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Paper #1: Algorithmic Bias in Marketing

Data analytics and algorithms can be useful in many ways, from predicting weather patterns to tracking consumer behavior. However, algorithmic bias is problematic in marketing contexts if it unfairly favors one group over another (Israeli and Ascarza 1). Algorithmic bias can also reinforce harmful stereotypes about specific groups of people, affecting company reputation. This paper will discuss how pricing and products lead to algorithmic biases, while offering solutions to mitigate these issues.

Pricing is one of the 4 P's in which algorithmic bias can occur. As the case discussed, younger women are more likely to receive lower rates for insurance quotes than men. This is clearly biased because the insurance company is basing the rates on gender as well as behavioral stereotypes. Because some insurance companies think that women are more mild-mannered and less aggressive than men, that means that women are less likely to crash their cars - hence the lowered insurance rates. However, this is a vast overgeneralization – according to one research study comparing anger between women and men, "women appear to take advantage of their anger just as frequently as men [do]" (University of California, San Francisco). These stereotypes lead to biased algorithms, thus affecting customers' insurance.

In order to rectify this problem, insurance companies can restructure their employee teams to increase diversity. Perhaps the gender bias occurred because the team was predominantly male. Adding more female employees can balance out the team, and inserting constraints into the algorithm code can help maintain fairness when it generates results. Unfortunately, in a world without data, the bias will probably still occur because gender stereotypes existed long before technology was invented. That is why it is important to foster diversity within the company and restructure the algorithm to avoid bias.

Another one of the 4 P's is Product. As technology use rises, so do security measures such as facial recognition, which can be used in a variety of places, such as hospitals, airports, and offices. The case talks about facial recognition algorithms discriminating against specific groups of people - Asian and

African American people, women, and older people are more likely to be incorrectly chosen by the system (Israeli et al., 2020). As the case mentions, one reason for this bias is because the dataset was created with mainly white males. This is an issue because it reinforces racial and gender stereotypes; for instance, that minority groups are not trustworthy, or that older people are forgetful and unable to think for themselves. As a result, algorithmic bias can occur and return inaccurate information whenever facial recognition is used, impacting the accuracy of security and data identification systems.

Building off of this issue, say that the grocery store Sprouts is opening a new location in Santa Clara. The store manager uses facial recognition to keep track of customers after dealing with three stealing incidents within the first month of operation. However, the team uses historical training data that is biased towards upper middle class and affluent customers who are predominantly white. As a result, the algorithm is biased and falsely identifies people from minority groups as the culprit, when in reality the person in question is mixed-race. News of the incident spreads, and customers lose trust in the store, leading to a severe drop in sales and a decrease in brand reputation.

If this issue was raised on a managerial level, I would first privately apologize and compensate the customers who were wrongly accused; on a public level, I would put out a press statement to acknowledge the error and ask for customer feedback. As for improving the facial recognition algorithm, I would immediately re-train the algorithm with new data from the new location, diversifying the database. Secondly, I would code constraints or error messages into the algorithm so that when there is indecision or error, it 1) reruns the program and 2) calls for employee verification. If the system still results in error after the second round, employees can review the data themselves to further eliminate error. This reduces bias within the algorithm and makes it less likely for people to be misidentified.

To conclude, this paper discusses both Pricing and Products from the 4 P's and how each area can lead to algorithmic bias. This paper first identifies pricing and product problems that are biased, and then offers solutions on how to reduce those biases. Thus, it is important to mitigate algorithmic bias so that business decisions are made in a diverse and equitable manner.

References

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