Insights for the Merchandising Team

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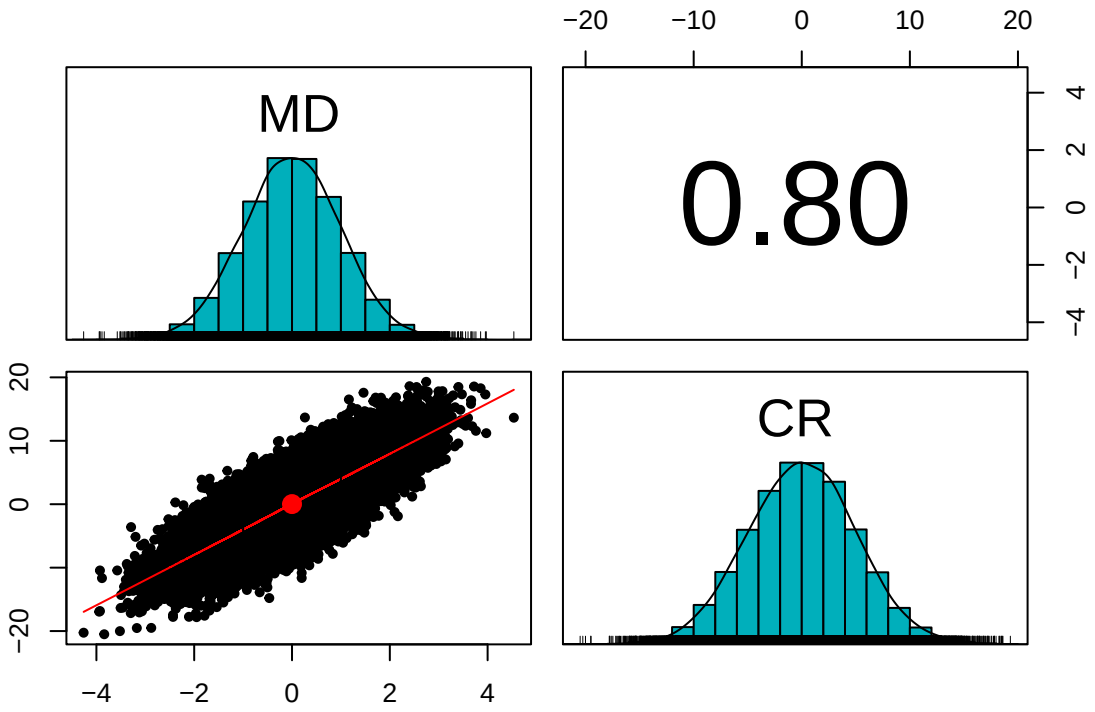
The effect of the markdown/sales promotions (MD) on the propensity to buy an item (CR)

It is reasonable to think that a product will be purchased more if a greater discount is applied to it. Therefore, the formulated hypothesis is that there is a positive relationship between the two measures, i.e. as the discount percentage increases, the propensity to buy will also increase.

Below, measurements and graphs will be shown to verify this hypothesis through the data.



Correlation Index

Correlation indicates the tendency for two variables to vary together. A positive correlation indicates that as one increases, the other also increases. The closer the correlation index gets to 1, the stronger the relationship is and can be approximated by a straight line, the closer it gets to 0, the weaker the relationship. In this

case the correlation is 0.8, indicating a strong positive correlation between the two variables. That is, as one increases, the other increases too.

Joint Distribution

In the lower left panel we see how the two measures are jointly distributed, thus seeing the data of both measures in a graph. On the x-axis is shown the Markdown value, on the y-axis the value of the propensity to buy.

This graph further confirms the almost linear trend between the two variables. As you can see, as the Markdown increases, so does the propensity to buy.

Linear Model

Over the points in the joint distribution, we can also see how a linear model fits to data, the line fits almost perfectly to the data distribution, further verification of a linear relationship between the two measures.

We then fit a linear model to see more accurately the relationship between the two measures.

```
##             Estimate Std. Error   t value  Pr(>|t|)
## (Intercept) 0.020621 0.01432481   1.43953 0.1500074
## data$MD     3.984391 0.01429468 278.73231 0.0000000
```

These results show us that Markdown as a significant effect on Propensity to buy ($Pr(>|t|)<0.05$), furthermore we know that as the Markdown increases by one unit we have an increase of almost 4 on the propensity to buy (Estimate = 3.98).

Conclusions

In conclusion we can say that all these results confirm the hypothesis formulated initially: by increasing the discount on the product there will be a greater propensity to buy