Investigation of the effectiveness of using data to optimise an individual's daily routine

Motivation

As someone who spent time working in the warehouse operations as a manager, I noticed some of the characteristics that made Amazon succesful as a business for the short time I spent working there. One thing that stuck out to me was the reliance of data, when we think of data we think of complex machine learning algorithms or ‘big’ data but Amazon was using data in a much more personal level (especially in warehouses), they were using a worker’s statistics as a means to improve their performance, comparing the workers to their own individual work rate from prior weeks and also the average work rate of workers in similar work roles. This provided the managers such as myself a gateway to critique or motivate workers to improve their work rates. This was something Amazon has adopted from early stages and it seems like their work rate has increased year after year with previous records being surpassed. If the biggest company in the world has adopted to using data on a micro level to push workers further, then surely this was something I can implement myself for the same ultimate goal - to optimise my hours spent productively.

This data-driven approach of measuring myself was going to enable me to be able to notice my computing habits but also, more importantly, provides some sort of metric to measure the effectiveness of certain techniques I adopt through my improvement plans. And also provide me with some insight into personalised techniques to help myself, for example if I notice that I spend most of my time on a social media platform I won’t adopt a technique such as waking up at 4am to improve my productivity, instead I will adopt a social media prevention technique.

Plan

This report will concentrate on the effectiveness measured metrically, but also I hope to provide some anecdotal insight into the techniques and results I receive throughout this period.
The main goal is to see how the routine and measurement of data will be impacting my productivity.

How will the data be recorded?
I spend a significant amount of time on my computer, this will exclusively contain most of my productive work and time 'wasted' procrastinating.
For this project, my time spent productively will be measured by the amount of time I spend on websites dedicated to learning data science and Machine learning (a skill I am looking to learn and develop) and any other skill I see necessary to work on. My time spent being 'unproductive' will be the time I spend not on such websites. The time I spend on these websites will be measured by a chrome extension called 'TimeYourWeb'.

Bias

As most experiments have biases this particular experiment will also exhibit some biases. However I will undertake the following precautions to try to limit these bias on my results.

- I will ensure that I have my data hidden from me in plain sight so that I do not subconsciously alter my habits for the baseline.
- I will make measurements on days in which my routine is not interrupted by one-off events such as a Birthday

Method and Results

I spent a week recording my baseline productivity habits before analysing them. My analysis mainly involved showing an hour by hour productivity in a graph format as shown below. Figures 1 and 2 are my baseline working behaviours. Figures 3 and 4 are my working behaviours once I implemented a targeted plan.
Across all the graphs I exhibited three distinct behaviours that I could see was most affecting my work habits.
Figures 1 and 2 provided me the most insight in my productivity habits amongst all else graphs.

Problem #1

I believe that the first hour of work can set a tone for the rest of your day of which the first hour can easily be one of my most productive, as I am starting your myand have the benefit of having a rest prior. The main issue I had was that my starting productivity level was quite bad, I'd often spend time on trivial tasks or procrastinating before I started my work. Most days in my baseline I was below or close to my total productivity average for the day. My strategy to combat this was to create a reward loop for me starting my work, I would do this simply by promising myself I would be allowed to get a coffee or some other beverage once I completed my first hour of work. I found this technique extremely effective in conquering that problem as seen on figure 3 and 4 once I implemented this method.

Problem #2

Another issue I noticed is that I had an extreme zig zag productivity shape meaning that for one hour I was very productive I would follow up with the next hour being unproductive, as can be seen in the first graph; although this day was the most productive day of the week you can see that my second hour had a productivity of over 80 percent with the next being close to 0, at the time I remember feeling exhausted after this second hour and unable to focus at all. I saw this as a problem of me not pacing myself adequately and not having breaks that rejuvenated some of my focus. I addressed it by working in shorter spurts of 25-35 minutes followed with short but effective breaks such as walking outside, stretching or light exercise. I immediately saw great benefits of using this insight in that I was able to maintain my focus for longer periods of time as show in both graphs below (the zig zag shape not as apparent).

Problem #3

My last insight is most accurately depicted by comparing figure 1 and figure 2, in figure 1 I had a goal in mind and I had to leave by a certain time; ensuring I wouldn't be able to stay for a long amount of a time whereas in figure 2 I didn't have a goal in mind and I didn't have any plans after my studies. This provided me the insight that I benefit from timing and restricting how much time i spend on studying as it mentally pushes me to finish by a certain time hence increasing my work flow throughout the day, I decided to implement this and spend no more than 4 hours on a single study session and in those 4 hours I would accomplish a set amount of tasks preempting my problem of finishing with bad productivity. Result is as shown in the graphs below depicting how I managed to drastically improve my productivity throughout the day and especially the final hour.

Findings

Collecting data and using it as an insight was extremely effective in being able to identify issues that I wasn't aware of or underestimated the impact of and allowed me to create personalised plans to combat these specific issues. Once implementing the plan knowing what were my behaviours provided me with an additional motivation to tackle them as well as the techniques I would use to tackle them. My average productivity went from 34 percent at baseline to around 62 percent once initiating my plan. I also noticed that I was producing better quality of work and generally felt better that I was accomplishing more in a shorter duration of time, giving me time to spend on more leisure activities.

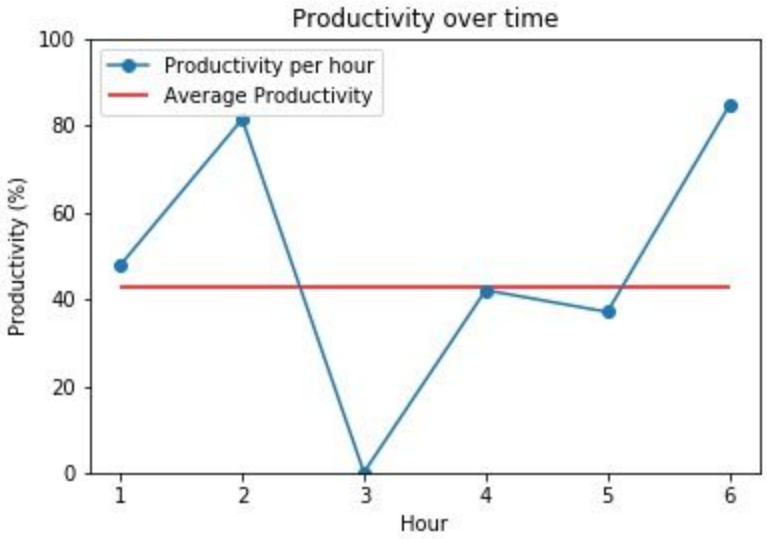

Figure 1 - most productive day in baseline

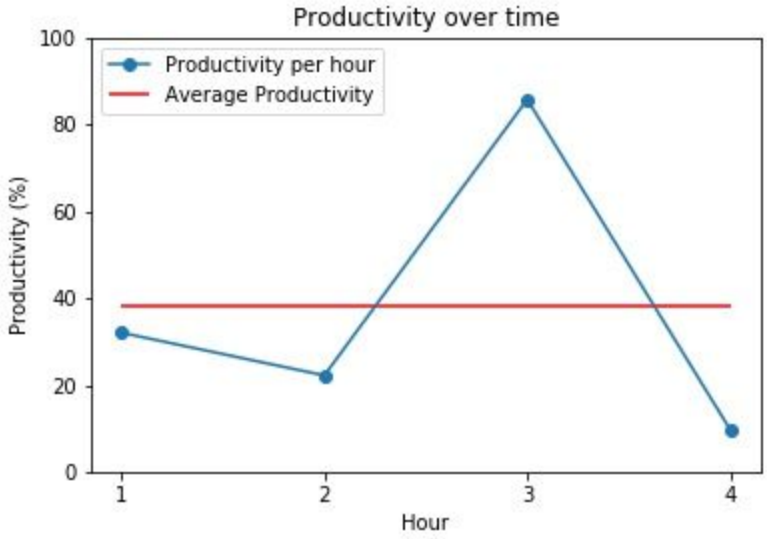

Figure 2 - average day of baseline behaviour

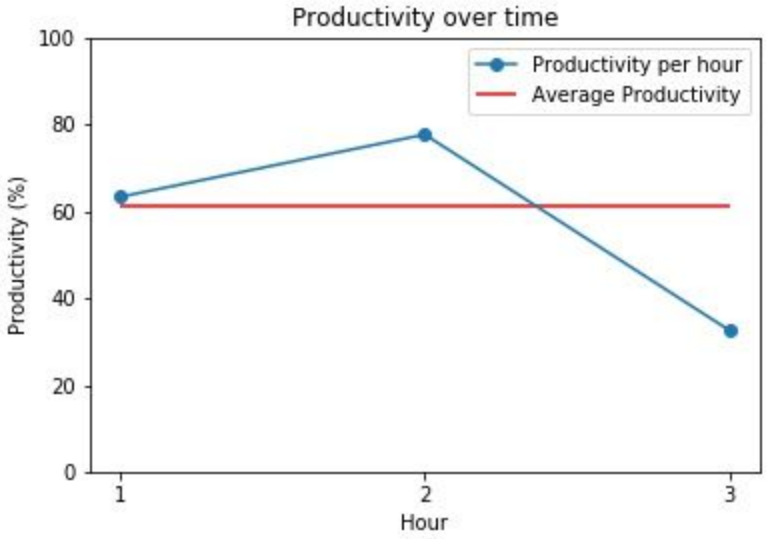

Figure 3 - after making adjustments from targeted plan

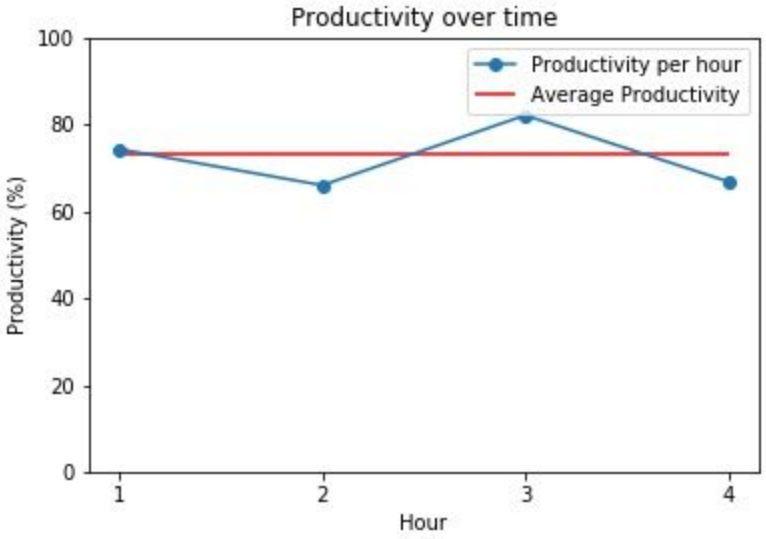

Figure 4 - after making adjustments from targeted plan