

The Business Value of Diversity Combined with Data Science

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ABSTRACT

Having strong diversity programs, being sensitive to diversity issues, and being able to apply rigorous data science techniques can provide significant value to an organization.

Many business problems and challenges begin with the statement of a problem, and the problem sometimes seems to relate to issues with diversity. Many organizations are aware of both the importance of diversity and the fact that problems sometimes manifest themselves as diversity issues, even when they have other causes. At other times there are issues where awareness of the value of diversity can help an organization achieve its goals. In addition, there are areas where diversity can have a direct impact on the organization in terms of compliance and scientific value.

In this paper I cite examples where diversity has proven to have business value for an organization.

CHILDCARE

An organization noticed that females in this organization were, on average, being paid less than males. We ran an analysis using SAS to break down the salaries by age, education, and experience, and the gender discrepancies went away. Further analysis into the causes of the overall gender discrepancy showed that many more women than men were leaving the organization in their late twenties or early thirties, thus causing the average woman in the organization to have less experience than the average man in the organization. We then used SAS Text Mining software to analyze the exit interviews and discovered that, in many cases, the reason for leaving was related to childbirth and subsequent childcare.

Voluntary turnover can be bad for an organization if the organization is losing talented people, and the organization also incurs extra expenses due to additional recruiting, training, and on-boarding costs. It is thus valuable for the organization to make efforts to mitigate the issue.

The organization followed up on the analysis by setting up childcare centers at some of their locations and we performed a longitudinal analysis a few years later. There are many things happening in the economy not related to childcare that influence voluntary turnover: in a growing economy more jobs are available and people are more willing to take risks while in a declining economy people want to hang on to what they've got.

Therefore, we compared the before-and-after change in voluntary turnover in the locations where the childcare centers had been set up to the before-and-after change in voluntary turnover in other locations in the same geographic area, and we found a statistically significant decline in voluntary turnover in the locations that had childcare centers. Interestingly, many male employees also used the childcare centers.

In this case the focus on diversity detected a business problem that might not have been noticed and thus led to a follow-up analysis which led to a solution that created value for the business.

RACIAL DIVERSITY

In the early 2000's a pharmaceutical organization had the perception that they were losing African-American sales representatives and the organization was concerned that there might be a hostile work environment. Investigation showed that the organization was not losing a disproportionate number of African-American sales representatives; it was losing an increasing number of younger sales representatives of all races. Text mining of exit interviews using the SAS Text Mining software showed that the departing salespeople had been offered higher salaries to move to other pharmaceutical companies. As in the above case relating to childcare, the turnover was causing increased expenditures for recruitment, training, and on-boarding and, in addition, was causing gaps in the sales force.

The company participated in a salary survey with other pharmaceutical companies. A statistical examination of the survey showed that the salaries for salespeople had slipped behind those of the competitors. Thus, the problem was non-competitive pay and not a hostile work environment, but the focus on diversity helped make the company aware of the problem.

The context in this case was interesting. During the Clinton administration in the 1990's the administration proposed a health care program that would have led to large, centralized buying groups. As a result, pharmaceutical companies had cut their sales forces in anticipation of having to deal with a small number of central groups instead of a large number of individual doctors. When the proposed program was not enacted, the pharmaceutical companies needed to restaff their sales forces and thus were luring the younger sales reps (who cost less) from other pharmaceutical companies by offering higher salaries.

PHARMACEUTICAL RESEARCH

An interesting paper was presented at PharmaSUG 2024 by Donna Sattler, dsattler0716@gmail.com, ***Advancing Diversity in Clinical Research BMS Case Study on Self-Identified Sexual Orientation, Gender Identity (SOGI)***. This paper covered how including a diverse group of subjects leads to more accurate and complete research because it reduces the knowledge gaps. Having a diverse population in clinical trials leads to more complete results and can detect issues that might only affect a small part of the population. Further, if the different subgroups are not properly identified, the results can be misleading and can also miss valuable information that specifically relates to the different subgroups. As Sattler points out, "Diversity truly is just good science".

Patient retention and openness are important to pharmaceutical organizations and medical practices. When patients are comfortable being open about their individual proclivities and habits, a virtuous cycle occurs where research and treatments can be more precisely targeted and thus can be more effective. When the patients are appreciated for who they are and when their demographic traits and individual preferences and experiences are taken into account when designing treatment plans and research procedures, the patients will stay in the study longer and remain more involved, thus increasing the quality of the research and the revenues and profits of the organizations.

SEXUAL ORIENTATION

The consulting organization I was working for had an active and successful LGBT (Lesbian Gay Bisexual Transgender) group. The LGBT group at one of our clients was having trouble getting off the ground and asked if we could help.

Although it wasn't required in our contract, we wanted to help out. I was the GPTW (Great Place To Work) lead for the client team, and I was asked to help. I reached out to our LGBT groups in the areas that were close to the client's location and put the client's LGBT group in touch with ours. Our LGBT group advised the client's LGBT group about setting up their structure. We also introduced them to other organizations and advised them about how to be successful.

The client was very appreciative, and our effort helped cement the business relationship. In many cases, the diversity efforts within our organization were the same efforts that many of our clients wanted to learn from, so having strong diversity efforts helped our organization succeed with our clients as well as creating a strong and inclusive environment for our employees.

RETAIL CAMPAIGNS

I was working with a hair care company when the aging of the population began to receive notice. The feeling within the company was that sales of hair coloring that disguised gray hair would increase significantly.

However, many of the women in the company were aware that, due to the increasing number of older women in the outside society, attractive gray hair would become fashionable and items like silver streaks would become popular. At that point the strategy group and the IT groups responsible for demand forecasting were able to recalibrate and more successfully accommodate the emerging fashions.

This illustrates how having a diverse workforce that can bring a variety of lived experiences can enhance a company's decision-making ability.

REGULATORY MATTERS

Private organizations, local government organizations with more than 100 employees, and federal government contractors with more than 50 employees are required to submit EEO-1 reports which show gender and racial diversity in ten different labor categories. A copy of the EEO-1 report is below. If an organization's EEO-1 report reveals disparities or patterns of discrimination in their workforce, it could trigger an investigation which could result in the loss or suspension of a contract. Thus, it is valuable for an organization to have sophisticated monitoring systems in place to ensure compliance.

5. EEO-1 Form (To be submitted by the prime and any sub with 20% or more of the contract).

NAME OF FIRM: _____

5. Section D- EMPLOYMENT DATA																
Employment at this establishment: Report all permanent full and part-time employees including apprentices and on-the-job trainees unless specifically excluded as set forth in the instructions. Enter the appropriate figures on all lines and in all columns. Blank spaces will be considered as zeros.																
Number of Employees (Report employees in only one category)																
Job Categories		Race/Ethnicity														
		Not-Hispanic or Latino														
		Hispanic or Latino		Male						Female						
		Male	Female	White	Black or African American	Native Hawaiian or Other Pacific Islander	Asian	American Indian or Alaska Native	Two or more races	White	Black or African American	Native Hawaiian or Other Pacific Islander	Asian	American Indian or Alaska Native	Two or more races	
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Executive/Senior Level officials and Managers	1.1															
First/Mid-Level Officials and Managers	1.2															
Professionals	2															
Technicians	3															
Sales Workers	4															
Administrative Support Workers	5															
Craft Workers	6															
Operatives	7															
Laborers and Helpers	8															
Service Workers	9															
TOTAL	10															
PREVIOUS YEAR TOTAL	11															

1. Date(s) of payroll period used: _____ (Omit on the Consolidated Report.)

Section E-ESTABLISHMENT INFORMATION (Omit on the Consolidated Report) What is the major activity of this establishment? (Be specific, i.e., manufacturing steel casings, retail grocer, wholesale plumbing supplies, title insurance, etc. Include the specific type of product or type of service provided, as well as the principal business or industrial activity.)

Section F-REMARKS Use this item to give any identification data appearing on the last EEO-1 report which differs from that given above, explain major changes in composition of reporting units and other pertinent information

Section G- CERTIFICATION

Check One	1	<input type="checkbox"/>	All reports are accurate and were prepared in accordance with the instructions. (Check on Consolidated Report only.)
	2	<input type="checkbox"/>	This report is accurate and was prepared in accordance with the instructions.

Name of Certifying Official	Title	Signature	Signature	Date
Name of person to contact regarding this report	Title	Address (Number and Street)		

EMPLOYEE MORALE AND PRODUCTIVITY

Having a diverse workforce that can bring a variety of lived experiences can enhance a company's decision-making ability. When an organization embraces diversity, and creates a culture where employees are comfortable "bringing their whole selves to work", employee morale and motivation improve and this leads to a more productive organization. Employees are more motivated to work hard and achieve positive results for their organization. This also leads to the organization having access to multiple perspectives, which also increases the organization's accomplishments.

In addition, there are rankings that are published by other organizations. For example, Forbes publishes lists such as "America's Best Employers" and "Best Employers for Diversity," which are based on employee surveys and other factors like company perks and benefits. Having high rankings can improve retention and give the organization a better opportunity to hire the best employees.

A solid diversity tracking system using SAS, combined with a comprehensive HR database, can help an organization monitor its diversity on several different axes, produce the statistics to submit to the companies doing the rankings, and produce any other statistics that the organization would like to track. Likewise, a sophisticated diversity tracking system can pinpoint areas where improvements or corrective actions might be necessary. Similarly, internal employee attitude surveys can combine the trends in the organization's work force with the employee experiences to allow the organization to use advanced data science techniques and detect upcoming issues and find areas where positive results are taking place.

CONCLUSION

Diversity is a business asset and awareness of diversity can lead to improved business outcomes. Problems that might not otherwise have been apparent can be detected by using **advanced data science techniques** to pay attention to diversity and a diverse organization can use a wide variety of perspectives when making decisions. Also, consulting firms with strong diversity programs can share their experiences and provide additional value to their clients.

CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

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Stephen B. Sloan has worked in a variety of functional areas including Project Management, Data Management, and Statistical Analysis for Human Resources, Supply Chain, Finance, Marketing, Insurance, Life Sciences, and Manufacturing on behalf of both private and government clients. Stephen has had the good fortune to have worked with many talented people at SAS Institute. Stephen has presented over 100 times at 51 SAS conferences and been published in professional journals. Stephen has a B.A. cum laude with Honor in Mathematics from Brandeis University, M.S. degrees in Mathematics and Computer Science from Northern Illinois University, an MBA from Stern Business School at New York University (1st in his class), and a graduate certificate in Financial Analytics from Stevens Institute.

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