

TechBridge

Using Data to Decode The Intersection of COVID-19, Census Data, and Social Determinants of Health

Column, Line, and Area Charts, and When to Use Them

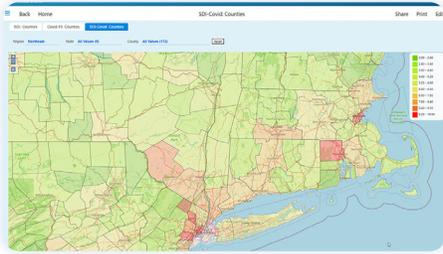
What Is SiteStats?

Five Sustainability Trends in Wine for 2021

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December 2020



03 Using Data to Decode The Intersection of COVID-19, Census Data, and Social Determinants of Health

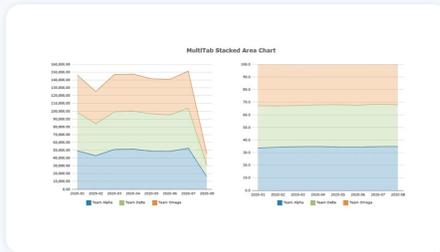
by George Dealy, Julie Lamoureux



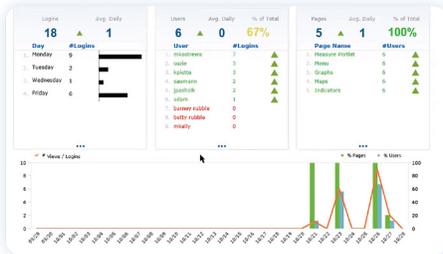
George Dealy,
VP, Healthcare Solutions

05 Column, Line, and Area Charts, and When to Use Them

by Keith Garvey



Julie Lamoureux,
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07 What Is SiteStats?

by Michael Kostrewa



Keith Garvey,
Senior Training Consultant

09 Five Sustainability Trends in Wine for 2021

by Meredith Galante



Michael Kostrewa,
Technical Support Specialist



11 Why Diversity Matters in Decision-Making

by Kathy Sucich



Meredith Galante,
Contributing Writer

13 New Customers

News Brief



Kathy Sucich,
VP of Marketing



14 A Letter from Our CEO, Fred Powers

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Using Data to Decode The Intersection of COVID-19, Census Data, and Social Determinants of Health

There has been a lot of data collected during the COVID-19 pandemic. There are the numbers we have seen from the beginning—everything from the number of cases, to the number of tests to the number of hospitalizations, to name a few. As time has progressed, though, the type of data collected has grown.

The data that is coming out of the pandemic could be helpful in a number of ways, and combined with the fact that it coincides with the census taking place in the United States, it could lead to valuable information that can have an impact on research into social determinants of health.

Social determinants of health

Social determinants of health are the physical environment and social circumstances that impact someone's well-being, including housing, food and nutrition, employment, and access to transportation. Studies show that these factors have a greater impact on an individual's health than what is represented by the information routinely collected in healthcare settings.

Healthcare providers are increasingly screening for social factors, but there is not enough information on enough individuals to provide much help in measuring and improving the health of populations. But given the importance of social determinants, it is worth trying to quantify them in order to take some kind of action on them.

Impactful data

The notable thing about the COVID-19 data is how well it meets the criteria for good data practices. Once the initial confusion settled down and the collection of data became more uniform, it checked a number of boxes that made it reliable for those working with the numbers:

- The data has been available on a relatively timely basis, with updates from around the world every day.
- It's reasonably well-defined and curated. For example, the meaning of the primary measures in Europe and Asia are the same there as they are in North America.
- It's accessible—easily downloaded from a number of convenient sources.

All of this has opened up opportunities for a significant amount of innovation in terms of visualization and communicating through data, as well as for data science to find useful patterns.

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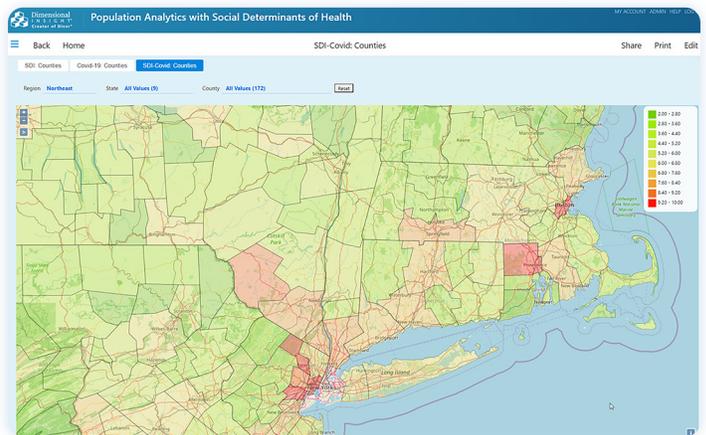
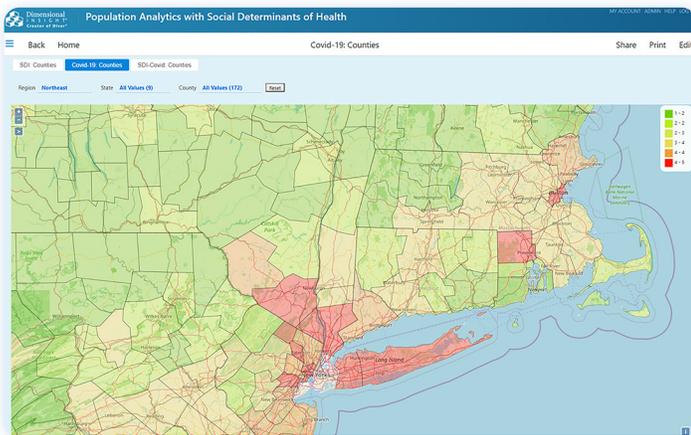


Intersection of COVID-19, social determinants, and the census

There are a variety of publicly-available data sources that provide highly summarized geographic information about social determinants of health. By itself this information can be used as a starting point for quantifying social determinants. When you combine that data, though, with data from other sources, you can really start to get a picture of the impact social determinants can have on health.

One such data source is the U.S. Census. In addition to counting the population, the Census Bureau uses the information it gathers to create estimates around such societal factors as manufacturing activity and housing. It also puts together the American Community Survey, which combines population data with social factors. Users can zero in on the census data down to very specific levels, such as neighborhood, which is beneficial when dealing with health issues.

When data from COVID-19 is combined with social data from the census experts can see where the two areas converge and intervene.



This graphic on the left shows the parts of New England with the most cases of COVID-19 per 100,000 people through the end of September, and the graphic on the right shows the combination of the two data sets, showing only the areas that have been hit hard by the pandemic, which also have high levels of social deprivation.

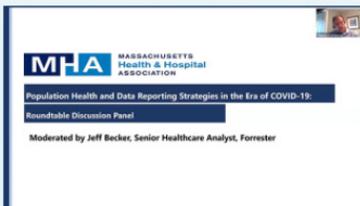
While data on COVID-19 is most widely available at the moment, data on other health outcomes is becoming increasingly available in forms that can be integrated with social determinants data. The next census might not be for another decade, but the time for organizations to make advances in their approach to population health is now. □

Recorded Dimensional Insight Webinars



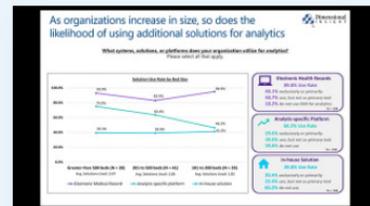
Using Data to Decode the Intersection of COVID-19, Census Data, and Social Determinants of Health

45:00



Population Health and Data Reporting Strategies in the Era of COVID-19

59:44



Discover the Top Challenges with Electronic Health Records (EHR) Analytics

42:12

George and Julie recently presented on this topic at the *HIMSS Collaborative Virtual Event*. To view their entire presentation,

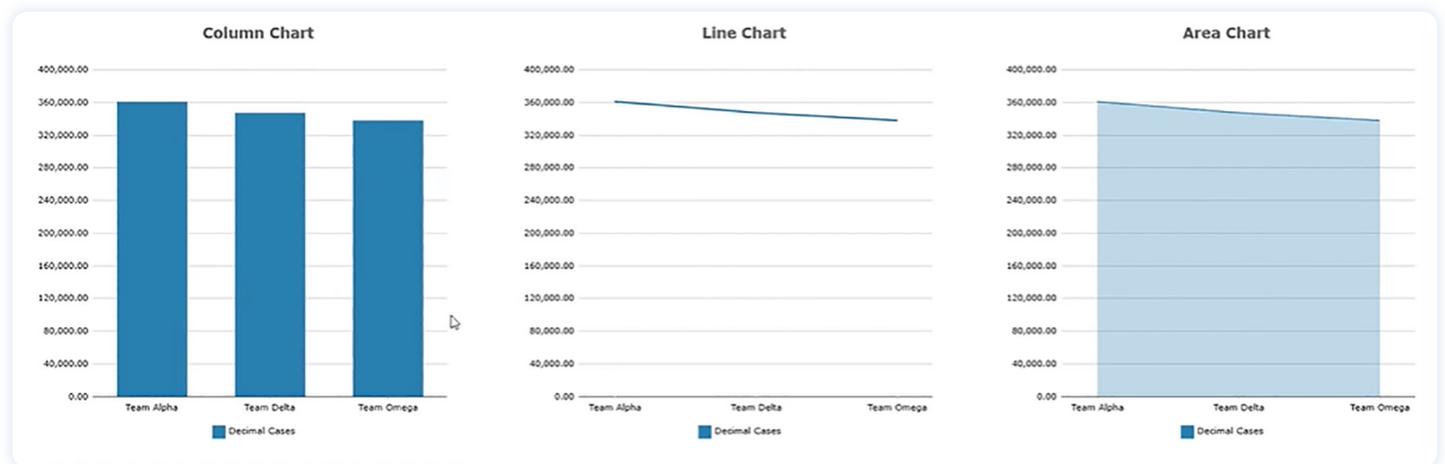
[Click here](#)

Column, Line, and Area Charts, and When to Use Them

Graphical representations can be necessary for making raw data understandable and digestible to readers. They take large amounts of data and process it in a way that makes connections and relations between numbers readily apparent at a glance. However, using the wrong type of graph for the set of information can have the opposite effect: making the data harder to understand by creating misleading or false connections. This is a common mistake that occurs when deciding between column charts, line charts, and area charts. While all three of these can be made using similar sets of data input, the output will tell a very different story depending on which type of chart is used. Let's take a closer look at these charts, and when each kind is most appropriate.

Keith Garvey

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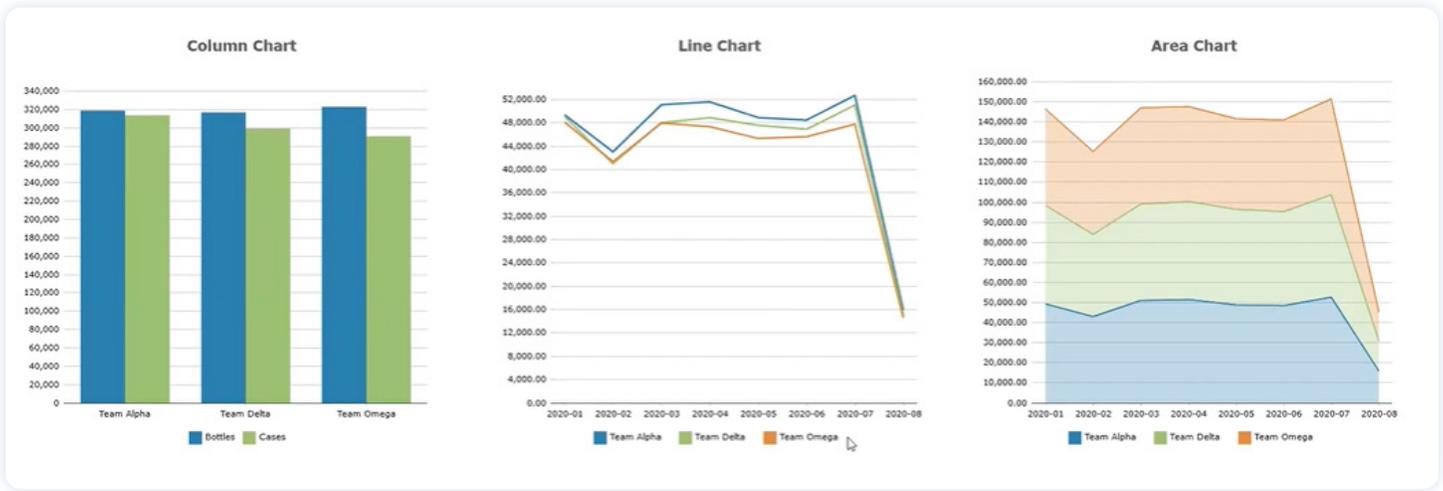


Column charts

Column charts, or bar graphs, are the simplest of the three. They are ideal for situations where discrete data is used, which is to say data that is not closely connected in a series. An example of this would be tracking the total number of staff members working in different departments of a hospital. Even though they are part of the same hospital, these quantities are not directly related and don't affect each other. This makes them perfect for representation with a column chart.

Clustered column charts are a commonly used type of column chart in which multiple columns are clustered together to show related

quantities. For the example above, a clustered column chart could be used to show not only the total number of staff members working in each department of a hospital, but also how many staff members of each role there are. This would be done by adding multiple side-by-side columns for each department to show the total number of doctors, nurses, administrators, and other workers within them.



Line charts

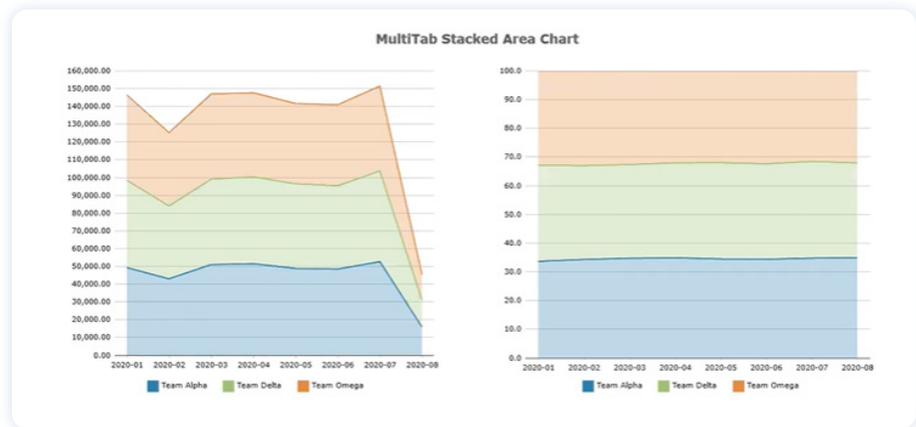
Line charts are perfect for situations involving a series of related data. This is especially true for charts that show changes over time or other connected, sequential sets of data. The classic example of a line chart is one showing changes in profits or revenue over the course of a year. Another example could be a chart showing rates of COVID-19 across different ages or age groups. Although this example isn't showing a span of time, a line chart is still appropriate since the age groups follow a sequence, and one age group would be affected by similar conditions as the subsequent and preceding age groups.

Area chart

An area chart looks similar to a line chart, and is used for similar sets of data. The key difference between the two is that in area charts, part of the chart (usually the area underneath the line) is highlighted. This is a simple visual change that is used to highlight a certain portion or range of the data. For example, a chart showing the total number of cases of a product sold throughout the year might have the area below the line shaded in to show the relevant part of the data.

Multitab stacked area chart

Multitab stacked area charts are a variety of area charts that feature multiple shaded areas stacked on top of each other in the same chart. These are mostly used to show individual contributors that add up to a whole. An example of this would be a chart showing the amount of money earned by three teams over a given span of time. Stacking these three area charts on top of each other makes it easy to see how much was earned by each team, as well as the total amount earned by the three teams combined.



A multitab stacked area chart can also be used to show values as a percentage, rather than as total amounts by volume. The chart on the right shows an example of this, where the contributions of each team are shown as parts of a whole. The top of these charts is always a straight line, since the percentages should always add up to 100.

what conclusions readers will draw from it. While there are countless different ways to optimize your presentation, few graphical representations are as straightforward or easily readable as column, line, and area charts. □

Conclusion

While data can be expressed in a lot of different ways, finding the best way to present that data will make it more useful and accessible to others. While the reliability of the data is always the most important part, the way that it is presented can make a significant difference in

What Is SiteStats?

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Technical Support
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SiteStats is an app that allows customers to track user DivePort access, along with DivePort performance for one or more DivePorts on the same server. Through the dashboards button you can access the summary page, and the usage alert and performance alert dashboards. Let's take a closer look at those functions.

Summary page

The summary dashboard displays user access as well as user details. It is divided up into logins, users, and pages. The Logins section will display the day names for the days that people logged into a site for the period selected.

Via a quick-view selection there are options to display the following periods:

- 12 months
- 30 days
- 24 hours

If you click a day it will show session information detail such as the session ID, user names, and the start and end times and dates for the user sessions in the selected period.

Once someone logs in, it automatically shows up on this dashboard. If there have been no logins for a particular day of the week in the period those day(s) will not be displayed until a login exists.

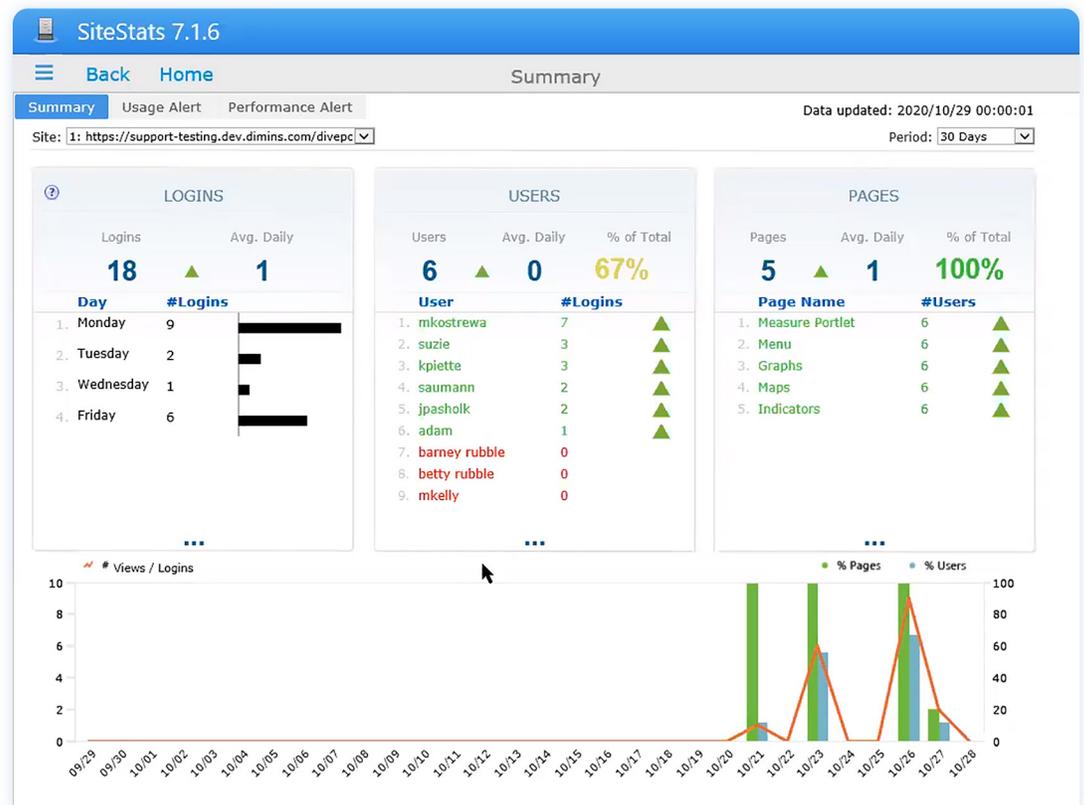
The Users' Section of Diveline shows the number of people online at any given time, either as a quantity or as a percentage of the total number of users. It also compares the selected span of time to the corresponding

span from the previous period, which it will display as an upwards-pointing triangle to indicate an increase, a downwards-pointing triangle to indicate a decrease, or a dot if there is no change between the selected times.

Clicking on an individual user's name will allow you to see the user's details, which displays the sessions that

user has done in the selected time period. If the user is in any groups, it will show those groups as well.

The Pages section is similar, showing the number of pages available and the average daily use of each of them. Both offer trend analysis showing the number of times a user logged in, and the number of views and logins per page.



Summary

Usage alert

The Usage alert dashboard goes into a little more detail, giving the number of views for pages, files, and portlets on the site.

If you click on the views, it will bring up the pages trend, showing the dates, times, and total number of logins to the page. When looking at the page details popup, by clicking the page name under the trend graph, you can actually go the page itself.

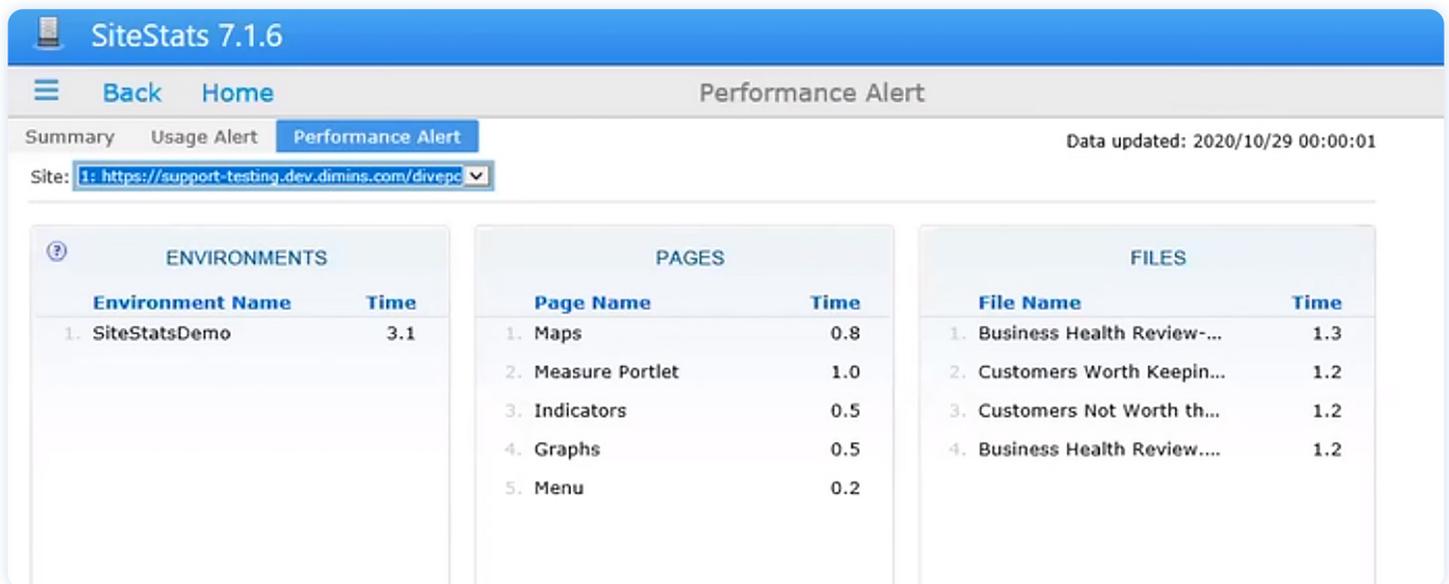
Performance alert

The performance alert dashboard shows the newest feature of SiteStats as of version 7.1.6 and 7.0.8 where the user can click on the page name and select the "files linked" click action to see all files linked to that specific page. That can show you if the page is loading multiple markers, which might explain a slower load time, or if it is just one file slowing the page down.

You can also see the files that were viewed, and how many times they were viewed, as well as the portlets on each page. A trend analysis for usage allows you to view the logins trend for the period selected. The file details popup will also display the full project path location of a file.

The Performance alert dashboard allows the user to see the average site load speeds and which pages are slowing it down.

It even shows you the average load time for all users on a site within a selected time period so that you can see the number of seconds it takes for files and pages to load. □



Performance Alert

Our articles on [Column, Line, and Area Charts](#) and [SiteStats](#) are part of our **Knowledge Forum series**. Learn more about this series and join us for our regular live webinars.

[Knowledge Forum](#)

Five Sustainability Trends in Wine for 2021



by **Meredith Galante**,
Contributing Writer

As [millennials](#) increase their buying power and market share of wine sales, brands are adapting to match their values. [Climate change](#) and the environment are among that generation's most significant concerns.

In fact, 73% of millennials say global warming is "personally important to them," according to a report from [Yale's Program on Climate Communication](#).

The wine industry wants to protect the planet too, and placate its consumers. Brands are responding by creating [paper wine bottles](#), committing to [less wine waste](#), and more.

Paper wine bottles hit the shelves

According to Beverage Daily, wine brands that switch to paper wine bottles will cut their carbon footprint by 84%, which is six times less than the emissions produced by glass bottles.

Frugalpac, a company that created Frugal Bottle—a bottle made of 94% recycled cardboard—created a product that utilizes a water footprint four times less than that of a traditional bottle. These bottles have already hit the shelves in the United Kingdom.

When consumers think of wine, the predominant packaging remains a glass bottle. But, in recent years, canned wine sales increased exponentially, showing customers are open to drinking their wine differently.



Image source: www.frugalpac.com

"The launch of the Frugal Bottle is a big leap in sustainability without compromising wine quality," Frugalpac owner Ceri Parke told Beverage Daily.

Expect brands to start utilizing more sustainable packaging in 2021.



Less wine waste, more wine-based products

Swisse, a health and wellness company, plans to utilize vineyards' wine waste and transform it into dietary supplements and skincare products, according to [Beverage Daily](#). Swisse will use grape skins and

seeds and convert those into upcycled grape seed extract, known for its collagen and antioxidant properties.

Swisse produces the grape seed extract from leftover wine production, reducing the amount of grape marc left to rot.

If this idea takes off, it could spur other trends to infuse more sustainable practices into the industry's processes.



Wines earn more sustainable and organic certifications

Moving forward, more brands will strive to earn certified sustainability for their wine products in 2021 and beyond. Earning these certifications can help set lesser-known brands apart and cater to customers who want a brand that matches their [values](#).

For a wine to earn a [USDA Organic certification](#), it must be made without the use of synthetic fertilizers, pesticides, and other chemicals. These practices are good for the human body and the environment.

Even without that certification, some wines strive to be sustainable. Sustainable winemaking means the winemaking process protects the environment and still produces high-quality wines. Vineyards commit to maintaining soil health, recycling, conserving water, and using renewable energy technology like solar or wind throughout the winemaking process.

Sustainable wine doesn't necessarily mean the ingredients are 100% organically grown, so there still may be some additives in it.

Dry farming grows

The dominant wine market in the United States remains Napa Valley and Sonoma Valley. But both regions have experienced unprecedented wildfires and droughts this past decade. The practice of "dry farming" is making a comeback, according to [SevenFiftyDaily](#).

Dry farming practices include preserving soil moisture and forgoing irrigation. The grapevines adapt to the dry weather and conditions, and some say it even makes for better tasting wine.

"The wines that really curl my toes always come from regions that don't allow irrigation," Brad McLeroy, the winemaker at [Ayres Vineyard](#) in Newberg, Oregon, told [SevenFiftyDaily](#).

If you're wondering where the proof is, just look to Santorini, a Greek island that receives a few inches of rain a year but boasts an elite wine industry.

More and more vineyards will need to adopt dry farming practices as water becomes an increasingly scarce resource in regions that experience droughts. Look for more United States-based vineyards to implement dry farming practices in 2021.



The tasting room is alive

Some vineyards have been implementing organic and sustainable practices for years, but now those commitments will transfer to their tasting rooms. As vineyards build new tasting rooms, or update their preexisting ones, look for more tasting rooms to be LEED-certified or even to take part in the [Living Building Challenge \(LBC\)](#).

Created by the International Living Future Institute, the LBC remains exclusive and hard to obtain for buildings. Buildings must meet seven performance areas and can't get certified until the buildings have been built and operating for a full year.

The challenge requires that the building produces 10% more energy than it consumes, so it's not only green, it produces green energy. The building's water needs must also 100% come from capture precipitation or natural closed-loop water systems. □

Why Diversity Matters in Decision-Making

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Diversity matters for businesses. Not just because it's the right thing to do, but also because it's the smart thing to do. Businesses with more diverse staffs excel at decision-making and outperform their peers financially.

To many, diversity seems good in theory but hard to implement. However, having a more diverse workforce is worth the effort. Here's how diversity can help organizations in promoting a [culture](#) that enables better business decisions. We'll also look at one ingredient that is critical to building diverse and high-performing teams.

The business case for diversity

According to [McKinsey & Company research](#), businesses in the top quartile for gender diversity are 15% more likely to outperform their peers, and businesses in the top quartile for ethnic diversity are 35% more likely to outperform their peers.

While McKinsey researchers caution that correlation does not equal causation, they believe more diverse companies are better able to:

- Win top talent
- Improve customer orientation
- Improve employee satisfaction
- Enhance decision making



Gender-diverse companies are 15% more likely to outperform peers financially



And better decision making is key to better financial returns. According to [research conducted by Bain and Co.](#), decision effectiveness and financial results are correlated at a 95% confidence level. Those companies most effective at making decisions have financial returns nearly 6% higher than those of other companies.

How diversity matters in making decisions

So what is it about diversity that enables businesses to make better decisions? A lot of research has been conducted in this area, and it appears that while homogeneity may lull people into thinking they are making better decisions (because everyone agrees with each other), viewpoints that challenge each other sharpen the performance of teams.

A Harvard Business Review article titled, "[Diverse Teams Feel Less Comfortable—and That's Why They Perform Better](#)," underscores this point. When discussing a study of decision-making in which participants had to solve a murder mystery, the authors write:

On a homogenous team, people readily understand each other and collaboration flows smoothly, giving the sensation of progress. Dealing with outsiders causes friction, which feels counterproductive.

But in this case their judgments were starkly wrong. Among groups where all three original members didn't already know the correct answer, adding an outsider versus an insider actually doubled their chance of arriving at the correct solution, from 29% to 60%. The work felt harder, but the outcomes were better.

Another HBR article, "[Why Diverse Teams Are Smarter](#)," gives some of the reasons why a diverse team produces better results. These reasons include:

- 1. They focus more on facts.** This is because they may more closely scrutinize each other's actions. They become less entrenched in "group think," which may blind them to key pieces of information.
- 2. They process facts more carefully.** This is because they are considering perspectives of people who think differently than they do.
- 3. They are more innovative.** This is because conformity discourages innovative thinking; diverse perspectives encourage new ways of looking at problems.

Moving from insight to action

While diversity has been shown to improve the quality of decision-making, diverse teams often struggle in their execution of those decisions. Moving from insight to action can be hard, simply because, as previously mentioned, less homogenous teams feel less comfortable. To actually execute on these decisions requires not just diversity, but also inclusion.

Inclusion: The secret ingredient to stimulate diverse teams

Inclusion is the catalyst that catapults good decisions into well-executed actions.

In fact, [one study](#) by Cloverpop found that the most inclusive teams in both decision-making and execution outperformed average teams by 60%.

How does inclusion differ from diversity? According to Juliet Bourke and Andrea Espedido, who wrote, "[Why Inclusive Leaders Are Good for Organizations, and How to Become One](#)," inclusive leadership is "leadership that assures that all team members feel they are treated respectfully and fairly, are valued and sense that they belong, and are confident and inspired."

According to the authors' research, inclusive leaders are:

- 17% more likely to report they are high performing
- 20% more likely to say they make high-quality decisions
- 29% more likely to report behaving collaboratively

They also found a 10% improvement in perceptions of inclusion at work increases employee attendance by almost one day each year.



What can your company do to make better decisions?

Making better decisions first requires a commitment to diversity. That requires building teams that are age, gender, ethnically, and geographically diverse. According to the Cloverpop study, teams that are diverse in all those areas make better business decisions 87% of the time.

Second, teams need inclusive leaders who, according to Bourke and Espedido, treat *everyone* fairly and respectfully, value their opinion, provide a sense of belonging, and make team members feel psychologically safe.

Third, team members need to listen and consider the opinions of others. When it comes to data and analytics, many people will say, "the numbers don't lie," and feel there is only one interpretation of the data. But are you looking at the numbers correctly? Have you considered the reasons for the numbers? Can you dig in further to find root causes? Strong [data trust and governance](#) can help immensely here, but it also helps to consider other points of view and come to a joint consensus on what the numbers are showing and how you should respond to what they are showing you.

 **Ethnically diverse companies are 35% more likely to outperform peers financially**

Conclusion

Diversity matters. So does inclusion. These are critical for building a culture where employees feel valued and welcome, and that makes them more productive. It also helps enable better decisions, which, in turn, helps the financial performance of organizations.

Is diversity hard? Yes. Most business leaders will seek out and surround themselves with people who feel and act the way they do. It can be difficult to transition to new ways of finding and recruiting talent, as well as building internal teams. But is diversity worth it? From both a human and a financial standpoint, the answer is most definitely. □



Customer News

New Customers and Application Deployments



Bergans of Norway, an outdoor equipment retailer, is implementing Diver's data management functionality for sales and profitability analysis. This project is in partnership with Pilaro.



General Wholesale is implementing Distributor Advisor, Survey Advisor, Inventory Advisor, and Program Advisor.



Loe Rørprodukter AS, Norway's largest producer of concrete products for the water and wastewater sector, is using Diver Platform to produce a real-time dashboard to track status for all driving routes.



Penn Medicine went live with ED Advisor and Surgery Advisor.

A Letter from Our CEO, Fred Powers



I hope this letter finds all of you healthy and safe during what has been an especially challenging year for all of us.

As we wrap up 2020, I have been reflecting on the past year. One thing I am especially proud of is that despite the increased distance between all of us, 2020, in many respects, has led to even greater collaboration and cooperation between us at Dimensional Insight and our customers.

Some of our highlights from this past year include:

- Our first ever Dimensional Insight Virtual Conference, which saw greater customer attendance than any of our previous in-person conferences.
- The launch of our Knowledge Forum, a series of weekly webinars in which we answer customer questions and demonstrate product features.
- An increase in the number of customer support engagements to help our customers meet their goals and initiatives through Diver Platform.

As we look forward to 2021, we are hopeful that the new year will bring improvements both as it relates to the pandemic and to our economy and well-being. However, we are also cognizant that things will never quite be the same. What this “new normal” looks like is unclear. But what will hold fast is our commitment to you and your continued success.

Happy holidays to you and your families.

Fred Powers

A handwritten signature in black ink that reads "Fred Powers". The signature is written in a cursive, flowing style.