Part III: Calculus II Final Project

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According to Young (2011), "we understand social justice as a theory and a practice which must begin with normative reflections on the context of historical oppression and marginalization. Within this context, redistribution of wealth and resources alone will not create equity in society. Social justice requires explicitly addressing institutional arrangements of decision-making, division of labor and culture that are hierarchically designed to exclude oppressed groups from expressing their interests and experience in the public on an equal basis with other groups". This is to say, advocating for social justice requires us to challenge the current narratives and institutionalized arrangements. By delving into social institutions such as power and class stratification, advocates of social justice are able to make changes in a more fundamental way. Mathematics and mathematical modeling can empower marginalized groups with a chance to better understand how society functions and find ways to speak up and to make practical changes. Furthermore, mathematics and mathematical modeling can help dominant groups see another side of society to which they have not been exposed.

Mathematical modeling and data analysis can have a real impact on people, communities, and everyday situations. For example, in a Statistics and Data Analysis course, using programming tools like RStudio to create visual charts such as box plots can help show patterns that numbers alone might not reveal. A good example would be exploring the connection between income levels and maternal mortality rates. The data can clearly show how women from lower income backgrounds face higher risks due to limited access to healthcare. Seeing that through data makes the issue more real and helps guide better decisions or policies.

That's why equity and fairness are important whenever math is used in social, business, or public policy decisions. Data represents real lives, not just statistics. When mathematical models are fair and accurate, everyone benefits, especially people who are often overlooked. But

when bias or inequality in data is ignored, it can lead to unfair outcomes and even make existing

problems worse. Math itself isn't really neutral, because the way we collect and use data reflects

human choices and values. So, it's important to make sure the way we use math helps create

fairness and positive change.

References

Young, I. M. (2011). *Responsibility for justice*. Oxford University Press.