How to Optimize Employee Performance Using Data Science

InsightDataSolutions

We've all been part of a company that offered us an incentive to succeed. There are many examples of incentives to optimize employee performance. If you meet your sales goal for this quarter, you will receive a bonus. If you produce enough products without an error, at the end of the year you will earn an extra two paid days off. Perhaps you've worked in organizations that use an incentive structure that rewards you after you succeed in your job performance. Many organizations have this type of incentive structure for their employees, and it is almost always a one-size fits-all structure. However, in our research, we found that only 37% of individuals met the incentive criterion when it was not optimized. Our research also shows that not only does one size not fit all, but that there are at least four types of incentive structures to optimize performance that are shown to work based on the timing of the incentive and whether the incentive is based on the goal of maximizing good performance or minimizing bad performance. If you could change that 37% success rate to a 63% success rate, what type of impact would that have on your bottom line, productivity and morale?

> Only 37% of individuals ever meet the criterion to receive a reward.
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> Maddox

Emotional States and Human Behavior

We set out to predict how motivational states influence human performance. Motivational states, or influences on behavior, can be defined as incentives for good performance or punishment for bad performance. In other words, what can we do to incentivize employees to perform well at work, and disincentivize bad performance? Examples of good performance can be meeting or exceeding sales goals or producing products with low error rates. Conversely, bad performance can be not meeting sales goals or high error rates in production. We also showed that the timing of the incentive, receiving the reward when the task is accomplished, or giving the reward up front for the individual to lose, affects how well people respond to incentive programs. Our research shows that the timing of the incentives (working to receive a reward when the task is accomplished or receiving the reward up front but working not to lose the reward) in conjunction with how they are presented (rewarding maximizing good performance or rewarding minimizing bad performance) greatly impacts performance.

Other factors that were tested included the personality of the individual using measurable personality traits as well as characteristics of the task that the individual performed. An incentive for the employee who is highly creative and routine thinks outside the box will not be the same for the employee who does repetitive work on a regular basis. When all of these factors were tested the results were startling. Not only does one size not fit all, but that there are at least four different incentive structures that can be used to maximize performance. When the proper incentive structures were implemented, 63% met or exceeded the criteria needed to earn the reward. That is nearly doubling the amount of people who are meeting or exceeding their job performance goals.

Designing Plans to Optimize Performance

Why is this important in designing a plan to optimize employee performance? If you could use the data you already have to analyze the personality traits of your employees, the types of jobs you offer and your incentive program and rework them to allow your employees to succeed, wouldn't that also increase your sales, your employees' productivity and happiness? Wouldn't your company make more money without spending more money? The return on investment for something like this is huge. This research can be used in every type of scenario where people are asked to produce more to earn more. Isn't this every for profit company too?

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By gathering your data and using one of our statistical models to analyze it, you may be able to increase your sales and productivity immediately. Wouldn't it be best to reallocate employees into roles best suited for their personality, or present to them an incentive structure in a way they respond positively to it? If by doing these simple things, using real data with proven statistical models to maximize your resources, without expending large sums to train new people or research yet another one size fits all incentive program, isn't this an immediate win? We're not saying give more money or hire more people, we are suggesting that tweaking the presentation and optimizing roles will increase your ROI as well as increase productivity and morale with little output using measurable analysis.

IDS can use data you may already have, or help you collect data you need. We can then conduct analysis that helps you identify the right incentive structure for your type of job and employee seeing benefits both tangible and intangible in a relatively short period of time, with little output but reaping a potentially large return.

To complete the research, we used an experimental approach, which allowed us to show causal effect and is widely considered the more rigorous form of conducting research. The data analytic approach was inferenced based statistics using specifically analysis of variance. The final results showed an increase from 37% success rate in achieving goals to a 63% rate and an increase in the accuracy of the job performed from 86% to 91%. It also identified at least four different incentive structures that can be used to achieve maximum results to optimize employee performance with different personality types. The results were published in a peer reviewed scientific journal and can be read in full. See the references below.

Sources:

Maddox, W.T. & Markman, A.B. (2010). The motivation-cognition interface in learning and decision-making. Current Directions in Psychological Science. 19, 106-110.

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About Insight Data Solutions

Insight Data Solutions makes the data hidden in your business accessible and relevant to the stakeholders who need it most.
www.insightfordata.com