal	2	0	2	0	2	0	0	0	0	2	0
Nantes	Regional	2	3	3	3	3	0	0	2	3	3	2
NY62	Smart park	3	2	3	3	0	3	3	3	3	3	0
Oakdale Circle	Community	2	2	2	0	2	0	0	0	2	0	0
OR Tambo	Rec Centre	1	0	2	0	1	0	3	3	3	2	0
Panton Road	Community	1	1	2	0	0	0	2	2	0	0	0
Purley Park	Community	2	2	2	2	2	0	0	2	0	0	2
Site C Rec C	Rec Centre	3	3	0	0	0	0	0	0	3	3	0
Trim Park	Community	2	2	2	2	0	0	0	2	2	0	0
Westridge	Regional	3	3	2	3	0	0	0	3	2	3	2
Woodbridge	Coastal	2	0	2	3	2	0	0	0	0	0	0
Blue Downs	Sportsground	2	2	2	2	0	3	0	0	2	3	0
Jack Muller	Regional	2	2	2	0	2	0	2	2	2	2	0

We created amenities sub-scores (comfort, function, safety and greening and a total score, with a maximum score of 33) for the OGs. None of the sub-scores correlated with OG use or POS visitors. However, the total amenities score was significantly and positively correlated to the number of OG users (rho=0.493, P=0.045).

Table 5. Numbers of stations, users, types and conditions of equipment.

	Type	Stations	Users	Types	Dysfunctional	Partially functional	Fully functional
Anchor Bay	Coastal	12	13	10	3	6	3
Delos Road	Community	8	24	7	-	8	-
Ikwezi Rec	Rec Centre	10	14	10	1	9	-
Lawson Road	Community	10	11	6	1	9	-
Mandela Park	Smart park	5	5	5	-	2	3
Marine Drive	Coastal	6	8	6	-	6	-
Nantes	Regional	11	15	7	4	7	-
NY62	Smart park	11	15	8	-	10	1
Oakdale Circle	Community	9	16	9	-	9	-
OR Tambo	Rec Centre	96	173	12	30	60	6
Panton Road	Community	5	6	3	2	3	-
Purley Park	Community	8	22	6	1	2	5
Site C Rec C	Rec Centre	32	34	10	-	32	-
Site C Sportsground	Sportsground	12	19	11	8	4	-
Trim Park	Community	17	21	14	2	10	5
Westridge	Regional	7	7	6	3	3	1
Woodbridge	Coastal	11	25	8	2	6	3
Blue Downs	Sportsground	17	46	13	1	15	1
Jack Muller	Regional	19	26	12	-	4	15

The number of equipment stations ranged from as few as 5 to as many as 96 stations (Table 5). With multi-user stations, this means that as many as 173 persons could exercise in OR Tambo Recreation Centre. The actual names and types of equipment at each site are provided in the Addendum. It is important to note that the majority of the equipment was considered to be only partially functional, with few fully functional items, except at Jack Muller Park, which were mostly fully functional.

We explored aspects of the social and built environments in the 1km radial buffer around each facility, according to facility types, presented in the Figures 5a-d below. While crime events were not significantly different between facility types, street lighting, bus stops and the presence of social services were different, although there was wide variability. In general, the areas around outdoor gyms located in regional parks had more streetlights (Figure 5a), and greater access to social services (Figure 5b) than other locations. Whereas the areas in which coastal parks were located had a significantly greater number of MyCiTi bus stops (Figure 5b). When we measured the Walkability in the areas surrounding outdoor gyms, coastal and community sites were the least walkable, whereas the areas in which regional parks, recreation centres and sport grounds were located were found to be the most walkable (Figure 5c), using GIS variables.

Figure 5a

Figure 5b

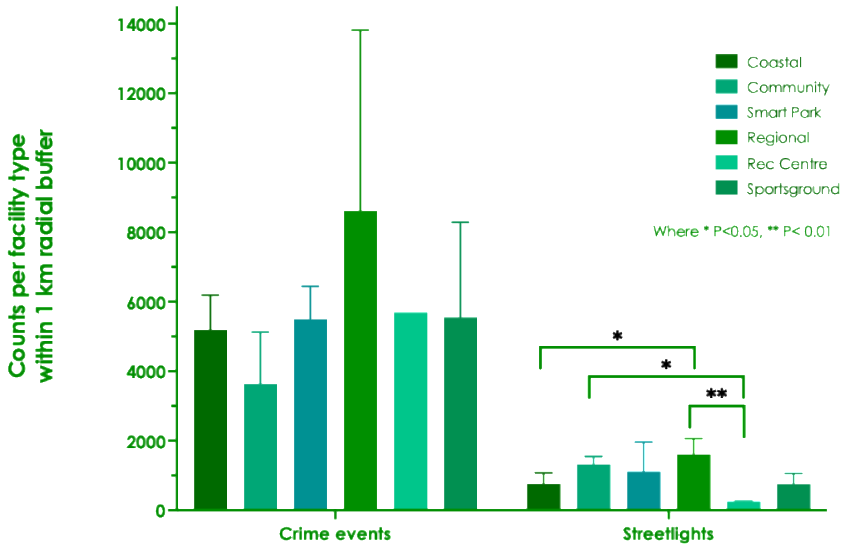


Figure 5c

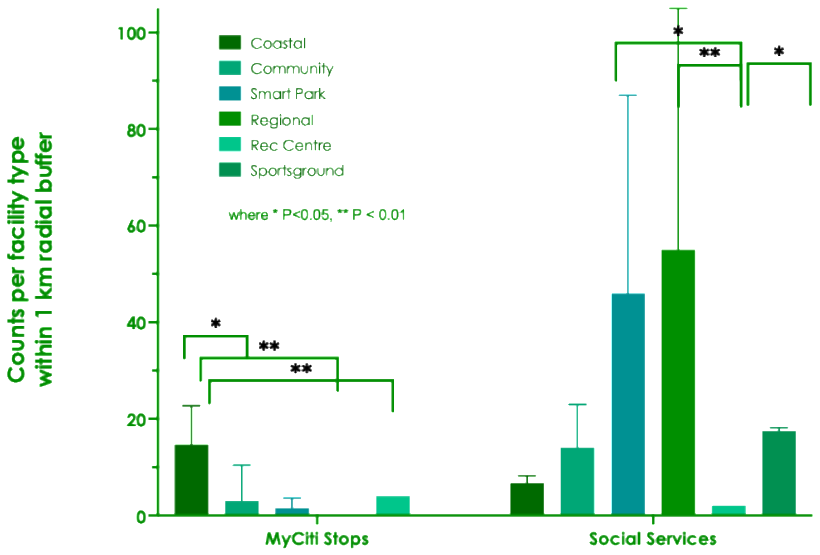
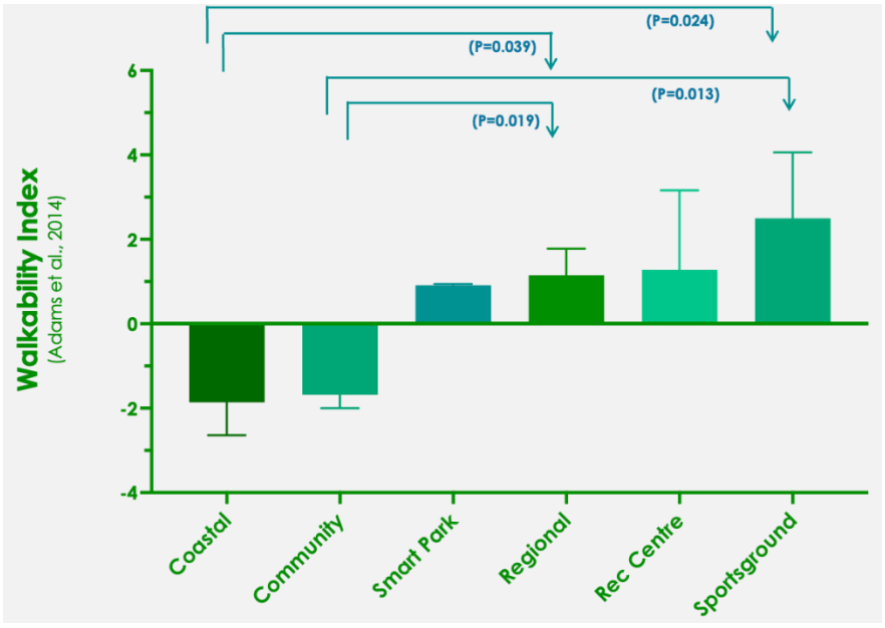
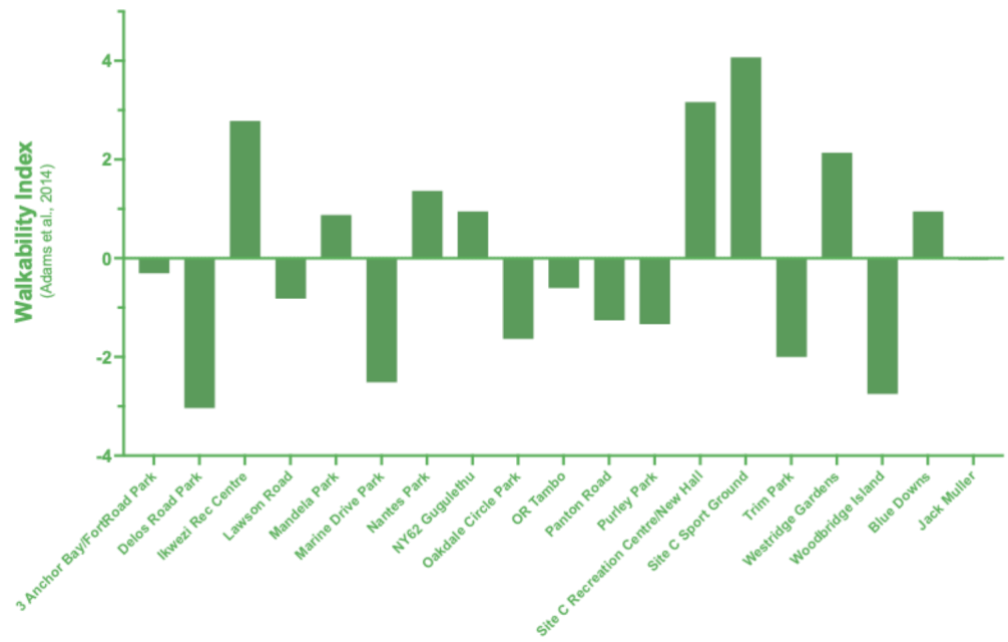


Figure 5d





3.4 Intercept survey results

Image from: https://outdoorgyms.co.za/explore

Type	OG Users	Non-users
Coastal	28	12
Community	49	224
Smart Parks	13	19
Regional Parks	51	15
Recreation Centres	14	1
Sports Grounds	11	5
Total	N=166	N=76

Table 6. Intercept surveys for OG users and non-users across facility types

3.4.1.Reasons for visit in gym users and non-gym users:

Intercept surveys were conducted across all 20 sites, including 242 respondents of whom 31% (N=76) were not using the outdoor gyms (non-users) and 69% were reportedly outdoor gym users (OG Users, N=166). Table 4 provides a breakdown of the types of facilities in which these interviews took place. Respondents were asked why they had chosen to visit the particular facility in which they were interviewed. We compared outdoor gym users and non-users, across the different types of facilities (Figure 6). We also compared responses to surveys for OG users and non-users, to determine if there were any differences based on the types of facilities in which these OGs were located.

There were no significant differences in the reasons such as proximity, affordability (free), maintenance, lighting and safety, given for choosing to visit the different sites between gym users and non users. However, gym users were more likely to cite the fact that the gym has the preferred equipment and that their purpose was exercise ($P<0.001$, not shown), whereas non-users were more likely to report bringing children ($P<0.001$). However, gym users who were in coastal facilities were more likely to cite a feeling of safety, or that the gym offered the preferred equipment and was well-maintained, compared to the other sites. The majority of visitors who do use the OGs were confident in using the gym equipment (48.2 %) with only 5.1 % not feeling confident at all.

Figure 6. Reasons for visiting facility between OG users and non-users, and across facility types.

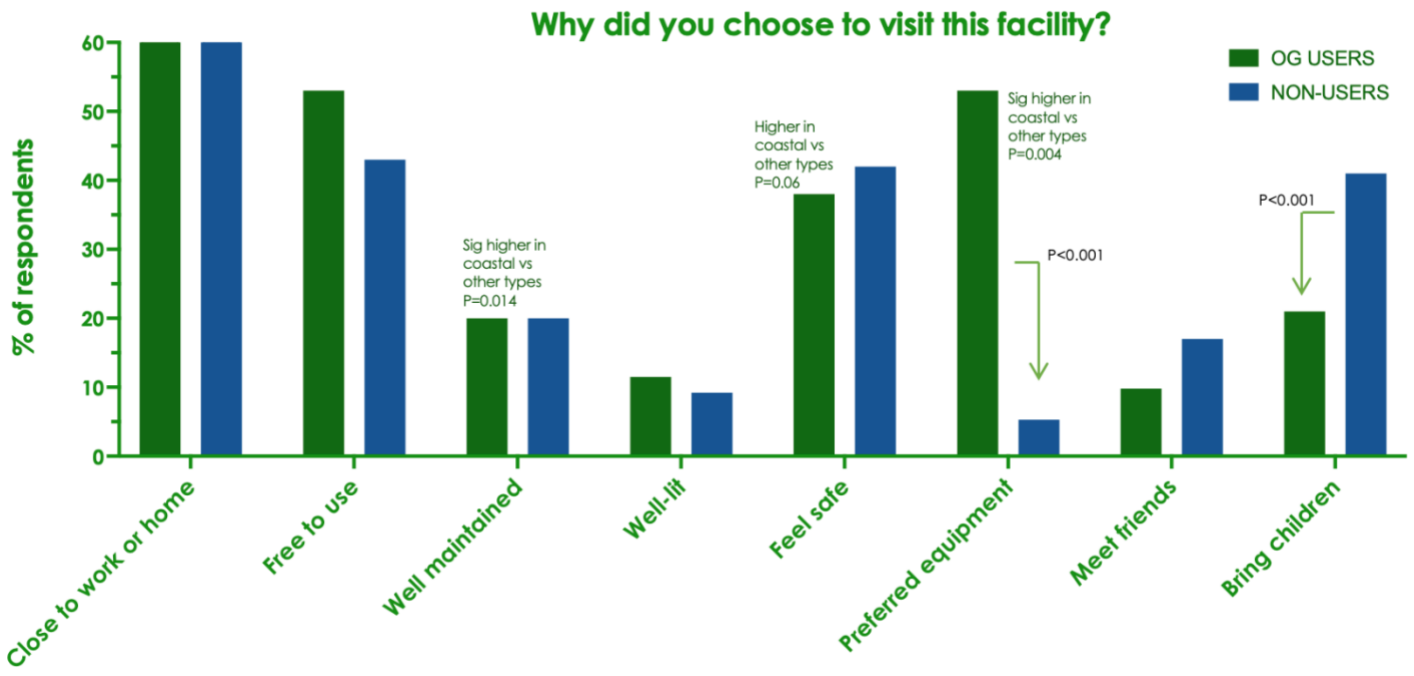
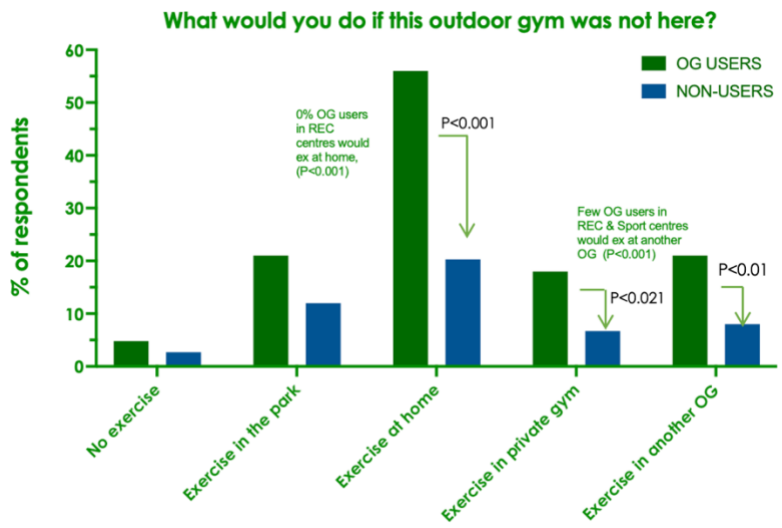


Figure 7. Alternatives if there was no outdoor gym in the facility.



We also asked respondents what they would do as an alternative if the outdoor gym in their facility was not there. The results are presented in Figure 7 (left).

Overall, OG users were significantly more likely to have alternate strategies for exercise, such as exercising at home (P<0.001), at another outdoor gym (P=0.012), or at a private fitness centre (P=0.02), compared to non-users.

Those OG users in recreation centres or sport grounds appeared to be more dependent on the OGs in their facilities for exercise opportunities. They were less likely than OG users in other facilities to exercise at home or to use another outdoor gym.

3.4.2.Perceived benefits of outdoor gyms:

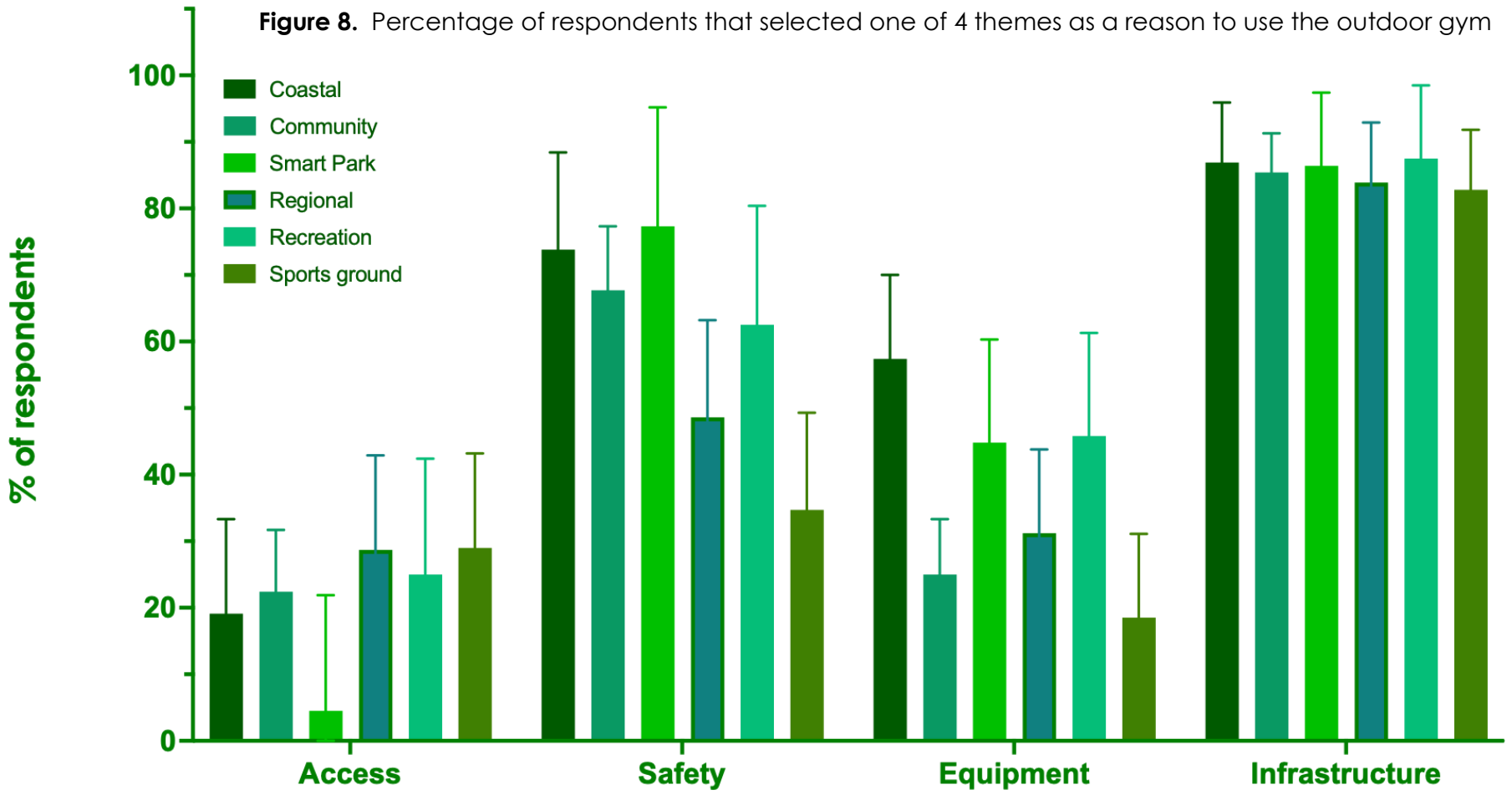
We explored participants' responses to questions regarding the perceived benefits of the OGs, as well as improvements that they would recommend (Table 7). Outdoor gym users were more likely to site benefits of affordability, improved health and well-being (P<0.001) and of reduced crime in the area (P=0.018), compared to their non-users counterparts. Outdoor gym users interviewed were also significantly more likely to suggest improvements to equipment (P<0.001)and to the safety and cleanliness (P=0.032) of the facilities, compared to non-users. When we thematically grouped survey responses using Chat GPT into issues of Access, Safety, Equipment, and Infrastructure in relation to the reasons why the various outdoor gyms were utilised. Issues of accessibility were of less importance than safety and infrastructure, as well as the equipment available (except for community parks and sport grounds). When we compared overall responses, after adjusting for the type of facility, we found that issues of access and equipment were less frequently mentioned. Issues of safety (more than 60% of persons surveyed except for sport grounds and regional parks) and infrastructure (more than 80% of persons surveyed in all settings) were most commonly cited and therefore considered significantly more important (P<0.001) that the other issues (Figure 8).

Table 7. Benefits of OGs cited and improvements suggested according to OG users and non-users

Benefits	**OG users (%)**	**OG Non-users** (%)	**P-value**
Health and well-being	77.3%	31.5%	P<0.001
Affordability	41.3%	22.0%	P<0.001
Sense of belonging	21.1%	26.3%	NS
Reduced crime	23.5%	10.5%	P=0.018
Community Asset	25.3%	14.5%	P=0.06
Opportunity for sports persons	35.0%	23.7%	P=0.08

Suggested improvements	**OG users** (%)	**OG Non-users** (%)	**P-value**
Equipment	89.0%	45.0%	P<0.001
Safety and cleanliness	45.0%	28.0%	P=0.032
Aesthetics	34.0%	25.0%	NS
Toilets/Ablution facilities	20.7%	18.4%	NS
Programmes	26.0%	17.0%	NS

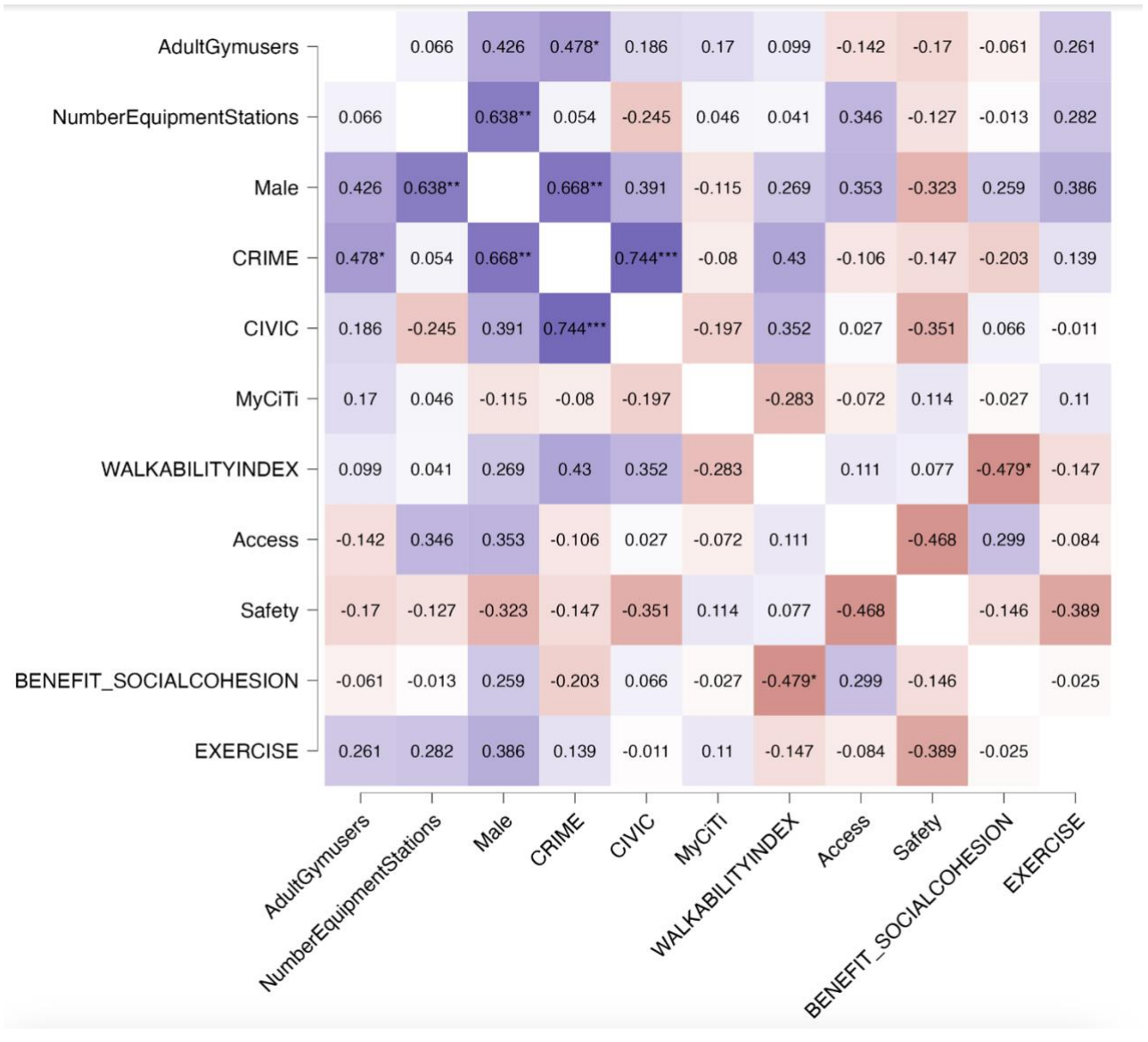
Figure 8. Percentage of respondents that selected one of 4 themes as a reason to use the outdoor gym



3.4.3.Factors that are associated with gym use

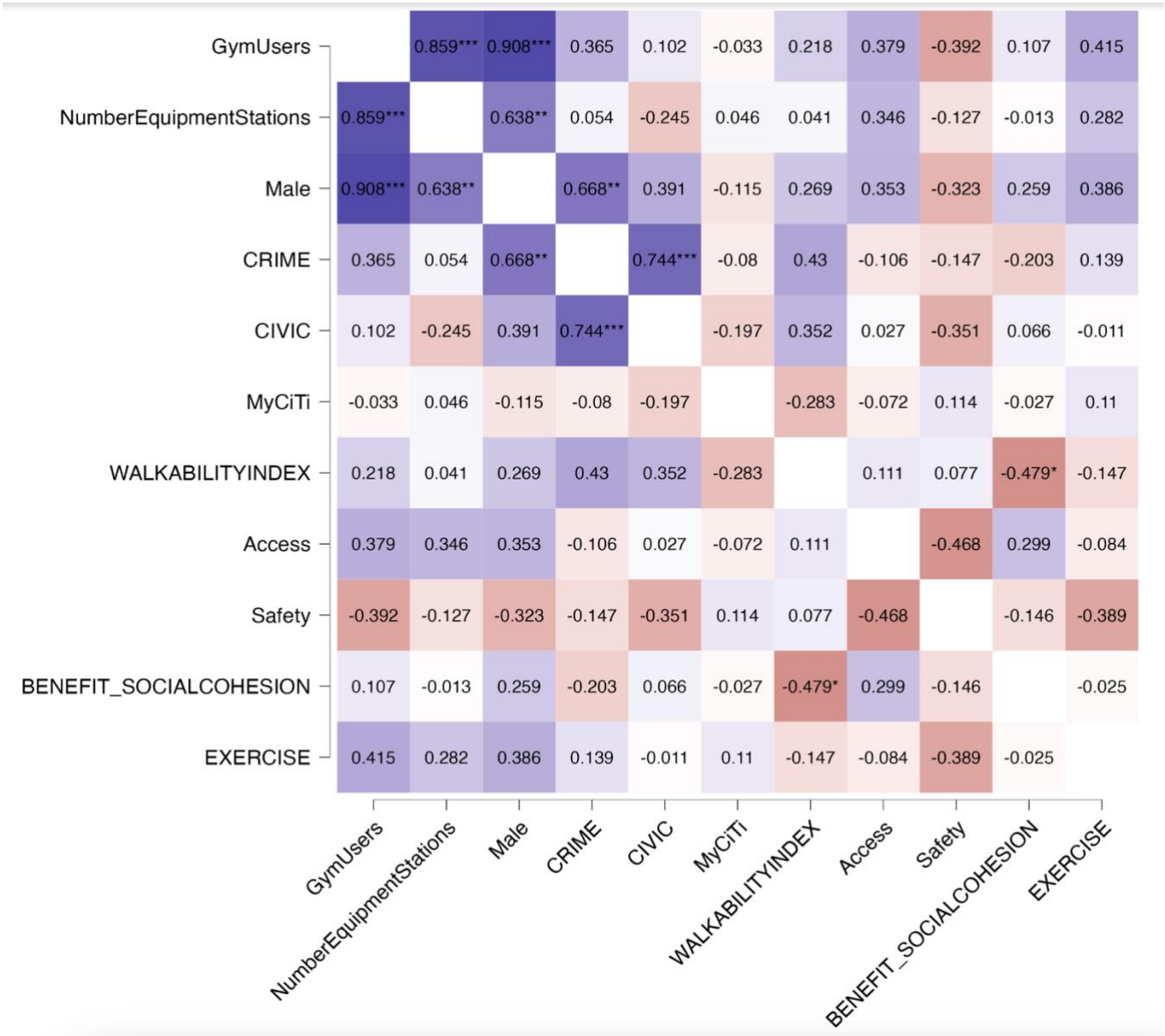
We conducted simple bivariate Spearman's correlations between variables related to the built and social environments, and demographic characteristics of the community in order to determine factors that best associated with the use of outdoor gyms overall (Figure 9b) and by adults specifically (Figure 9a), in the various sites. The results of these analyses are presented in the form of heatmaps in Figures 9a and 9b below.

Figure 9a. Simple bivariate correlations for adult gym users, related built, social environmental and demographic variables.



Where: dark purple** represents significant positive correlation (P<0.01), light purple* represents significant positive correlation (P<0.05), dark brown** represents significant negative correlation (P<0.01), light brown* represents significant negative correlation (P<0.05).

Figure 9b. Simple bivariate correlations for all gym users, related built, social environmental and demographic variables



Where: very dark purple*** represents represents significant positive correlation (P<0.001), dark purple** represents significant positive correlation (P<0.01), light purple* represents significant positive correlation (P<0.05), dark brown** represents significant negative correlation (P<0.01), light brown* represents significant negative correlation (P<0.05),

If we considered all gym users, we noted that men were more likely to be gym users, and that OG use was strongly and positively associated with the number of equipment stations, but inversely associated with perceived safety. OG use was also weakly and positively associated with perceived access and somewhat paradoxically, positively associated with crime events. For adult users, the primary predictors were crime events and being male. We then conducted a multivariate analysis, using the bivariate correlations as a guide. We found that the model that best predicted gym use overall, resulting in an adjusted R^2 of 0.93 or in which 93% of the variance was explained, included the number of equipment stations (ß=0.810), crime events in the past year (ß=0.243), perceived safety (ß=-0.236), walkability index (ß=0.210) and perceived benefit of social cohesion (ß=0.232).

Table 8. Results of multiple linear regression predicting gym users

Adjusted R^2= 0.093,					**P<0.001 for the model**
	B	**SE of B**	**ß**	***t-value***	**P value**
Intercept	-42.35	27.920		-1.517	0.155
No of equipment stations	2.899	0.240	0.810	12.066	<0.001
Crime events (annual within 1 km radial buffer)	0.008	0.003	0.243	3.234	0.009
Perceived safety (% respondents)	-0.662	0.194	-0.236	-3.410	0.005
Walkability Index (1 km radial buffer)	9.671	3.803	0.210	2.543	0.026
Social cohesion (% respondents)	0.926	0.304	0.232	3.043	0.010

3.4.4.Preliminary Health Economic evaluation

Of the 1,271 gym users observed, 405 were adults and the estimated physical activity engagement was 45mins per person per day. Extrapolating the findings to the 250 outdoor gyms situated in Cape Town, it was estimated that 5,955 individuals engage in active gym use weekly. Over the span of 12 months, these projections indicate that approximately 309,705 people will actively engage with the 250 outdoor gyms. As a result, the outdoor gyms initiatives is

expected to prevent 827 premature deaths annually, corresponding to an annual economic value of $774,000,000.00. Adjusted for changes in the value of money overtime, the economic impact was $5,970,000,000.00 in 2024 terms.

This initial model did not adjust for seasonality, and we adapted the World Health Organization HEAT (Health Economic Economic Assessment Tool for Walking and Cycling, https://www.heatwalkingcycling.org/#homepage)

4. *Summary and Discussion:*

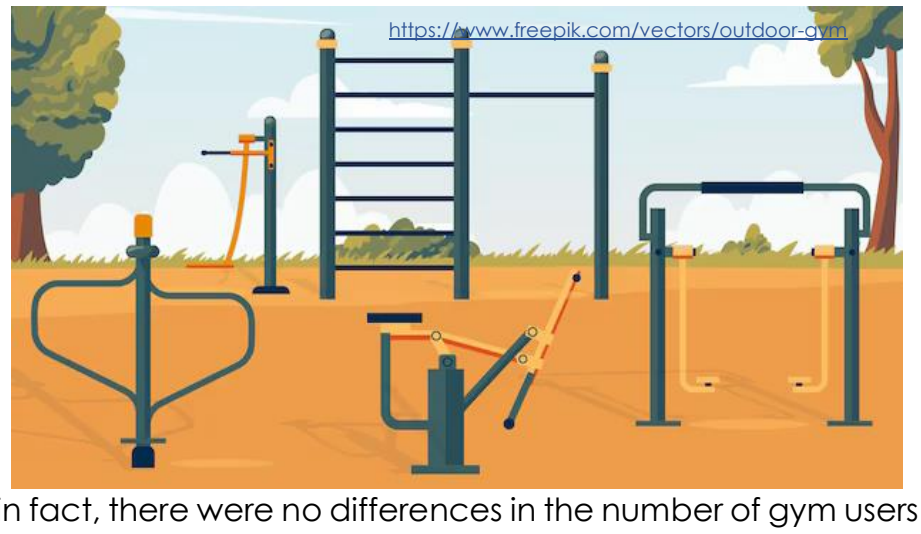
In this mixed methods evaluation of the outdoor gyms (OGs) of the City of Cape Town, we sought to determine the pattern and volume of use of these installations, in low, middle and high income communities. We also attempted to link the attributes of the OGs, the facilities in which they were located and the surrounding communities, with use of and satisfaction with these installations. Finally, we have completed a preliminary health economics evaluation of the impact of the OGs.

4.1 Who is using the outdoor gyms?

Complete observational data was available from 18 gyms (2 were excluded for safety concerns or lack of functional equipment- Ackers Park and Andile Mkizi).We observed a total of 3,649 POS visitors and 1,271 gym users, over one week day and one weekend day during the course of the project. All observations were completed on days in which there was no rain or inclement weather, but during different seasons. Although the ratio of OG users to POS visitors was not statistically significantly different, it appeared that the OGs located in coastal areas, recreation centres and sport grounds showed a tendency toward a higher gym use compared to general visitors to the POS. This suggests that facilities that are purpose-built for sport or recreation may be more likely attract OG users than those built in local neighbourhoods, or as regional parks with facilities designed more for social interaction and for play. It is, however, noted that the OR Tambo Recreation Centre had a disproportionately higher number of OG equipment stations, and nearly 3.5-fold more OG users than the next highest (Site C Sportsground and Westridge Gardens).

It is also important to consider that nearly one third of the gym users observed were children. This may be related to the time of day, or the fact that children used the equipment for play rather than for exercise or fitness. However, as the equipment is not designed for children and most of these facilities are unsupervised, it is unclear if there are any adverse implications of their use of this equipment.

These results differ somewhat to a recent study incorporating household surveys from 4 outdoor gyms, located in urban squares or a regional park, in Brazil (Bergmann et al., 2020). Researchers found that women and persons from lower income households were more likely to use the OGs, and in particular, more than one time per week. In the present study, we were more likely to observe men in the OGs, and



in fact, there were no differences in the number of gym users according to the socioeconomic status of the community, even after covarying for facility type.

As in previous studies, we found that OG users were

significantly more likely to be observed in moderate to vigorous intensity physical activity (MVPA) than non-users or POS visitors. This appears to be a consistent finding in most similar studies and of natural experiments involving outdoor gyms and exercise installations. Natural experiments are observational studies documenting the impact of policies or programmes, ideally prior to and after implementation. The researcher has no control over the implementation. In a natural experiment in a suburb of Sydney, Australia, Cranney et al. (2019) found an increase in OG users engaging in MVPA from 6% to 40% following installation of an OG. They also found a high proportion of OG users were children and men. Similar findings were shown, with the odds of persons engaging in MVPA increasing in two Southern California parks by 19% and 23% post OG installation (Sami et al., 2020).

Overall, we found that very few senior adults were using the OGs, and more children than expected; and that those persons who used the gyms were more likely to engage in MVPA than persons visiting in the same POS but not using the OG.

We also found no differences in the number of OG users according to the SES of the area. However, the OR Tambo Recreation Centre was the exception, with a much larger complement of equipment stations and consequently, OG users, than all other sites. To our knowledge, there were no specific adaptations of OG equipment stations audited that accommodated persons with limited mobility or who are using wheelchairs.

These results have implications for policy makers. Firstly, there is a virtual absence of older adults and an over-representation of children in the OGs. It might be important to add or replace some stations with equipment that is appropriate in dimensions and design to accommodate children. With respect to older adults, they may lack the confidence or capacity to utilise existing equipment, and may benefit from instruction or better signage (Paudel et al., 2024). In some studies, older adults cited that the overcrowding of equipment by children was also a barrier (Stride et al., 2017). It may also be useful to workshop with stakeholders and allied health professionals regarding other types of equipment that may be installed, emphasising range of motion or balance, as well as strength and cardiorespiratory fitness.

4.2 Attributes in and around the Outdoor Gyms associated with OG use:

The number of equipment stations in the outdoor gyms selected for auditing varied widely from as few as 5 to as many as 96. It is notable that the majority of these stations were considered only partially functional, suggesting that there are ongoing concerns regarded maintenance and repair that require attention. Despite this, in all of the subsequent analyses, the single most consistent predictor of outdoor gym use was the number of equipment stations in each location. This finding is corroborated by many other studies on factors associated with the use of and satisfaction with outdoor gyms (Baron-Epel and Ran, 2023, Sharma and Chaudhary. 2021, Sas-Nowosielski & Szopa-Wiśnios, 2023, Sibson et al., 2018).

We explored the amenities associated with each site, including the presence of benches, shade, toilets, greenery and other aesthetics, fencing and lighting, as well as sport fields, courts, play equipment and pathways. Similarly, the most common attributes of the sites in which these OGs were located included benches, greenery, playgrounds and shade. However, these items were primarily only partially functional. The only measure that correlated with gym use was the total amenities score, which was also strongly associated with walkability.

With respect to the social and built environments in and around the OGs, we found widely varying results for crime events across sites, with MyCiTi hubs more prevalent for coastal sites, and more street lighting in areas surrounding community and regional parks. Walkability measured using GIS variables was lowest in the areas around the coastal and community OGs, and highest in the areas where recreation centres and sport grounds were located. However, the only factor of the social and built environments that was consistently and strongly correlated to outdoor gym use was the number of annualised crime events in a 1km radial buffer of the facilities. This was further corroborated by the fact that perceived safety attributes were inversely correlated to OG use (results of the intercept survey) which also featured significantly in the multivariate analysis.

(image: https://www.istockphoto.com/vector/street-workout-panorama-people-training-on-sport-ground-do-physical-exercises-on-gm1993168968-559728715)

Conversely, in our final multivariate analysis, factors that also contributed significantly to predicting the number of OG users included walkability of the 1km radial buffer and the perception that OGs contributed to social cohesion in a community. In other words, they were perceived to increase social connectivity. This is one of the themes emerging from the recent systematic review on the use of outdoor gyms, found in most of the included studies (Lee et al., 2018). This suggests that the OGs have a benefit beyond health-related fitness and physical activity, and may contribute to better mental well-being and a more connected and supportive community.

These results may seem somewhat paradoxical, in that crime events and lack of perceived safety, along with walkability and social cohesion all predicted gym use, after taking into account the number of equipment stations. Findings differ somewhat to our expected outcomes, as most studies find an inverse association between neighbourhood crime and other incivilities with leisure time or volitional physical activity (Rees-Punia et al., 2018). As a result, we interpret our findings to suggest that OGs provide a "safe space"; a destination in what might be otherwise considered a less than ideal social environment. Walkability of the surrounding area suggests that access is also important.

https://www.freepik.com/vectors/outdoor-gym

4.3 Reasons for selecting the facility and OG site for users and non-users:

From the intercept surveys, we compared the reasons given for selecting the particular facility in which the OGs were located between gym users and non-users. Not surprisingly, proximity, affordability (no cost), maintenance, lighting and safety were weighted similarly for OG users and non-users. But in relation to the purpose of the visit, gym users were more likely to cite that they attended for exercise and because of the preferred equipment, while non-gym users were more likely to cite bringing children to the facility. These results further highlight that OG users were more likely to engage in moderate-to-vigorous exercise than non-OG users. What is not clear, is what attributes of the OGs and/or facilities in which they are located, would result in greater engagement in physical activity for non-OG users.

When respondents were asked what the perceived benefits of the OGs were in their communities, OG users were more likely to cite the impact on health and well-being, and on reducing crime and as a community asset. They also were more likely to suggest improvements in equipment and cleanliness. Overall, less than 1 in 5 respondents suggested toilets and only 20-26% suggested more programmes were needed. These results are not dissimilar to Sibson et al., (2018) in which park goers were interviewed about a new installation of stretching equipment. While there was general agreement that the equipment was an asset, there was no consistent effect of whether or not this influenced the use of the equipment.

In a recent study by Scott et al. (2020), they explored attitudes and perceptions regarding outdoor exercise equipment with over 70 local government area (LGA) council representatives in Queensland, Australia. The themes that emerged from this survey showed that policy makers and administrators had some ambivalence about these installations and whether they offered sufficient return on investment. This ambivalence also stemmed from concerns over safety and compliance, and whether it was in the mandate of these LGAs to promote healthy community programmes and initiatives. Finally, they recognised that there was insufficient information regrading the use of and satisfaction with outdoor exercise equipment on which to base decisions regarding resource allocation. This highlights the importance of the current study in providing these insights for local government officials in the City of Cape Town.

Our preliminary results suggest that OGs are important in promoting physical activity, which offers the potential for improving public health, and preventing premature deaths, leading to economic and non-economic benefits. Beyond cost savings, OGs contribute to enhanced quality of life,

increased social cohesion, and improved mental well-being for individuals and communities.

By fostering healthier lifestyles and reducing the disease burden, these spaces support a more resilient and connected society, reinforcing the importance of sustained investment in accessible, community-based fitness infrastructure .

5. Policy and Practice Recommendations:

We make the following policy recommendations based on the results of this report and best practice.

1) Consider the location of OGs to maximise reach and address social and environmental justice

   - Conduct community consultation and needs analysis before installation or upgrade of OGs, the type of facility in which they will be located and the types of equipment stations and/or supervision and programmes.

2) Ensuring outdoor gyms accommodate a wider demographic will enhance engagement, reduce barriers to use, and promote lifelong physical activity. This can be achieved by:

   - Introducing child-friendly stations with appropriate dimensions and features.
   - installing low-impact and balance-focused equipment tailored for older adults.
   - Provide clear signage and instructional materials in indigenous languages to improve accessibility for older users, with guidance on correct equipment use and exercise routines.
   - Replacing or modifying under-utilized equipment to encourage more diverse workouts.
   - Incorporating smart fitness technology (e.g., QR codes linking to video demonstrations).

3) Functional and well-maintained OGs attract more users, increase safety perceptions, and contribute to higher levels of physical activity in communities. This can be achieved by:

   - establishing regular inspection and maintenance policies to ensure outdoor gym equipment and surrounding amenities (benches, shade, toilets, lighting, and greenery) remain functional and appealing.
   - enhancing walkability and safety features, such as improved lighting and fencing, to encourage usage.

4) Enhancing safety and social connectivity around OGs will increase public confidence, usage rates, and long-term sustainability of these spaces by:

   - developing community-led safety strategies to mitigate crime-related barriers to OG use
   - encouraging community involvement in OG maintenance and oversight to foster local ownership.
   - improving social cohesion programs, such as group fitness events, to strengthen community ties.
   - integrating OGs into broader urban design strategies that improve safety and accessibility, including MyCiTi hubs and recreational zones.
   - training peer fitness ambassadors or “citizen trainers” to guide users.
   - partnering with schools, workplaces, and community organizations to integrate OG use into wellness programmes.

https://www.freepik.com/vectors/outdoor-gym

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Addendum 1: Physical activity levels observed in POS

Most visitors were identified as sedentary (45.5%) with OR Tambo and Westridge Gardens representing the greatest proportion. Moderate physical activity only represented 19.4% of visitors with Lawson road and OR Tambo representing the highest proportion. Vigorous physical activity was mainly reported in Mandela Parked compared to any other OG (Table 6).

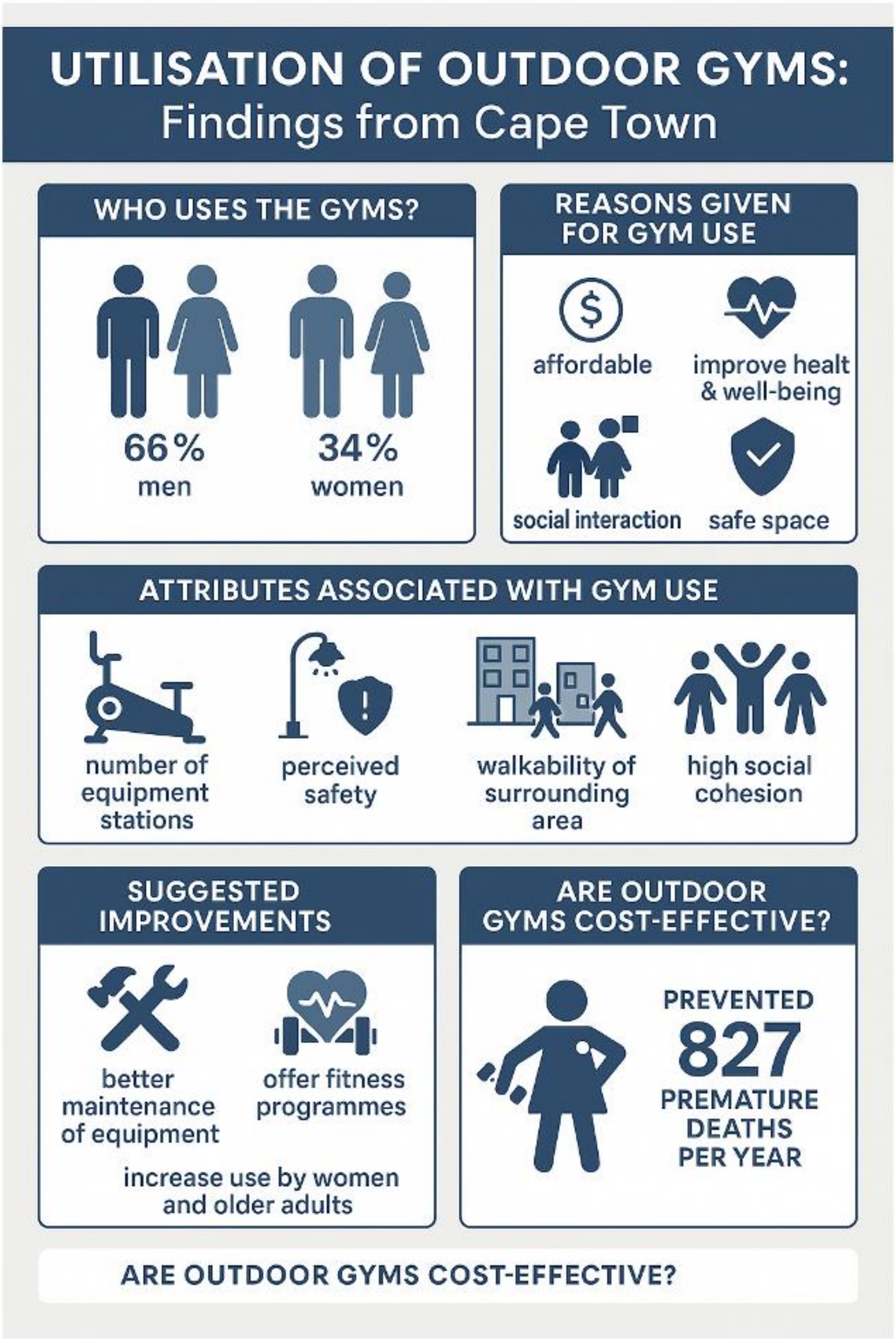
Outdoor Gym	**Sedentary**		**LPA**		**MPA**		**VPA**		**Undetermined**		**Total**
	n	%	n	%	n	%	n	%	n	%	n
OR Tambo	176	24.4	242	33.6	266	36.9	12	1.7	24	3.3	720
Blue Downs	20	34.5	27	46.6	2	3.4	4	6.9	5	8.6	58
Westridge Gardens	305	38.4	361	45.4	92	11.6	21	2.6	16	2.0	795
Nantes Park	54	42.2	47	36.7	17	13.3	0	0.0	10	7.8	128
Trim Park	3	12.5	12	50.0	7	29.2	2	8.3	0	0.0	24
NY62 Gugulethu	29	18.0	97	60.2	35	21.7	0	0.0	0	0.0	161
Marine Drive	7	16.7	34	81.0	1	2.4	0	0.0	0	0.0	42
Oakdale Circle Park	30	56.6	22	41.5	1	1.9	0	0.0	0	0.0	53
Lawson Road	45	19.1	53	22.6	129	54.9	8	3.4	0	0.0	235
Delos Road Park	31	31.0	20	20.0	49	49.0	0	0.0	0	0.0	100
Purley Park	66	48.5	33	24.3	37	27.2	0	0.0	0	0.0	136
Forts road Park	56	41.8	67	50.0	11	8.2	0	0.0	0	0.0	134
Woodbridge Island	11	40.7	13	48.1	3	11.1	0	0.0	0	0.0	27
Mandela Park	48	22.4	81	37.9	38	17.8	47	22.0	0	0.0	214
Jack Muller	778	94.6	19	2.3	19	2.3	6	0.7	0	0.0	822
All	1659	45.5	1128	30.9	707	19.4	100	2.7	55	1.5	3649
No SOPARC DATA: Site C Recreation Centre, Site C Sport Ground,Ikwezi Rec Centre											

Addendum 2: Outdoor gym equipment at each site

This table highlights the gym equipment present at each gym by type of gym equipment. Most OGs (83.3%) had a "Walker-Stepper Elliptical 1" followed by the "Leg press 1" (77.8%), "Pullup chair 1" (66.6%), "Monkey Horizontal Bar 1" (61.1%), and "Twister" (55.6%).

Gym Equipment	Tot Use (n)	OR T	BD	WG	NP	SRC	SSG	TP	NG	IRC	MD	OCP	LR	DRP	PP	FP	WI	MP	JM	Tot Equi
Scaling Ladder	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Monkey Horizontal Bar 1	374	1	1	1	1	0	1	0	1	1	0	0	0	1	0	1	0	1	1	11
Monkey Horizontal Bar 2	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Balance Beam	76	1	1	0	1	0	1	1	0	0	1	0	0	0	0	1	0	0	0	7
Side Twister	67	1	0	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	6
Round Twister	22	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Twister	83	0	1	0	0	0	0	1	0	0	1	1	1	1	1	0	1	1	1	10
Walker-Stepper-Elliptical 1	190	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	15
Walker-Stepper-Elliptical 2	66	1	0	0	1	1	1	0	0	1	0	1	0	0	0	0	0	0	0	6
Walker-Stepper-Elliptical 3	120	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3
4-in-one 1	54	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
4-in-one 2	17	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Situp wab 1	119	1	1	1	1	1	0	0	1	1	0	1	0	0	0	0	0	0	1	9
Situp wab 2	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Situp wab 3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Parallel Bar	59	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	6
Tai chi wheel 1	70	1	1	0	0	1	1	1	0	0	0	1	1	0	0	0	0	0	0	7
Tai chi wheel 1.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pullup Chair 1	175	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	1	12
Pullup Chair 2	53	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	3
Pullup Chair 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Push chair	23	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
Push up frame chair 1	41	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Push up frame chair 2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Push pull chair (2-in-1)	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Leg press 1	207	0	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	0	1	14
Leg press 2	31	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	1	0	1	6
Leg press 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Surfboard 1	86	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	1	6
Surfboard 2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Surfboard 3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Cycle	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Arm extension	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Back bar	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	2079	11	12	8	10	7	11	9	8	10	5	7	6	6	5	5	6	4	12	142
*P: Is the gym equipment present in this gym: 0=No ; 1 = Yes; 2 = Unknown																				

Addendum 3. Examples of infographics



OUTDOOR GYMS IN CAPE TOWN

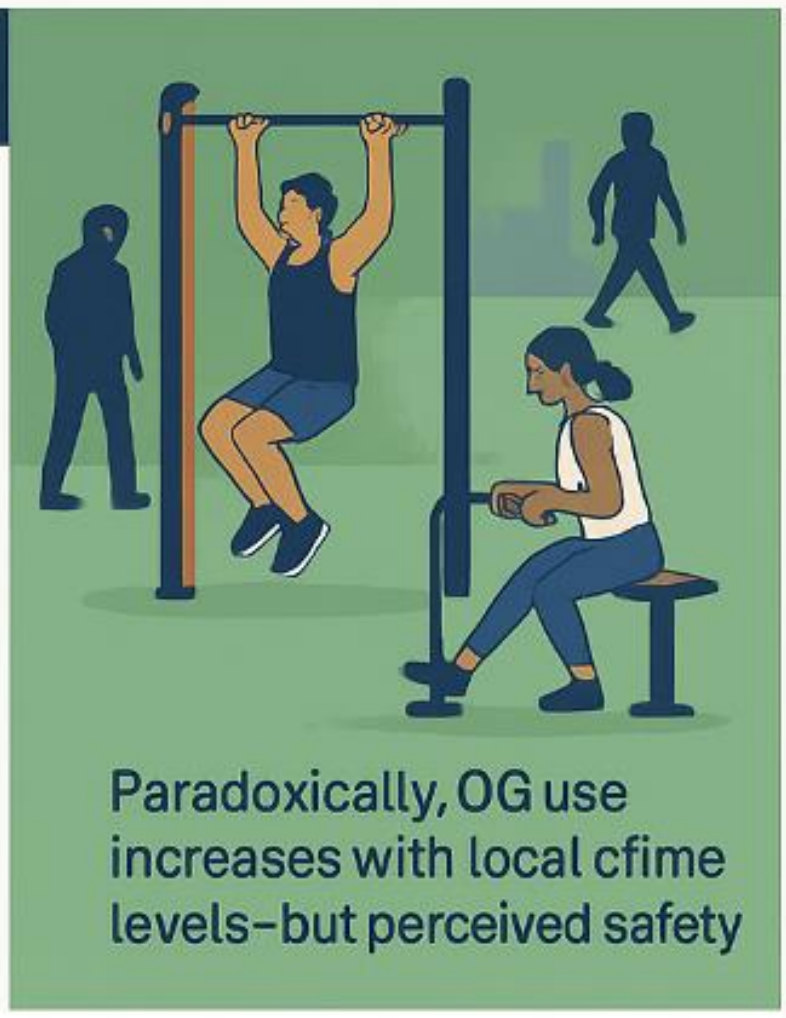
SAFE HAVENS IN UNSAFE PLACES

KEY INSIGHT

MORE GYM USE IN HIGHER CRIME ARAS

- 19–31% females
- 81% aged 18–35 often socializing

Paradoxically, OG use increase with local crime levels–but perceived safety still matters



Paradoxically, OG use increases with local cfime levels–but perceived safety

'OGs may serve as "islands of safety and connection" amid violent communities

- User requests
- Maintenance
- Lighting & visibility
- Cleanliness
- Awareness campaigns

HIGH-CRIME OG SITES

OR Tambo Rec Centre
96 stations
173 users

Khayelitsha
38 stations
86 users

Blue Downs
36 stations
72 users

ECONOMIC IMPACT

809,705 active users
827 premature deaths prevented

(Based on full-*scale* rollout to 250 **OGS** *citywide*)

22

Outdoor Gyms in Cape Town: Safe Havens in Unsafe Places

OVERVIEW

A mixed-methods stugy usung **spital** anyaysɛs, **spatiial analysis, and cost-benefit modelling** evaluated 18 outdoor gyms prerceived safety

KEY INSIGHT

MORE GYM USE IN HiGHER CRIME AREAS

- 19%–31% female
- 81 % 18–35 often soializing

Paradoxically, OG use increase with local crime levels – but *perceived* safety still matters

HIGH-CRIME OG SITES

OR Tambo Rec Centre
96 stations

High-crime area, but users report high perceived safety

Blue Dons

High-crime area, but users report high perceived safety

OGs may serve as "islands of safety and connection" within high-crime communities

USER REQUESTS

- ✓ More gyms
- ✓ Toilets
- ✓ Cleanliness
- ✓ Promotion

ECONOMIC IMPACT

309,705 active user

827 Premature deaths prevented

R14,6 billion per year