

Economic Evaluation of Health Intervention Initiatives: A Case Study of the Pinnaroo Project

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Study Objective

The Pinnaroo Project was a three and a half year arts and health initiative hosted over the period 2021-2024 that aimed to improve the health and wellbeing of the Pinnaroo Community. It involved a range of creative activities that celebrate the heritage and culture of the region with the aim of having the community engage in creative activities and improving community health and well-being.

Over the period there were more than 57 workshops and events conducted providing opportunities for members of the community to participate in development of creative skills – with outcomes regarding health and wellbeing monitored by survey

This report reviews the outcomes of the Project achieved from an economic value perspective. The major economic outcomes have been classified in assessment in the following groupings:

- Formal short term economic outcomes - or the economic footprint of the activities, the jobs and activity created.
- Informal short term social benefits, the consumer surplus associated with the cost to individuals of participating in the program along with items such as the value of volunteer time.
- The potential for longer term economic outcomes – including aspects such as workforce retention and productivity improvements.
- Additional aspects of quality-of-life benefit, including general community outcomes.

The objective of this report is to provide a modelled quantification of outcomes achieved re the above – in terms of turnover, incomes and employment generated, and other forms of value created. Where outcomes are considered to be relevant and data is not directly available, estimates are derived from generally conservative assumptions.

Summary of Evaluation

The core outcomes of the project as measured through the on the ground research included:

- Over the 3 years there were more than 57 workshops and events conducted
- Over the 3 years, 616 feedback forms were collected from workshop and event participants, indicating that:
- The median hours of arts activities per Mallee community members who participated increased over 2022 & 2023, both within the project, as well as in wider arts involvement that doubled.
- Moreover, the proactive engagement benefit of the Project is shown in a three time increase in participation in creative activities.
- Satisfaction was very high.
 - overall 99% satisfied and very satisfied.
 - Same satisfaction ratio with workshop price (prices varied)
- The more statistically significant health outcomes observable included:
 - Participation generated an improvement in depression outcomes -reduction in those with moderate to severe depression and increase in those reporting no depression.
 - There was a decline in those with 4+ alcohol days.
 - There was a reduction in smoking
- Other variables were assessed in the survey with more mixed results individually but the overall impression is participation resulted in more preventative health activities.

This paper provides an economic evaluation of the outcomes associated with the program – a benefit cost analysis. The analysis is indicative in that it is a modelled result based on general but possibly conservative assumptions which, while they have some support from the survey and in the literature, are guides only. The survey of participants focussed on health outcomes – and while some of the economic outcomes are linked to those results, some are more directly related to the activity more broadly. The evaluation is summarised as follows (derived from the list of possible benefits above):

Economic activity associated with the program (annual - 2021-2023)

Total activity created	\$ 63,000
Regional incomes created	\$ 32,000
Short term well-being benefit	\$ 23,000

Activity created is the economic footprint of the program in the region (i.e. the expenditure it creates in the region). It generates incomes for employees in the businesses linked to the program as estimated under the regional incomes row above (this is not additive to the activity¹) and this is direct and induced incomes created through supply chain impacts. The regional incomes are generated through 605 hours of employment hours in the community.

But the program also can be considered to have longer lasting benefits – the health outcomes, and the interest in creative pursuits will be extended beyond the program. The annual benefits are estimated using what are expected to be conservative assumptions under outcome categories as below, and evaluated over a 5 year period, discounted at a high real level of 15% to allow for the dissipation of the program benefit so as to relate it to the 2021-2023 program, rather than a presumption of the program repeating (which of course would have the potential to further build the benefits over time).

In short, the present value of the future benefits of the program was an estimated economic community value over the coming five year of almost \$600,000 – with the various aspects being:

Cost saving in health service provision	\$115,000
Business cost savings through reduced sick leave	\$150,000
Labour Skills development (import replacement)	\$119,000
Business productivity improvements	\$41,000
Quality of Life Benefit	\$172,000
	\$597,000

The first two aspects are directly related to the health outcomes achieved of the program and make up almost half of the overall benefits. Again, the assumptions behind these estimates could be further validated by additional research but are supported by the general literature.

Therefore, the total benefit over the three years of the program and the longer term benefits (constrained to 5 years) are \$652,000 (present value terms for the future benefits), relative to the costs of running the program of \$283,516 – or a net benefit of \$368,484 and benefit to cost ratio of 2.3.

¹ Activity is a gross measure of expenditure in the region linked to the program. Incomes are the direct and induced incomes generated as a consequence, consistent with measurement of economic outcomes under the national accounting framework.

Project Context

The Pinnaroo Community

The Pinnaroo Project is a 3 plus years arts and health initiative hosted over the period 2021-2024 that aimed to improve the health and wellbeing of the Pinnaroo Community. It involved hosting within the region a range of creative activities that celebrate the heritage and culture of the region which based on the evidence from the literature would lead to improved community wellbeing and improved physical and mental health outcomes.

Pinnaroo is a town in the Murray Mallee region of South Australia, near the border with Victoria, 243 km east of Adelaide. Pinnaroo is the gateway to South Australia from Victoria and New South Wales on the Mallee Highway or from Tailem Bend off Highway 8. Pinnaroo is a major centre for the surrounding wheat, barley, sheep and mixed farming area. It was first settled in 1869, although it did not become significantly populated until the early 1900s. Although the area is a traditional rural centre, the natural underground water supply is diversifying the land use with market gardening of potatoes and onions.

From the 2021 census, the town had a population of 575 people (and of these 505 were 15 and over in age²) with 141 households. The median age was 46, with 48% female and 52% male. There were an average number of 1.9 people per household, and the median weekly household income was \$1,174.

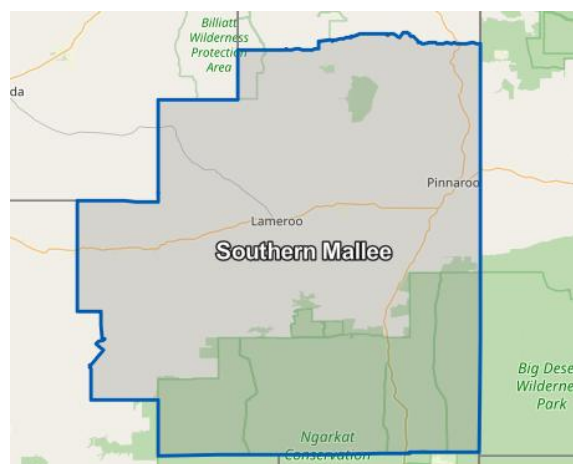
As noted above the town provides services to the surrounding farming district. It is part of the District Council of Southern Mallee, which includes other towns including Lameroo (population of 567 and 41 kms east of Pinnaroo) and Parilla (population of 159 and 27 kms east of Pinnaroo (i.e. in between Lameroo and Pinnaroo)). Renmark and Berri are 150 kms to the north, while over the border there are small Victorian towns including Murrayville (population 270 and 28 kms to the west).

Figure 1: Map of Pinnaroo township



Source: ABS Census

Figure 2: Map of Southern Mallee Council



Source: ABS Census

² 87.8% of the population were 15 or over, compared to 83% for SA as a whole.

Figure 3: Pinnaroo location relative to Adelaide



Source: Google Maps

The dominant employment industry is agriculture, while health and social services is the second largest employment industry for Pinnaroo residents (see Table 1). In terms of health services the Pinnaroo Soldiers' Memorial Hospital provides acute services ranging from in-hospital care for adults and children by local general practitioners to outpatients and aged care beds, and the area is supported by the Mallee Medical Practice, based in Pinnaroo. Additional Health Services in Pinnaroo include:

- Murray Mallee Community Health Service - Provides community-based health services across the region, operating from three sites in the region (including Pinnaroo) and provides Aboriginal health, Aged Care Assessment Team, community health nursing, diabetic education, dietetics, early childhood health, health promotion/primary health care, occupational therapy, palliative care, physiotherapy, planned activity groups for older persons, podiatry, prosthetics and orthotics, social work, speech pathology, and women's health.
- The Mallee Border Health Centre which provides nurse practitioner services, physiotherapy, podiatry, mental health social work/counselling, and visiting GP services.
- Pinnaroo is served by the SA Ambulance Service (SAAS) volunteer ambulance service with volunteers crewing emergency ambulances and community response vehicles Wikipedia across over 70 volunteer stations.

Pinnaroo is also the seat of the local government area of the Southern Mallee District Council.

Additional health services in are available in neighbouring towns including Lameroo and Karoonda, and Renmark and Berri.

Table 1: Employment by Industry – Pinnaroo and Southern Mallee

Industry of Employment	Place of Residence		Place of Work
	Pinnaroo	LGA - Sthn Mallee	LGA - Sthn Mallee
Agriculture, Forestry and Fishing	43.3%	49.9%	50.3%
Mining	0.0%	0.6%	0.5%
Manufacturing	3.1%	1.6%	1.9%
Electricity, Gas, Water and Waste Services	0.0%	0.0%	0.0%
Construction	1.8%	3.2%	3.5%
Wholesale Trade	6.1%	5.4%	4.5%
Retail Trade	4.6%	5.3%	5.3%
Accommodation and Food Services	5.6%	3.6%	4.0%
Transport, Postal and Warehousing	2.8%	2.5%	2.0%
Information Media and Telecommunications	0.0%	0.0%	0.0%
Financial and Insurance Services	1.0%	0.4%	0.4%
Rental, Hiring and Real Estate Services	0.0%	0.0%	0.0%
Professional, Scientific and Technical Services	1.0%	0.7%	0.5%
Administrative and Support Services	2.5%	2.2%	1.4%
Public Administration and Safety	4.3%	4.2%	4.5%
Education and Training	6.6%	6.6%	6.6%
Health Care and Social Assistance	10.4%	8.5%	9.1%
Arts and Recreation Services	0.0%	0.0%	0.0%
Other Services	4.8%	2.6%	2.2%
Inadequately described	2.0%	1.3%	2.0%
Not stated	0.0%	1.3%	1.3%
Total	100.0%	100.0%	100.0%

Source: 2021 ABS Census

The Pinnaroo Project

The project involved more than 57 workshops and events conducted, engaging the local community and providing them with opportunities to participate in creative activities. The core characteristics of the project included:

The core outcomes as summarised from on the ground research include

- Over the 3 years, 616 feedback forms were collected from those who attended workshops and events.
- The median hours of art activities per Mallee community members who participated increased over 2022 & 2023, both within the project, as well as in wider arts involvement.
- The proactive engagement benefit of the Project is shown in a three time increase in participation by attendees in creative activities.
- Satisfaction was very high:
 - Overall 99% satisfied and very satisfied.
 - There was the same level of satisfaction ratio with workshop price (prices varied between workshops)
- The more statistically significant health outcomes observable were that there was:

- Improvement in depression outcomes -reduction in those with moderate to severe depression and increase in those reporting no depression.
- A decline in those with 4+ alcohol days during a week.
- A reduction in smoking rates.
- Other variables were assessed in the survey with more mixed results individually but the overall impression is more preventative health activities.

Literature Review

Engagement in Creative Activities and impacts on Social Well Being

There is an extensive and long-lived literature on the importance of community engagement in creative activities and its impact on quality of life. This body of research spans multiple disciplines including public health, urban planning, sociology, and economics, reflecting the multifaceted nature of creativity's influence on communities. Galton et al (Galton, Steward, McLellan, & Page, 2012) note that "the accumulating body of evidence strengthens the view that creative interventions do have the potential to promote wellbeing". Their research builds on decades of studies examining how participation in arts, cultural programs, and creative pursuits contributes to individual and collective health outcomes, including reduced social isolation, improved mental health, enhanced cognitive function, and stronger community cohesion. A recent comprehensive review found initial level evidence that a range of creative activities positively affect wellbeing outcomes including subjective wellbeing, positive mood, social connection, as well as reduced anxiety, depression or stress (Scherer, 2024). Research has demonstrated that the relationship between creativity and subjective well-being is reciprocal rather than unidirectional, implying that well-being can enhance one's creativity, and creativity can increase subjective well-being as well (Tan, Chuah, Lee, & Tan, 2021). The mechanisms that lead to wellbeing outcomes are both relational and personal, including active engagement and participation in creativity, autonomy and choice around creative practices, and feeling empowered and challenged to create and reflect (Scherer, 2024).

Engagement in Creative Activities and impacts on Community Health Outcomes

There is also an extensive and growing body of literature that supports the existence of benefits arising from the involvement of creative activities in a health context. The evidence for specific health benefits is substantial and spans multiple domains. Research has documented that enhanced self-expression, reflection, self-awareness, relaxation and reduced stress, reduced blood pressure, and boosting the immune system (Leckey, 2011) are among the therapeutic effects of creative activities. More specifically, being creative can increase positive emotions, lessen depressive symptoms, reduce stress, decrease anxiety, and even improve immune system functioning (Brenner, 2019)

The mental health benefits are particularly well-documented. Six studies using control groups reported positive changes in depression, anxiety, stress, and well-being (Bulkhave, Creek, Linstad, & Fransden, 2025), providing compelling evidence for the causal relationship between crafts-based interventions and mental health outcomes. During the COVID-19 pandemic, longitudinal research found that increases in time spent doing gardening, woodwork and DIY, and arts and crafts were longitudinally associated with improvements in mental health and wellbeing (Bone, et al., 2023). The cognitive benefits extend across the lifespan, with creative activities shown to improve memory, enhance cognitive flexibility, and promote executive function.

For older adults and those with cognitive impairment, the benefits are particularly significant. Research on visual art therapy has shown that visual art enhances positive memories by reducing worries about death and ruminative thoughts and reinforces sustained attention and intellectual engagement as well as episodic memories and learning (Savazzi, et al., 2020) in subjects with

dementia. A systematic review confirmed that people with dementia benefit from art therapy, and these interventions when incorporating elements of being 'in the moment' increase opportunities for communication between people with dementia and their caregiver(s) and facilitate person-centred therapeutic activities (Emblad & Mukaetova-Ladinska, 2021). Furthermore, creative activity has been shown to reduce depression and isolation, offering the power of choice and decisions for dementia patients (Hennemann, 2006). Creative Expressive Arts-based Storytelling therapy has demonstrated that the inclusion of both nonverbal and verbal tasks stimulates various cognitive domains, helping to maintain cognitive abilities and slow cognitive decline (Zhuo, Yan, & Lin, 2025) in older adults with dementia, while also providing emotional relief and fostering social interaction.

Physical health benefits complement these cognitive and psychological outcomes. Research has demonstrated that individuals who have written about their own traumatic experiences exhibit statistically significant improvements in various measures of physical health, reductions in visits to physicians, and better immune system functioning (Cohut, 2018). More specifically, Barnett and Vasiu conclude that the evidence underscores the potential of creative arts as a complementary therapeutic strategy alongside conventional care and other evidence-based mind-body modalities. By elucidating the shared neural mechanisms between creative arts engagement and ER, this review contributes to the theoretical and practical understanding of the role of creative arts in mental health (Barnett & Vasiu, 2024). Music therapy has been shown to be particularly effective, with studies demonstrating that music therapy can enhance parasympathetic tone and reduce catecholamines and cytokine levels in elderly patients with cardiovascular diseases and dementia (Trappe, 2010). Furthermore, arts engagement has contributed to improved maternal and infant health during prenatal and postnatal periods, reduced stress, improved cardiovascular health, enhanced immune function and sleep quality, and better physical activity (National Heart, Lung and Blood Institute, 2024). The holistic nature of these benefits—spanning mental, emotional, cognitive, social, and physical domains—underscores the significant role that creative activities can play in comprehensive health promotion and disease prevention strategies across the lifespan.

Creative Activity, Community Economic Development, and the Connection to Health

In addition to these social and health benefits, there has been, since the influential work of Richard Florida on the "creative class," a strongly held view that creativity is a potential driver of economic development (Florida, *Cities and the Creative Class*, 2005). Florida's seminal work argued that the creative class is a key driving force for the economic development of post-industrial cities in North America, positioning this class as comprising approximately 30 percent of the U.S. workforce. Florida's research demonstrated that cities and regions can no longer compete simply by attracting companies or by developing big-ticket venues like sports stadiums and downtown development districts; to truly prosper, they must tap and harness the full creative potential of all people, basing their strategies on a comprehensive blend of the "3 Ts" of economic development: Technology, Talent, and Tolerance. This perspective shifted urban development discourse by positioning cultural amenities, tolerance, and creative vibrancy as key factors in regional competitiveness, challenging traditional economic development models focused solely on tax incentives and infrastructure. Florida's work on diversity and creativity as basic drivers of innovation and regional and national growth has influenced policy makers and economic development professionals worldwide, though it has also attracted significant critique regarding issues of gentrification and inequality (Peck, 2005).

Building on Florida's framework, Cerisola (2018) extended the analysis to examine the correlation between creative activities and regional development, arguing that the "mental cross-fertilization of talented people in different fields stimulates the best and most original ideas." Cerisola's research distinguished between three types of creativity—artistic, scientific, and economic—and demonstrated that regions with higher concentrations of creative activity across these domains

experienced enhanced economic performance, though the relationship was non-linear and required a critical mass of creative workers to generate significant regional benefits (Cerisola S. , 2019).

The Economic Returns of Community Health Investment

The relationship between community health and economic prosperity operates through multiple interconnected pathways, with substantial evidence demonstrating measurable returns on health investments. At the macroeconomic level, improved health accounted for about one-third of the overall GDP-per-capita growth of developed economies in the past century (McKinsey and Company, 2020), while poor health costs around 15 percent of global real GDP from premature deaths and lost productive potential among the working-age population annually. Research across developing countries has found an economic return of between \$2 to \$4 for every \$1 invested in health (Brookings, 2020), with healthier populations demonstrating increased labour supply, higher productivity, and greater capacity for economic participation.

These broad economic benefits manifest through specific, measurable outcomes at the workplace and community levels. The World Health Organization reported that workplace health initiatives can help reduce sick leave absenteeism by 27% and health-care costs for companies by 26% (Nawata, 2024), while health-related productivity costs were over four times higher than medical costs (Loeppeke, et al., 2007). Mental health emerges as a particularly significant driver of productivity losses, with research demonstrating that a change in mental health has an effect on absenteeism more than three times greater than a change in physical health (Bryan et al., 2013). A systematic review and meta-analysis of workplace health interventions found that the effectiveness of such interventions for reducing absenteeism was -1.56 days (95% CI, -2.67 to -0.44) and -2.65 days (95% CI, -4.49 to -0.81) when considering only moderate-quality randomized controlled trials (Tarro, Llaurodo, Uldemolins, Hermoso, & Sola, 2020) providing robust quantitative evidence for the impact of health-focused interventions on reducing work absences.

Emerging research has begun to establish direct links between community-level health conditions and employer costs. McHugh et al.'s study of four manufacturing plants serving as economic anchors in their communities found that community health can drive the health of the business (McHugh, et al., 2018), with poorer community health indicators associated with increased employee absenteeism, behaviour issues, and tardiness. Similarly, a multi-employer study examining 31 zip code regions in greater Philadelphia demonstrated that employees living in areas with poorer community health had higher emergency department utilization, with community health serving as an important descriptive marker for ED utilization and associated costs (McIntire, et al., 2019). These findings have prompted recognition among employers that even when an employer implements health-promoting strategies at the worksite, many employees then go home to unhealthy neighbourhoods, and the workplace progress is compromised, necessitating investment beyond workplace wellness programs into broader community health improvement (McHugh, et al., 2018).

Bridging Creative Activities and Economic Returns: Implications for Regional Communities

The economic impact of health extends beyond direct employer costs to encompass broader community economic development, with particular relevance for regional and rural communities where economic diversification and population retention are critical challenges. Community-based health interventions have demonstrated measurable returns on investment, with rigorous randomized controlled trial evidence showing that every dollar invested in standardized community health worker interventions addressing unmet social needs would return \$2.47 to an average Medicaid payer within the fiscal year (Kangovi, Mitra, Grande, Long, & Asch, 2020). These findings collectively establish that investments in community health generate substantial economic returns through multiple mechanisms including reduced absenteeism, increased productivity, lower

healthcare costs, job creation, and broader economic multiplier effects, providing a compelling business case for cross-sectoral investment in population health improvement. Given the established links between creative activities and health outcomes across multiple domains, and the demonstrated economic value of health improvements at the community level, there exists a logical—though largely unexplored in the literature—pathway through which community investment in creative activities programs may generate economic returns through health-mediated mechanisms. This potential is particularly salient in smaller regional communities where: (1) creative activities can address multiple health determinants simultaneously (mental health, social connection, cognitive function, physical health), (2) community-scale interventions can reach a significant proportion of the population, and (3) economic benefits accrue locally through reduced healthcare costs, improved workforce productivity, and enhanced community vitality that supports population retention and economic resilience.

A Benefit Cost Assessment of the Pinnaroo Project

With this literature as context, the objective of this project is to provide an indicative benefit cost analysis of the Pinnaroo project – focussing on tangible economic outcomes.

The data collected during the project demonstrates clearly the satisfaction and engagement outcomes of participants, while also providing evidence that participation resulted in a reduction in previous participant activities that are known to create health risks.

The purpose of this study is to provide a preliminary assessment that quantifies the net benefits of this activity. The funding provided for the project involved a budget of \$283,516. This is taken as the cost of the project.

The modelling of the value of outcomes or benefits is constructed under the following framework:

- Formal short term economic outcomes in the region- or the economic footprint of the activities, the local jobs and activity created.
- Informal short term economic outcomes – the induced (or whole of economy outcomes), along with items such as the value of volunteer time.
- The potential for longer term economic outcomes – including aspects such as workforce retention and productivity increases.
- Additional aspects of quality of life benefit, including general community outcomes.

Estimating the formal regional economic outcomes during the project

Core assumptions of the parameters applied in calculating the economic outcomes are as follows:

# of workshops/events/sessions	57	As per the project information
Average length of commitment	3 hours	It is assumed the average duration of an event or workshop is 3 hours
Average price per workshops/events/sessions	\$50	Workshops and events have varied in price – and \$50 is assumed to be the average
Average attendance workshops/events/sessions	30	The assumed average attendance per event
Total attendances	1710	Total attendance is calculated as (57 x 30)
Total attendees	342	It is assumed that participants attended an average of 5 times. This implies that around 50% of people from the town and surrounding areas attended at least once.
Annual Ticket Revenue	\$28,500	57 workshops with 30 attendees on average at average ticket price of \$50
Spend on associated activity	\$14,250	Assumed additional operational spend on presenting workshops (funded out of funding, @ 50% of tickets)
% of presenters from outside region	95%	It is assumed the majority of workshop presenters are from outside the region
Spend per day	\$100	The average assumed spend of presenters per day they spend in the region
# of days	2	Assumption re number of days spent by presenters in region (before and/or after)
Spend of presenters in region	\$8,664	# of workshops by the proportion of presenters from outside of region by spend while in region (adjust down by 20% to allow for direct imports)
Spend of researchers while in the region	\$8,664	Assumed to be the same as presenters
Spend of volunteers	\$2,835	Assumed to be ½ of the value of volunteer time (see below)

Therefore the total created spend in the region by the hosting of the program is in round terms \$63,000. This is input into an economic model of the Southern Mallee region³ and estimated to support new incomes (compensation of employees and gross operating surplus for businesses) of \$32,000.

Informal social benefits

Other short-term benefits are linked to the above, and have been estimated as follows:

- Value of volunteer time in the activities – it is assumed that:

³ Incomes created are a more appropriate measure of economic benefit than the direct expenditure. To estimate this, an economic model of the Southern Mallee region has been generated for this project, using the national IO table produced by the ABS for 2021-22 year, and creating a South Australian and Southern Mallee regional table using the location quotient method by applying state and regional national accounts and labour force data for a 26 industry sector model. It is assumed that the majority of the spend is in food services and accommodation. By using the industry ratios of the model and assuming no supply constraints a measure of Gross Regional Product is produced. 72% of the outcome is in direct impacts and the balance of 28% is in induced (supply chain, and consumption induced effects).

- There are 5 volunteers who have spent an average of 15 hours in supporting the development of the program
 - For every workshop/event there is an average of 1 volunteer spending an average of two hours involved in supporting the event
 - That volunteer time is valued at \$30 per hour (roughly average hourly wage)
- This provides an estimated value of volunteer time of \$5,670
- Cost savings in other areas of community infrastructure – specially focussing on a reduction in demand on health care services
- Consumer surplus (or value above cost) of participating in the program. Economics acknowledges that on average people value their consumption of goods and services above what is paid, referred to as consumer surplus. Attendees are estimated (as above) to have spent \$28,500 on tickets, and \$14,250 on associated activities (food and beverage etc). The average consumer surplus associated with this spend is conservatively assumed to be 40% of the spend (noting the high levels of satisfaction of people participating) – or a total of \$17,400

Therefore, the well-being or social benefit of the program is estimated at \$23,000 (in round terms).

The potential for longer term socio-economic outcomes

As indicated by the literature, the health benefits of participating in the program produce longer terms for the community. To provide an order-of-magnitude estimate of the value of this benefit, the outcomes are categorised and monetised as follows:

- Reduction in the costs of operating health services in the region due to the preventive health benefits of lifestyle choices. It is assumed that there is an average of 1 less required visit per person participating in the program at an average private cost of \$50, and an equal public cost. This therefore produces an annual benefit of \$34,000.
- Impacts of participation on physical and mental wellbeing, and the potential impact on productivity and business development in the region. As a way to monetise this it is assumed:
 - that on average participants in the program required 0.5 days sick leave less per year linked to the program participation and based on the average salary (taken from the economic model) this results in business savings of \$45,000 per year.
 - there is broader level benefit of a of general improvement of labour productivity across the region of 0.025% per annum – estimated at \$12,500 per year.
- Impact on labour skills development and potential impact on regional development. Again the literature supports the perspective that skill development from creative activities translates into improved productivity in the workplace allowing increased competitiveness and the ability to generate regional exports and displace imports) and to place a value on this it is assumed that this is focussed around the business service activities in the town – with that these business generate increased output of 2.5% of current turnover, with regional incomes associated with this of \$35,000 annually.
- Broader aspects of benefit, including general community well-being (which inter-relates with the outcomes achieved above). It is assumed that each participant (and their immediate circle) has an ongoing annual wellbeing benefit of what was spent in attending (adjusted for inflation). This produces an annual well-being benefit of \$51,300 for the community.

These annual amounts are assumed to be sustained for 5 years, and converted to a present value based on a very conservative real discount rate of 15%. As such the present value of the longer-term benefits is estimated at:

Cost saving in health service provision	\$115,000
Business cost savings through reduced sick leave	\$150,000
Labour Skills development (import replacement)	\$119,000
Business productivity improvements	\$41,000
Quality of Life Benefit	\$172,000
	<hr/>
	\$597,000

Conclusion

The Pinnaroo Project has demonstrated impacts in terms of attendances and engagement with the local community, and the creation of health benefits for participants.

This paper provides an indicative assessment of the return on investment from the project and consistent with the literature confirms a positive outcome. The total benefit over the three years of the program and the longer-term benefits (constrained to 5 years) are \$652,000 (present value terms for the future benefits), relative to the costs of running the program of \$283,516 – or a net benefit of \$368,484 and benefit to cost ratio of 2.3.

This benefit-cost ratio of 2.3 is consistent with, and at the conservative end of, returns documented in the broader literature on community health investment, which suggests returns of \$2–\$4 per dollar invested (Brookings, 2020) and, in randomised controlled trial conditions, returns of \$2.47 within a single fiscal year (Kangovi, Mitra, Grande, Long, & Asch, 2020). The modelling assumptions underlying this estimate are deliberately modest — for example, the assumed reduction in sick leave of 0.5 days per participant represents a fraction of the 27% reduction in absenteeism documented by the World Health Organization (Nawata, 2024)— suggesting the true community benefit may be meaningfully higher.

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