

In-Depth Data-Driven Insights: User Engagement and Behavioral Analysis for Norwood, Payneham & St. Peters Council (2019-2023)

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Objective:

The objective of this analysis was to evaluate the trends in sessions and new user growth across various categories and organizations from 2019 to 2023, using data extracted from Google Analytics and the SAcommunity database using Python, Numpy and other data engineering tools.

Please note that: *To systematically analyze user engagement across various website pages, SAcommunity leverages Google Analytics to collect detailed session data. This process involves tracking and recording user interactions within the site, encompassing metrics such as page views, session duration, and bounce rates. The data extraction was configured to capture a comprehensive view of user behavior patterns, enabling an in-depth assessment of page performance and user navigation flows. This structured approach ensures the data integrity and relevance necessary for subsequent analytical assessments.*

Data Overview:

The data extracted are classified into the following categories:

1. Sessions by Primary Category
2. Sessions by Organization
3. New Users by Organization
4. New Users by Primary Category
5. Sessions by Age
6. Sessions by Gender
7. Sessions by Device Category
8. Sessions by Medium

Each sheet provided data for consecutive fiscal years from 2019 - 2023, allowing for a year-over-year analysis of trends in sessions and new user growth.

1. Trends in Sessions Change Per Year by Primary Category:

The analysis began with the "**Sessions by Category**" sheet. Data cleaning was essential to remove unnecessary columns, focusing on relevant annual session data. Key insights included:

- **Recreation:** Displayed a moderate increase of 2.2% from 2019-2020 to 2020-2021, followed by a decline of 8.1% the next year, but slightly recovered by 1.43% in 2022-2023.
- **Health & Disability:** This category showed a decrease of 2.95% in 2020-2021 but recovered with an increase of 25.68% in 2022-2023, totaling an overall growth across the four years.
- Categories such as **Religions & Philosophies** experienced significant growth, particularly a 61.85% increase in 2021-2022, demonstrating the demand for services within this category.

Growth in categories like "**Religions & Philosophies**" and "**Community Organization & Development**" showed significant increases in certain years, indicating increased community engagement or event-driven participation. Fluctuations in categories like "**Law & Justice**" and "**Public Safety**" suggested volatility, possibly influenced by external events or changes in community needs.

2. Trends in Sessions Change Per Year by Organization:

The organizations by session volume were identified and analyzed for year-over-year growth:

- **Drug & Alcohol Services SA:** The leading organization listing in terms of sessions, with a total of 2,562 sessions over four years, although it saw a consistent decrease in sessions year-over-year, with a drop of 21.44% in the latest year 2022 - 2023.
- **Roma Mitchell Community Legal Centre Inc.:** This record experienced dramatic fluctuations, including a 298.3% increase in sessions during 2021-2022, followed by a 21.97% decrease, reflecting the impact of specific events or initiatives.

Information on organizations like "**Drug & Alcohol Services SA**" and "**Roma Mitchell Community Legal Centre Inc.**" dominated session counts, though they experienced fluctuations that might indicate shifts in service demand or capacity changes. Newer or smaller organizations showed significant percentage growth from a smaller base, suggesting successful outreach or expansion of services.

Find out more about Alcohol and Drug Consumption trends at Australian Institute of Health and Welfare's National Drug Strategy Report : <https://www.aihw.gov.au/reports/illicit-use-of-drugs/national-drug-strategy-household-survey/contents/alcohol-consumption>

3. New Users Per Organization Across All Years:

This analysis focused on total new user acquisition by organizations throughout the available data range:

- **Drug & Alcohol Services SA:** Dominated new user engagement with a total of 1,758 new users over the 4 years, showing strong and consistent outreach.
- **Our Lady Queen of Peace Catholic Church:** Saw a considerable increase in new users, peaking in 2021-2022 with 373 new users, a 82% increase from the previous year, likely a response to relaxed Covid-19 restrictions.

Searches for "**Drug & Alcohol Services SA**" led in new user counts, reflecting its central role in addressing community needs related to substance abuse. Growth trends showed that some organizations, for example *Sportsmed SA Hospital & Clinic, Adelaide Snake Catchers, DASSA Central Service, Arena Community Club* etc. significantly increased their user base over the years, indicative of effective engagement strategies or expanding programs.

4. New Users Per Category Across All Years:

Finally, new user trends by category were analyzed to identify areas with the highest community engagement:

- **Recreation:** Achieved the highest new user count with 6,976 new users, demonstrating the highest community engagement level.
- **Health & Disability** and **Religions & Philosophies:** These categories attracted 4,464 and 4,048 new users respectively, highlighting significant community reliance and interest.

The "**Recreation**" category saw the highest overall growth in new users, suggesting strong and consistent community interest. Categories like "**Health & Disability**" and "**Religions & Philosophies**" also saw significant new user numbers, highlighting their importance in meeting community needs.

5. Sessions by Age:

- **2019-2020:** The most active age group was 25-34 years, followed by the 65+ age group. The younger age group 18-24 had the least engagement.
- **2020-2021:** The 25-34 age group maintained its lead, but there was a noticeable uptick in sessions from the 18-24 age group, indicating growing interest.
- **2021-2022:** Engagement from the 18-24 age group continued to rise significantly, showing a trend toward younger user involvement.
- **2022-2023:** The trend of increasing participation from the 18-24 age group persisted, with their share of sessions reaching 16%, marking the most substantial growth over the years.

Over the span of four years, **the youngest age group (18-24)** exhibited the most substantial **growth** in engagement, with session counts **surging** by approximately **125%**. The **middle-age bracket 25-34 years** remained the **most active**, though its session count experienced a moderate **increase** of

17%. The **older demographic 65+** saw a **decrease** in session share by **16%**, indicating a shift towards younger audiences.

6. Sessions by Gender:

- **2019-2020**: Female users dominated session counts with 61%, while male users accounted for 39%.
- **2020-2021**: Female engagement slightly dropped to 59%, but they still represented the majority of sessions.
- **2021-2022**: Female session engagement saw a minor decline but still commanded over half of the total sessions at 58%.
- **2022-2023**: Female participation increased again to 59%, indicating a bounce-back in engagement levels.

The **female** demographic consistently led session counts, with an overall **increase** of around **25%** over the four years. **Male** engagement also **rose** notably, by about **36%**, suggesting a broadening in reach and adoption among both genders.

7. Sessions by Device Category:

- **2019-2020**: Mobile devices were used for 48% of sessions, closely followed by desktops at 45%.
- **2020-2021**: Mobile device usage rose to 51%, surpassing desktop usage, which also increased slightly.
- **2021-2022**: Mobile usage experienced a slight dip, capturing 56% of sessions, with desktop and tablet sessions following.
- **2022-2023**: Mobile sessions soared to 57%, reaffirming the trend towards mobile browsing and the necessity for mobile-optimized services.

The use of **mobile devices** for sessions **climbed** impressively, by over **62%**, confirming a definitive trend towards mobile browsing. **Desktop** sessions also increased by **16%**, despite the growing preference for mobile access. **Tablet usage**, on the other hand, **declined** by **22%**, reflecting a lesser focus on this device type.

8. Sessions by Medium:

- **2019-2020**: Organic search (*Organic search is defined as visitors coming from a search engine like Google or Bing*) was the primary medium, claiming a substantial 91% of all sessions.
- **2020-2021**: Organic search still dominated, but there was a marked decrease in its percentage share, likely due to an increase in direct sessions.
- **2021-2022**: Organic search held strong at 93% of sessions, continuing to be the chief medium.
- **2022-2023**: Organic traffic continued its dominance with 93% session share, indicating steady user behavior and search optimization.

Organic search stood out as the **primary** channel for sessions, with a significant **increase of 38%**, showcasing strong and increasing visibility in search engines. **Direct access** (*Any traffic where the referrer or source is unknown. When a visitor follows a link from one website to another, the site of origin is considered the referrer*) remained relatively **stable**, with a slight **decrease of less than 1%**. Sessions via **referrals** saw a nearly **48% rise**, indicating effective strategies in leveraging partnerships or external links.

Key Observations:

- Certain categories such as **Recreation** and **Health & Disability** consistently attract high levels of engagement, both in **sessions** and **new users**.
- The analysis of top organizations shows a need for adaptive strategies to sustain or increase engagement, particularly for those with volatile session counts.
- New user data highlights potential growth areas and could guide future outreach and resource allocation efforts to maximize community impact.
- The growing engagement of the **younger audience** and the **increasing** use of **mobile devices** stand out as pivotal trends.
- **Female** engagement remains **higher** than **male**, and **organic search** continues to be the primary driver of sessions.

Conclusion:

This comparative analysis underscores key trends and shifting patterns in user behavior from 2019 to 2023. These yearly snapshots paint a picture of evolving user preferences, with significant takeaways for each category.

- Certain categories and organizations have shown remarkable growth, underscoring their pivotal roles in the community.
- Volatility in some areas suggests the impact of external factors or the need for adaptive strategies to maintain or increase engagement.
- Continued monitoring of these trends is recommended to guide future planning and resource allocation to maximize impact.
- Notable is the increase in mobile usage and the growing engagement among younger users.
- Organic search and female users lead sessions count for all years.
- Organizations need to prioritize mobile optimization and consider strategies to maintain the engagement of older demographics.
- While organic search drives the majority of sessions, there is a need to reinforce direct and referral channels to diversify acquisition methods and mitigate the risks of over-reliance on organic traffic. Strategies should evolve with these trends to maintain alignment with user preferences and behaviors.

For detailed visualizations of these report please refer to the **Interactive PowerBI Report** below:
<https://app.powerbi.com/view?r=eyJrIjoiazgyMGNlMjM0OTJlMi00MjcwLWI4MTYtNTIzZTdiODVhYjJliwidCI6IjUwYzQ2LWNmMjctNDQwZi04YWQ3LWY5YzBiOGJmNmQyZiIsImMiOjEwEwfQ%3D%3D&pageName=ReportSection>