

Sustainability in Marketplace Simulations

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Chancellor's Honors Program

SUSTAINABILITY IN MARKETPLACE SIMULATIONS	2
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Abstract

This research examines how a business's decision to make sustainable choices impacts their overall success. To conduct this research two versions of the Conscious Capitalism version of the Marketplace Business Simulations were played then analyzed to ultimately show how different choices led to different business results. Marketplace Business Simulations is a company founded by Dr. Ernie Cadotte that allows participants to practice making business decisions faced by companies in the real world. Businesses choose which sustainable decisions they can make while maintaining success through other aspects of their business. This business simulation demonstrates how sustainable choices impact the versions of the Marketplace games and how different sustainability-based decisions lead to different balanced scorecard results. The simulation includes six quarters of play. During each quarter, there are a variety of decisions made that impact different aspects of a business. Then, the quarter is processed and students are able to see the results of the previous quarter. Performance for each quarter is calculated using a variety of metrics. Marketplace Simulations allows students to make business decisions without facing real-world consequences. The Conscious Capitalism Version of the game includes a sustainability aspect. With sustainability becoming increasingly important in business decisions, it is essential to analyze how sustainability can impact a business's success. Through this research, the results of the business simulation show that making sustainable business decisions through the Conscious Capitalism Marketplace game has led to greater performance within the game. When looking at the sustainable decisions that businesses are currently making, Marketplace has the opportunity to include new avenues for sustainable choices in their game.

Introduction

The Haslam College of Business is dedicated to ensuring that their students leave their undergraduate years with significant knowledge and experience of business practices. One of the ways that Haslam enhances the knowledge of their business students is through a capstone course in strategic management that challenges all business majors to come together to draw on the business skills they have learned throughout their undergraduate years. In this course, students participated in a business simulation, known as Marketplace, that allowed them to gain experience making decisions that businesses face in the real-world.

Marketplace Business Simulations was founded by Dr. Ernie Cadotte. It is a simulation platform that provides the opportunity to make real-world business decisions without real-world consequences. The version of the Marketplace game played in the BUAD 453 class is the traditional version of the game. This project looks deeper into sustainability by playing the Conscious Capitalism version of the game. Information from the Conscious Capitalism Marketplace game is prevalent throughout the paper. The game ID for the Conscious Capitalism game is 00269-00076-95951. Each version of the game also has a specific license. The licenses are EX-HQB46A-5WS6 and EX-2EFVC6-JK9H. There is one license for each version of the game.

Through this project, I used my skills that I have learned through the Haslam business core classes and my upper division Supply Chain Management and Sales courses. Marketplace Simulations challenged me to think strategically about my business decisions, encouraging me to achieve the strongest business results possible. After I experienced the traditional Marketplace

Simulation in class, I was able to use these skills to complete two additional Marketplace games in the Conscious Capitalism simulation.

Understanding Marketplace

To understand the results of this research, it is essential to understand what Marketplace is and its purpose for business students. The Haslam College of Business has specific business core requirements that all Haslam students must complete. BUAD 453 - Global Strategic Management: Integrating Concepts and Applications is a four credit hour capstone course that is a part of the business core. "This capstone course integrates strategic management concepts and cases with application through a comprehensive simulation" ("BUAD 453 - Global Strategic Management: Integrating Concepts and Applications"). Through this course, integrated teams of students compete against each other in a project using a business simulation called "Marketplace." Business simulations are beneficial to students as they are a form of competitive training that allows participants to work against opponents and showcase their business skills. The simulation allows participants to learn about all aspects of a business. Through Marketplace, students experience different functional areas of a business and by learning how these different roles can work together, students gain a better understanding of how a business functions, adds value to customers, manages growth, and establishes a competitive advantage in a new industry. ("Business Game Scenario"). Marketplace is a test space of concepts that apply to businesses in real life, allowing students to receive hands-on learning experience that they can apply to their future in business.

During the Marketplace Simulation, students are divided up into teams and each team is in charge of a new company that will enter a niche bicycle business. The company has newly licensed technology to economically build carbon fiber bikes with 3D printing (“Business Game Scenario”). There are six quarters of the game where students face various business decisions. These business decisions will allow students to better understand how a real business works and practice making decisions that companies face everyday.

Project Explanation

During the BUAD 453 class, students complete the traditional version of Marketplace that does not include a sustainability component. While taking BUAD 453, I worked alongside four other Haslam students representing a variety of majors within the college. We ended up ranking first in our class and had the best balanced scorecard compared to other companies. Balanced scorecard information will be explained in depth later in the paper. This research project extends upon the coursework taught in BUAD 453 and focuses on two versions of the Conscious Capitalism version of Marketplace.

Marketplace Simulations works alongside Conscious Capitalism, Inc. to produce a Conscious Capitalism Marketplace Simulation (“Conscious Capitalism”). Conscious Capitalism has four tenets. It focuses on a higher purpose, stakeholder orientation, conscious leadership, and conscious culture. The higher purpose tenet focuses on knowing why your company exists. It is important for businesses to exist for reasons that do not solely include making a profit. Stakeholder orientation explains that businesses need to create value with and for its stakeholders, including customers, employees, and investors. Moreover, conscious leaders

embrace the higher purpose of business and create value for business stakeholders. These works work to cultivate a conscious culture within the business. The final tenet is conscious culture which connects the stakeholders of a business to one another and to the people, processes, and purpose that make up the company (“Our Philosophy”).

The Conscious Capitalism Simulation is similar to the regular version of Marketplace; however, it focuses on teaching societal impact principles. Students need to have a fiscally successful business, while also managing their companies’ impact on the environment, community health, employee morale, safety, and more. This version of Marketplace allows students to understand how business decisions affect society, how to manage the societal impact of a growing business, and how to lead while balancing competing needs throughout the firm (“Conscious Capitalism”).

In the Marketplace Simulation, performance is measured based on a balanced scorecard. The balance scorecard compares the industry results for each company in a game. It allows for different variables to be compared to ultimately determine which company has the best overall performance. A company receives a balanced scorecard after each quarter, except for quarter 1 because the company is still setting up their business at that point. The balanced scorecard assesses the total performance, financial performance, market performance, marketing effectiveness, investment in future, wealth, human resource management, asset management, manufacturing productivity, financial risk, and reputation for each business. There are different calculations for each of these measures that decide each company’s score. When playing the simulation in a classroom setting, the team with the best overall cumulative balanced scorecard

wins the game. Figure 1 shows the layout and components of a balanced scorecard. The cumulative balanced scorecard is different from the traditional balanced scorecard because the cumulative balanced scorecard multiplies results quarter over quarter overtime. Additionally, the difference between the balanced scorecard in the traditional Marketplace game and the Conscious Capitalism Marketplace game is that the Conscious Capitalism game has a reputation metric. The reputation metric looks at the reputation score from the stakeholder survey that occurs in the Conscious Capitalism version of the game.

Figure 1

Drill Down Balanced Scorecard

Sustainable Bikes

Advanced Balanced Scorecard

Advanced Balanced Scorecard	Sustainable Bikes	THE GOOD BIKE	Thunder Bike	BIK3D	Back to Bike
Total Performance	0.264	0.000	0.079	0.428	0.127
Financial Performance	3.140	-2.562	1.706	3.546	1.506
Market Performance	0.157	0.070	0.240	0.310	0.181
Marketing Effectiveness	0.693	0.650	0.728	0.668	0.693
Investment in Future	18.953	25.532	13.258	13.456	18.642
Wealth	0.748	0.761	0.829	0.850	0.769
Human Resource Management	0.655	0.689	0.656	0.693	0.697
Asset Management	0.184	0.086	0.145	0.167	0.154
Manufacturing Productivity	0.730	0.181	0.402	0.706	0.684
Financial Risk	1.000	1.000	1.000	1.000	1.000
Reputation	0.619	0.604	0.630	0.626	0.638

Research Gap

Through my time doing the regular Marketplace Simulation in BUAD 453, I was curious as to why the simulation did not discuss sustainability. When I initially met with Lindsay Mahony, my BUAD 453 professor, regarding my Chancellor's Honors Thesis Project, my plan was to focus on finding ways to adjust the normal Marketplace game to account for sustainability within a competitive environment. However, through our meeting I found out about the Conscious Capitalism Marketplace Simulation and decided that playing the Conscious

Capitalism version of the game would allow me to see how sustainability can impact a business. I also wanted to compare how the practices in the Conscious Capitalism Marketplace Simulation compare to the practices of real businesses that prioritize sustainability.

For my Chancellor's Honors Thesis Project, I decided to focus on how sustainability impacts the Marketplace. My advisors were Lindsay Mahony, my BUAD 453 professor, Assistant Department Head - Management & Entrepreneurship, and Senior Lecturer and Dr. Ernie Cadotte, Emeritus Professor of Innovative Learning at the University of Tennessee, and CEO and Founder of Marketplace Business Solutions. We ultimately decided to set up two versions of the Conscious Capitalism Marketplace Simulation, Version S and Version R. Version S of the game focused on making all of the sustainable choices possible and I chose to call this company "Sustainable Bikes." Version R avoided making decisions that would improve sustainability during the game, the company in Version R of the game is called "Bikes!" For example, when the simulation gave the option for businesses to purchase sustainable packaging, Sustainable Bikes purchased the sustainable packaging while Bikes! did not purchase the sustainable packaging.

These new Conscious Capitalism Marketplace games were played against a computer and the computerized competitors are always making the same decisions. This is in contrast to the version of the game that I played in BUAD 453 where the quarterly results of the game are dependent upon the decisions that each team makes, meaning that no two games are the same.

Playing two games alongside one another would demonstrate how sustainability truly impacts a company in the Conscious Capitalism Marketplace Simulation. Throughout the game,

all decisions were identical between Version S and Version R, except for decisions focused on sustainability. Each quarter, I compared the two versions of the game. To better understand how sustainable practices impact success within the simulation two questions must be posed:

1. How does the sustainability aspect of the Conscious Capitalism Marketplace Simulation impact a company's success in this simulation?
2. How can the sustainability aspect of the Conscious Capitalism Marketplace Simulation be improved?

Presenting the Findings and Analysis

Quarter 1

Quarter 1 focuses on setting up each company and defining the mission, vision, and strategic direction of the firm. During quarter 1, companies chose their first international sales location, created their first brand designs, and bought their first round of 3-D printers. Since this quarter primarily focused on setup, there are very limited decisions that highlight sustainability. In quarter 1, the only difference between Version S and Version R is that the games have different priorities when looking at corporate culture. In Version S, Sustainable Bikes prioritized being a good corporate citizen. However, in Version R, Bikes! did not prioritize this. Sustainable Bikes also embraced conscious capitalism, and their mission statement mentioned prioritizing sustainability.

Quarter 2

In quarter 2, the company entered the test market. During this quarter, the companies looked at compensation plans, production scheduling, advertising campaigns, pricing, sales and

service personnel, cash flow, and profitability. This was also the first opportunity for companies to compare themselves to their competitors.

In this quarter, there were no additional decisions made that impacted the sustainability aspect of the game. The best method to compare the two companies within the Conscious Capitalism Marketplace Simulation is to compare their balanced scorecards. Although both companies played separate games against different computer-generated companies, the balanced scorecard is a strong indicator of the company's success. In quarter 2, the balanced scorecards were identical, highlighting that no decisions were made that impacted sustainability thus far in the game.

Quarter 3

The goal of quarter 3 is evaluate test market results, and learn from this experience, so the business strategy and tactics can be adjusted to improve performance in future quarters. During this quarter, companies refined their decisions regarding the brand, advertisements, and pricing based on the performance report provided from quarter 2. Quarter 3 also focused on expanding their business program and determining the best way to capture significant demand and profits within the market.

In quarter 3, there were different decisions made in Version S and Version R of Marketplace that ultimately altered how the two companies performed on the balanced scorecard. In this quarter financial performance, market performance, marketing effectiveness, human resource management, manufacturing productivity, and financial risk were the same between both companies, however, total performance, investment in future, wealth, asset

management, and reputation differ. The main change that was made in quarter 3 which led to these results is that additional options in the game allowed for the opportunity to improve sustainability. For instance I chose to purchase the follow-up studies focused on system improvement with the intent of being more “conscious” as a business to improve overall performance. During quarter 3, Sustainable Bikes purchased the follow-up studies while Bikes! did not purchase the follow-up studies in quarter 3. The follow-up studies and system improvement examined potential areas of improvement within environmental concerns, quality control, employee involvement, production efficiency, and good neighbor.

Quarter 4

Strategy adjustments in quarter 3, encouraged optimistic forecasts in quarter 4, allowing for substantial growth opportunities. In quarter 4, each company receives \$2.5 million from an investor to be spent on research and development (R&D), new brand features, new sales channels, additional production capacity, and sustainability. Quarter 4, also gives the opportunity for businesses to take out loans; however, a loan was not taken out for Bikes! or Sustainable Bikes during the game. Also, paid internet marketing and social media is a new component in quarter 4. It is arguably the most effective and efficient choice for reaching a target audience.

During quarter 4, neither company experienced stockouts. However, there are more differences between Bikes! and Sustainable Bikes. In quarter 4, Sustainable Bikes purchased sustainable packaging as part of their research and development. Additionally, all of the environmental concern improvement actions were added for Sustainable Bikes. Bikes! also purchased all of the system improvement information to test the performance of

environment-related investments performance. Adding the other system improvement sections for Bikes! will allow for a better understanding of how sustainability is specifically impacting the business's success. In the balanced scorecard, total performance, market performance, investment in the future, and reputation are better on the Sustainable Bikes scorecard compared to the Bikes! scorecard. Financial performance and asset management are likely higher for Bikes! because they are spending less money than Sustainable Bikes since Sustainable Bikes is making extra purchases focused on sustainability.

Quarter 5

Quarter 5 is a challenging quarter because many companies now have new technology from R&D and have a global presence with sales locations in four regions. Quarter 5 is also an ideal time to refine strategy to improve sales, marketing demand, and operating profit. In quarter 5, stock outs occurred for both Sustainable Bikes and Bikes!; however, Sustainable Bikes had a greater number of stockouts. In quarter 5, Sustainable Bikes added the sustainable packaging that was purchased as R&D to all of their bikes. Bikes! uses the standard packaging. Sustainable Bikes also edited advertisements to include information about having sustainable packaging. I underestimated the positive impact that these decisions would make on demand and, subsequently, did not invest in enough printing capacity. Therefore, I ended quarter 5 with significant stockouts. When looking at the scorecard, Sustainable Bikes is performing significantly better than Bikes!, Sustainable Bikes also has stronger financial performance, marketing effectiveness, investment in future, asset management, manufacturing productivity, and a stronger reputation.

Quarter 6

Quarter 6 is the last quarter where businesses are able to make decisions. The goal of quarter 6 was to refine the strategy and tactics to maximize balanced scorecard performance. There were no new decision areas in quarter 6; however, there was potential for new brands if R&D was purchased in the previous quarter.

In quarter 6, the only additional change that was made regarding sustainability was that Sustainable Bikes mention that they were environmentally responsible and have at least three environmental initiatives in their marketing decisions. Although there were limited differences between Bikes! and Sustainable Bikes in this quarter, the sustainability changes that have been made throughout each quarter impact the cumulative balanced scorecard. Sustainable Bikes had a much higher performance compared to Bikes! Additionally, Sustainable Bikes had better financial performance, market performance, marketing effectiveness, investment in future, wealth, human resource management, asset management, and reputation. The only section where Bikes! had a better score than Sustainable Bikes was in the manufacturing productivity section. Bikes! had a stronger performance in this metric because Sustainable Bike experienced greater stockouts which negatively impacted this metric.

Overall Results

To best demonstrate the difference between Version R and Version S of the game, the graphs below focus on the total performance, financial performance, and reputation of Bikes! and Sustainable Bikes. The average results were also included from Bikes! game. The data was found from the industry results of each quarter. It was decided to create the graphs using the

individual industry results of each quarter, instead of the cumulative balanced scorecard results for each quarter because the individual industry results demonstrate how the decisions made in each quarter impact each metric. Specific graphs and formulas for each performance metric can be found in the appendix.

Figure 2

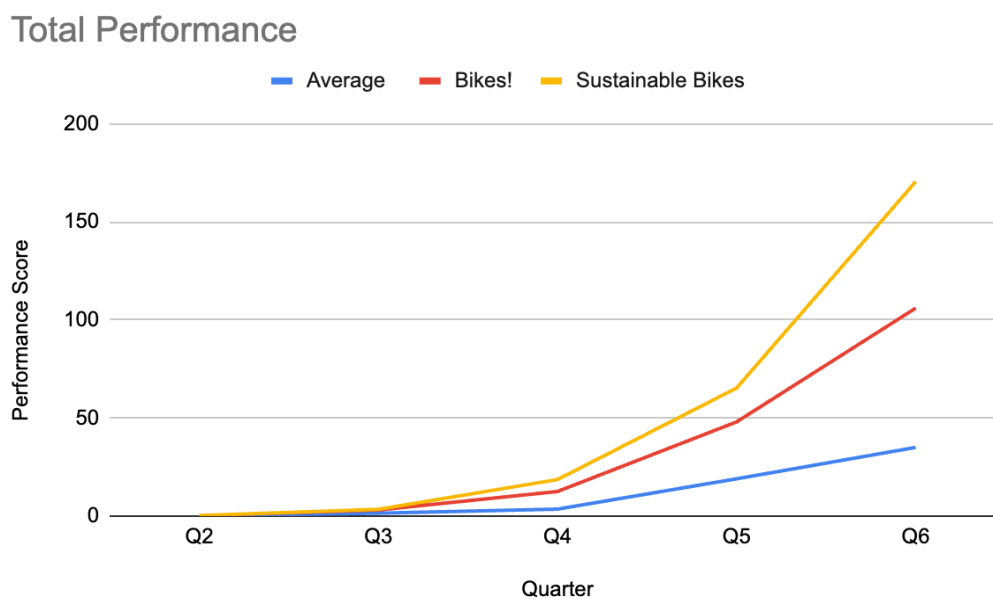
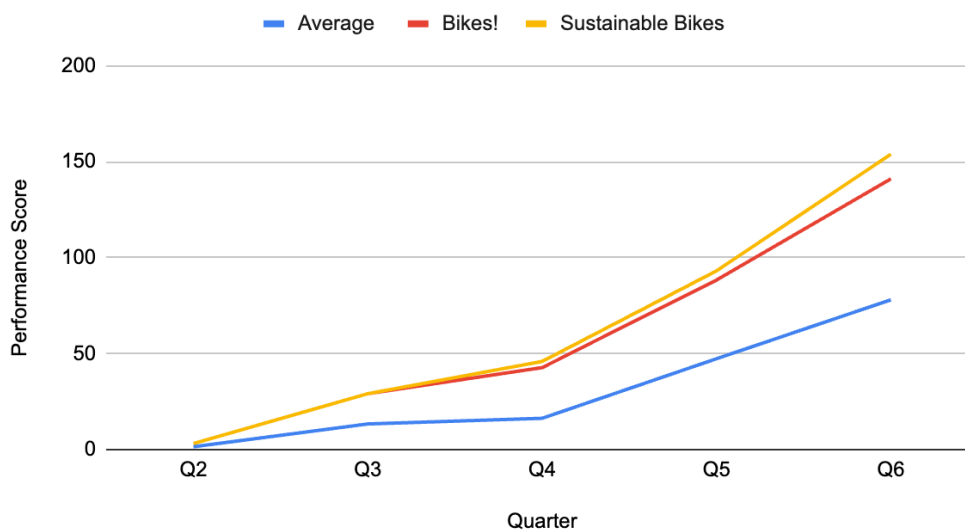


Figure 2 shows the total performance of Bikes!, Sustainable Bikes, and the average for each quarter. As shown in Figure 2, the total performance for Sustainable Bikes is significantly higher than Bikes! and the average performance. This demonstrates that making sustainable choices leads to a higher total performance as the only difference in decisions between these two games is that Version S makes decisions based on sustainability whereas Version R does not make decisions that support sustainability. The gap between the total performance for Version S and Version R is significant; however, it would have been even greater if the Sustainable Bikes

company in Version S did not receive “ill will” in the later quarters due to significant stockouts. In the game, ill-will occurs when there are stockouts because the demand for the product is too high and the company is not able to reach that demand.

Figure 3

Financial Performance



As shown in Figure 3, the financial performance for Sustainable Bikes is significantly higher than Bikes! and the average performance. This demonstrates that although more money was spent making sustainable choices for Sustainable Bikes it ultimately led to a higher financial performance. In quarter 4, the choices made with the Bikes! and Sustainable Bikes companies caused these two companies to split further from the average. Sustainable Bikes likely had a stronger financial performance when compared to Bikes! because Sustainable Bikes purchased additional components for their bikes to enhance their sustainability metric; however, this allowed them to also sell the bikes at a higher price, which led to a greater financial return.

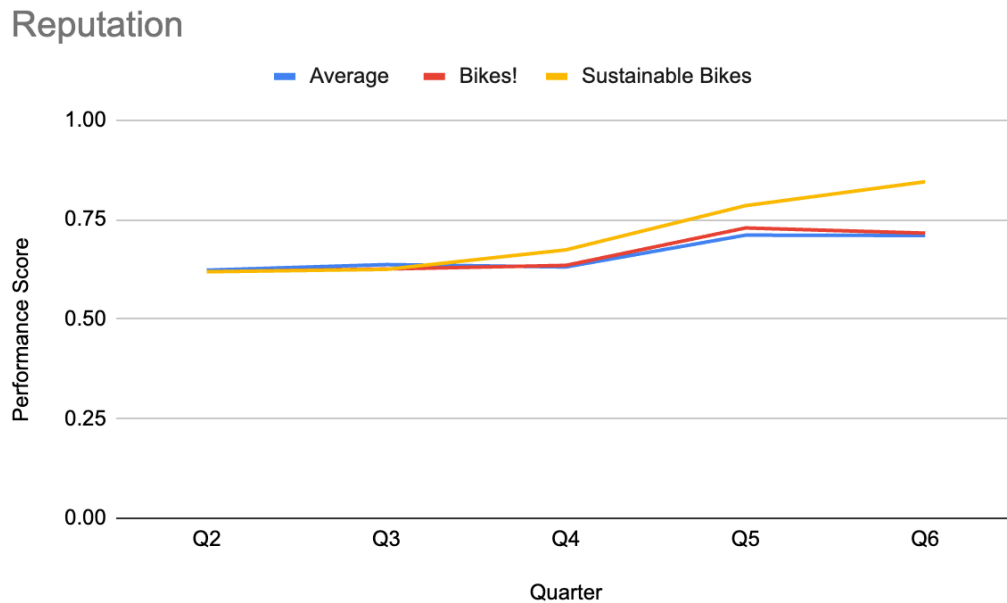
Figure 4

Figure 4 focuses on the reputation metric which addresses the company's score from the stakeholder survey. As shown in Figure 4, the reputation for Sustainable Bikes is significantly higher than Bikes! and the average metric. Therefore, focusing on enhancing sustainability within a business leads to a better reputation overall, this means that customers are more willing to purchase from brands with more sustainable practices. The Marketplace game gives the players numerous options to be a conscious company; however, it is incredibly difficult to make every conscious decision while still making a profit, this is something that businesses in the real-world face everyday. Since the two games were identical except for the sustainability decisions, there were no additional decisions made in the Bikes! game with the extra money that was not being spent.

Figure 5

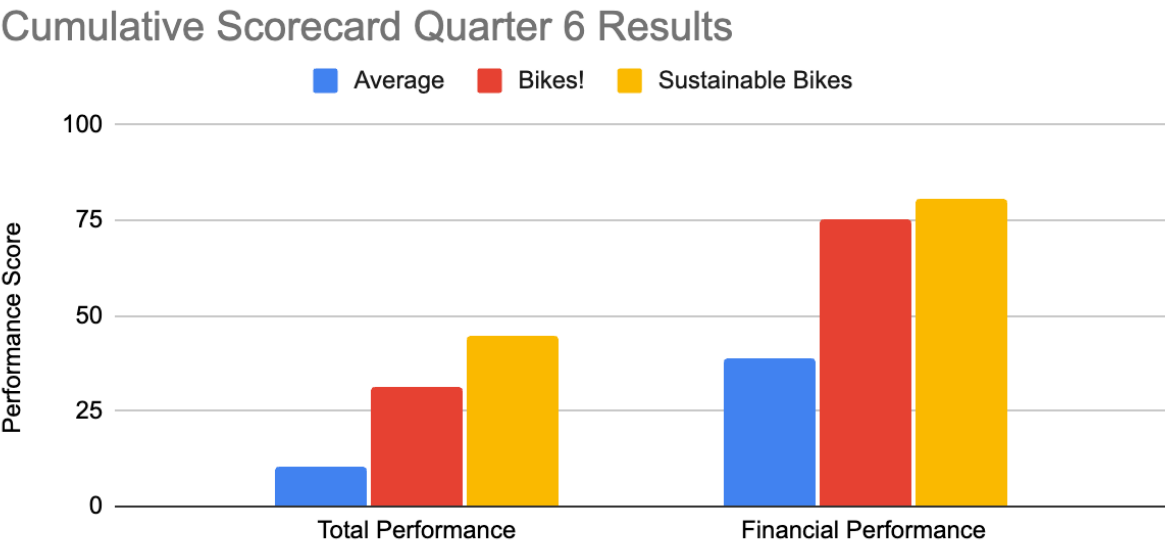
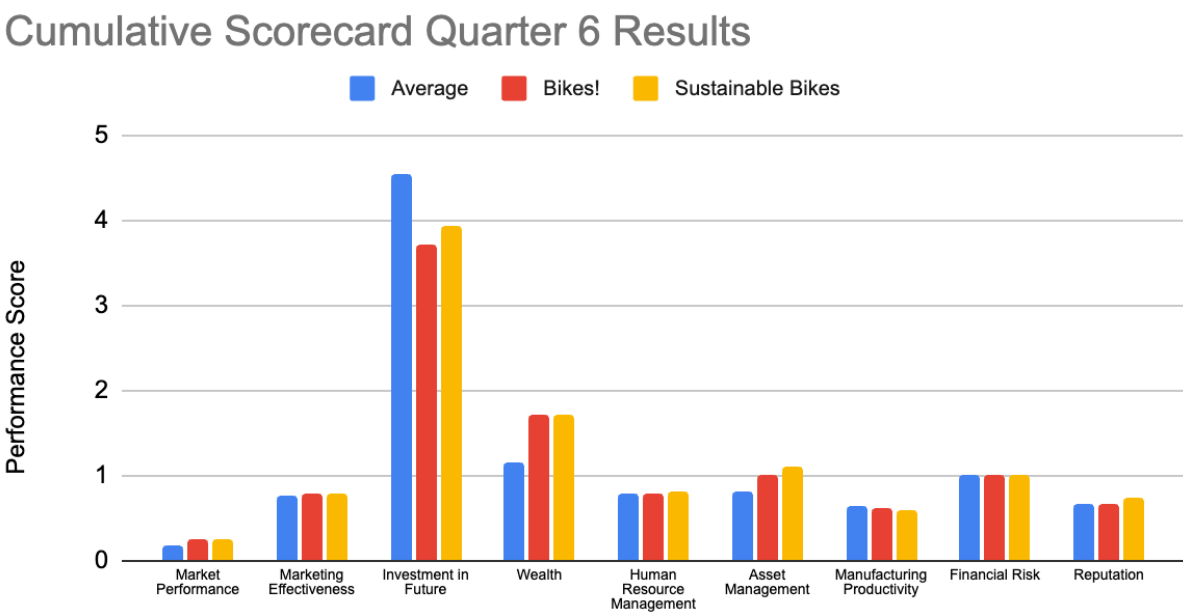


Figure 6



Figures 5 and 6 display the Cumulative Scorecard Quarter 6 Results. The results are split into two graphs due to the different metric scales. The cumulative balanced scorecard multiplies results quarter over quarter overtime. Therefore, showing the cumulative balanced scorecard information is beneficial because it shows the overall performance of the companies based on their decisions through all of the quarters. As shown in almost every metric, Sustainable Bikes has a higher performance score compared to Bikes! and the average. These visuals demonstrate how making sustainable choices can lead to greater success within a business.

The investment in future metric is the only metric where the company average is significantly greater than the results from the Bikes! and the Sustainable Bikes game. Cumulative investment in future is calculated based on the investment in the future metric in quarter 6. The full equation for this metric is included in the appendix; however, it divides cumulative expenses that benefit the firm's future by cumulative net revenues. Therefore, companies that have lower net revenues tend to have higher performance measures in this section.

Current Business Practices

Within recent years, sustainability has become increasingly important. Many companies make business choices that are focused on sustainability. For instance, Intel is using renewable energy throughout their company. Intel uses wind turbines and solar plants on-site to create more renewable energy. Intel “met 100 percent of its US electricity use in 2015 with its purchase of 3.4 billion kilowatt-hours of renewable power, generated from wind, solar, geothermal, low-impact hydro, and biomass sources” (“5 Major Businesses Powered by Renewable Energy”). The use of renewable energy is something that many businesses implement to promote sustainable practices.

Moreover, many companies are looking for opportunities to reduce their carbon footprint. These companies determine different ways that they can reach net-zero carbon emissions by a specific year. For instance, Deloitte is committed to achieving net-zero carbon emissions by 2030 as part of their global WorldClimate strategy. To do this, they have set carbon reduction targets. Deloitte discusses how they include their CFOs in their sustainability decisions to ensure that the right changes are made (“CO2 Footprint Optimization”). This relates back to the concept of Marketplace within the BUAD 453 class because students with all different majors will work alongside one another to solve different problems that they may not have anticipated the need to address previously.

Needs Assessment

The Conscious Capitalism version of Marketplace focuses on sustainability as an aspect of conscious capitalism. However, sustainability is not the entire focus of this game. As stated earlier, this game focuses on finding a higher purpose, stakeholder orientation, conscious leadership, and conscious culture. Although sustainability metrics are present in the Conscious Capitalism version of Marketplace, I believe there are additional components that could be added to the simulation to have a stronger focus on sustainability.

For instance, carbon footprint is a metric that many global companies are looking at when trying to become more sustainable. To my knowledge, the Conscious Capitalism version of Marketplace does not currently account for carbon footprint reduction when giving players options to improve their sustainability. Incorporating a metric that assesses carbon footprint into the Marketplace game would allow for a more accurate representation of sustainability within a

business setting. In the system improvement section, carbon footprint could be added as an environmental concern improvement action.

Furthermore, another idea to make the Conscious Capitalism version of Marketplace more focused on sustainability could be to allow for the printers to run on clean energy. Currently, the type of energy that the printers use is not specified; however, when designing a bike, there could be an option to pay a little more for that bike to be manufactured using clean energy instead of the regular energy, which is likely nonrenewable. This could allow for a better score in the reputation portion of the project because companies that use renewable energy are more likely to have a stronger reputation.

Another idea to further enhance sustainability within this version of Marketplace could be to have the printers make the bikes using recycled materials. There are a few different ways that this solution could be implemented into the game. First, companies could agree to pay additional money when purchasing a printer, and this additional cost could account for the recycled materials that are used for the bike. Another option could be to have an additional cost in the design brand section that would allow for the bike to be made by recycled materials. The final option could be to have use of recycled materials as an optional in the environmental concerns section of the additional improvement actions.

Moreover, to limit transportation costs and emissions related to transportation, Marketplace could offer an option where companies could choose to have local manufacturing. Local manufacturing would limit the distance that the products are traveling, which would be better for the environment because there is less pollution due to transportation.

Limitations

Through this project, multiple limitations arose. For instance, the Marketplace Simulation is typically played amongst a group of students that have backgrounds in different areas of business. However, since I played the two Conscious Capitalism games alone, I did not have experts in every area of business to help play the game. I believe that this caused me to struggle with certain decisions because there were some areas where I did not have specific knowledge about which decisions to make.

Another limitation is that there was only a set number of changes that could be made for sustainability. While completing the simulation, I had ideas for different ways that sustainability could be improved; however, these choices were not options within the games, and therefore, I was not able to make these choices.

Additionally, while playing Marketplace, there were instances when I was thinking sustainably about a decision; however, the game would not recognize that I was making that decision for a sustainable reason. For instance, in Version S, I was considering having no ads in paper magazines for Sustainable Bikes to reduce the use of paper products. However, through a conversation with Dr. Cadotte, I learned that although this would be a sustainable practice in the real-world, the game would not recognize this as a sustainable choice. Therefore, there was no reason for me to make this choice based on sustainability, as the game outcome would not be related to my reasoning for the choice.

Moreover, the amount of money I was able to spend each quarter affected how much R&D I could purchase each quarter. The goal of the Marketplace is to have the best cumulative

balanced scorecard, and while I could have continued to invest all of my money in R&D, if I inaccurately forecasted demand, I could have run out of money.

Implications

One implication of this research is that making sustainable choices within the Conscious Capitalism version of Marketplace ultimately leads to a stronger performance overall within the game. When starting this project, I was unsure how making sustainable decisions would impact the total performance of the business. However, data has shown that making sustainable decisions within the Conscious Capitalism version of Marketplace leads to greater total performance.

Another implication of this research is that there is always a way to enhance sustainability within an organization. The Conscious Capitalism game had metrics enhancing sustainability, such as sustainable packaging. However, through this project, additional ways for the simulation to improve their sustainability metrics were shown. This does not mean that the current Conscious Capitalism version of Marketplace does not promote sustainability, it means that sustainability can continue to be improved over time.

Moreover, Marketplace Business Simulations allow students to face real-world business situations in a safe environment. Therefore, they have the opportunity to make errors and see how different business decisions are anticipated to play out. The Conscious Capitalism version of the game allows students to have the opportunity to explore how they may solve business decisions in the real world.

Furthermore, sustainable choices can impact the success of a business; however, making sustainable decisions costs money. Sometimes companies have to make sustainable choices in order to do well as a company. There are tradeoffs that businesses need to make all the time in order to be successful. If a company is choosing not to support the environment, there is likely a justifiable reason behind that choice.

Conclusion

Overall, making sustainable choices does impact the success of a business. As shown through Version 1 and Version 2 of the Conscious Capitalism Marketplace Simulation, it is clear that making sustainable choices lead to benefits for a business. The Conscious Capitalism Marketplace Simulation demonstrates how incorporating sustainability into a business can lead to further success, specifically in the areas of total performance, financial performance, and reputation.

Additionally, there's always room for additional opportunities to improve sustainability in a business. When looking at current business practices for sustainability, there are ways that these practices can be implemented into Marketplace Simulations to have even more options for sustainability measures. In the future, it will be interesting to see how the Conscious Capitalism Marketplace Simulation adjusts as sustainability continues to become increasingly important in the business world. Someday, Haslam students may even play the conscious capitalism version of the game in BUAD 453.

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Appendix

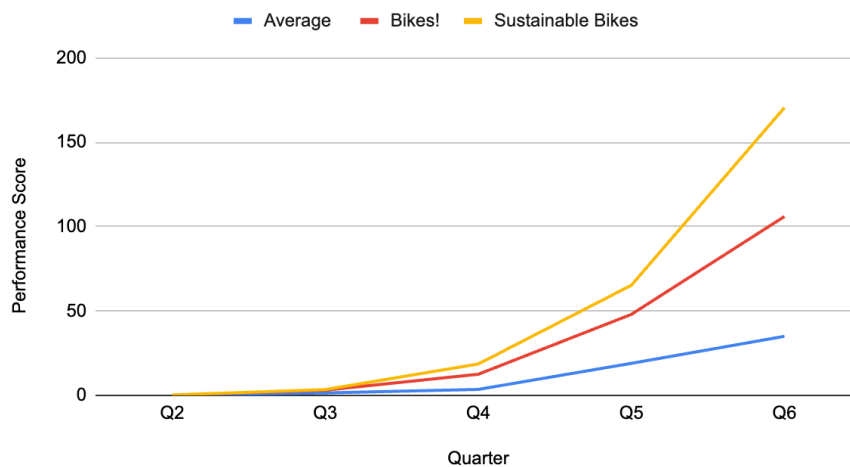
Total Performance

Total Performance = Financial Performance * Market Performance * Marketing Effectiveness *

Investment in Future * Wealth * Human Resource Management * Asset Management *

Manufacturing Productivity * Financial Risk * Reputation

Total Performance

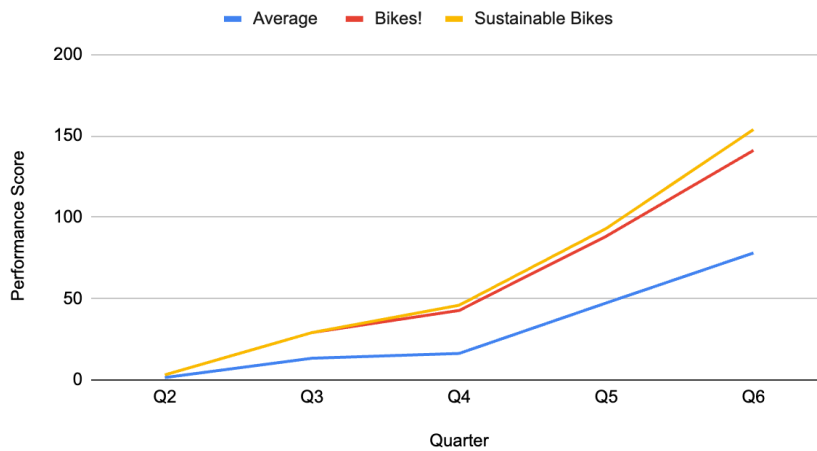


Financial Performance

Financial Performance = (Net Profit from Current Operations + Gross Profit) / 2 / Total Shares

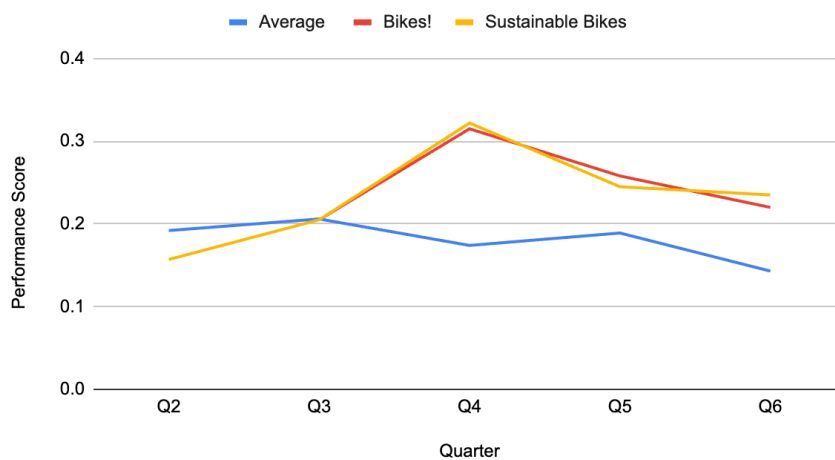
Issued

Financial Performance

Market Performance

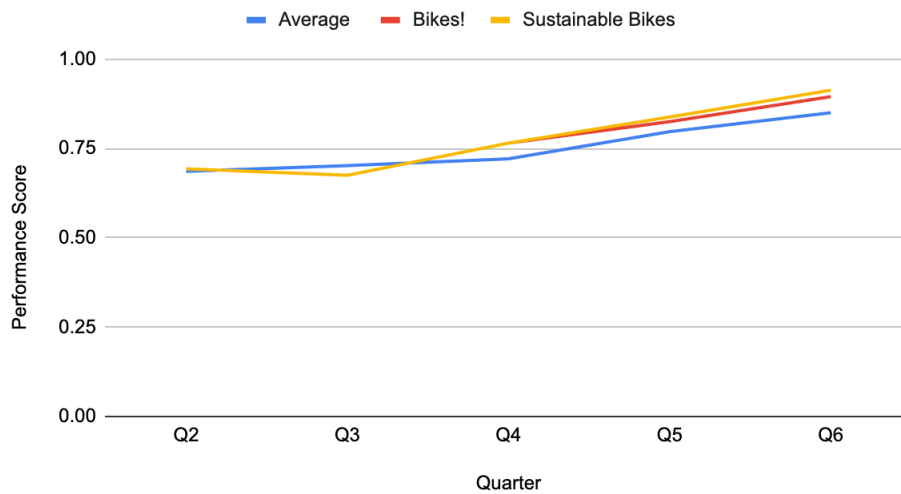
Market Performance = (Average Market Share in Targeted Segments / 100) * (Percent of Demand Actually Served / 100)

Market Performance

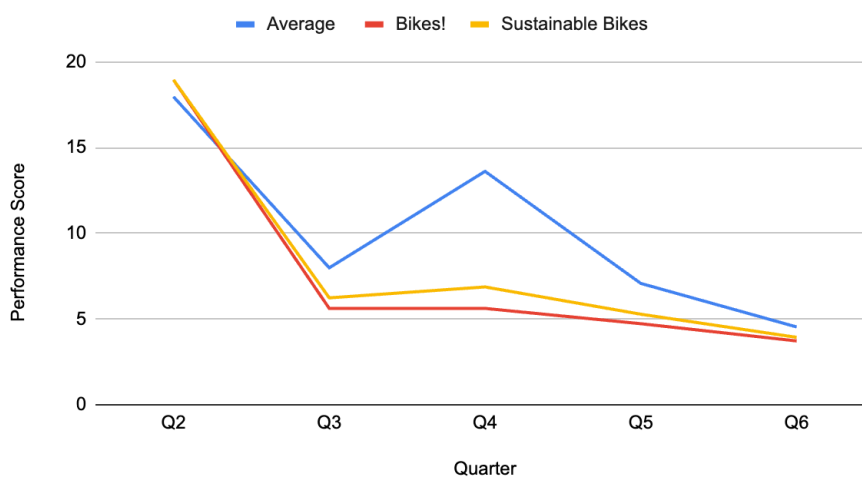


Marketing Effectiveness

$$\text{Marketing Effectiveness} = (\text{Average Brand Judgment} / 100 + \text{Average Ad Judgment} / 100) / 2$$

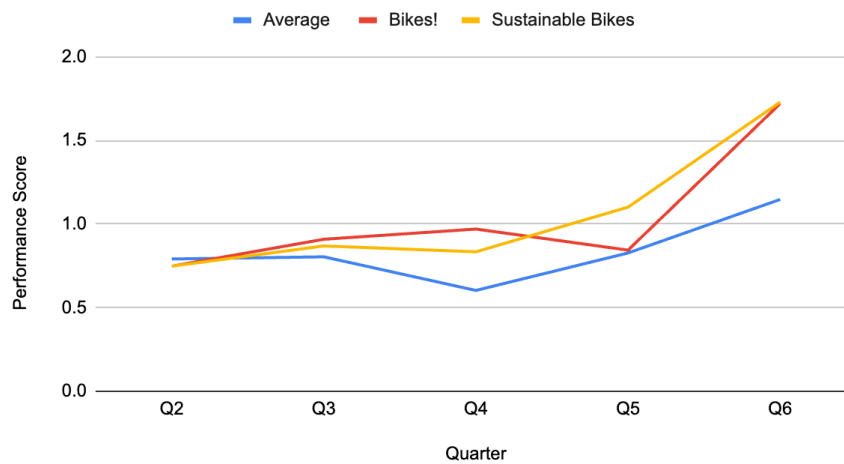
Marketing EffectivenessInvestment in Future

$$\text{Investment in Future} = (\text{Cumulative Expenses that Benefit Firm's Future} / \text{Cumulative Net Revenues}) * 10 + 1$$

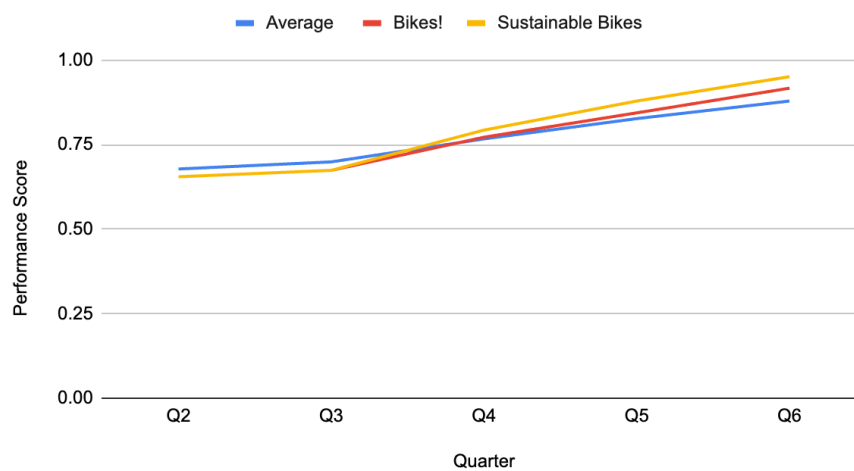
Investment in the Future

Wealth

Wealth = Net Equity / Total Stockholders Equity

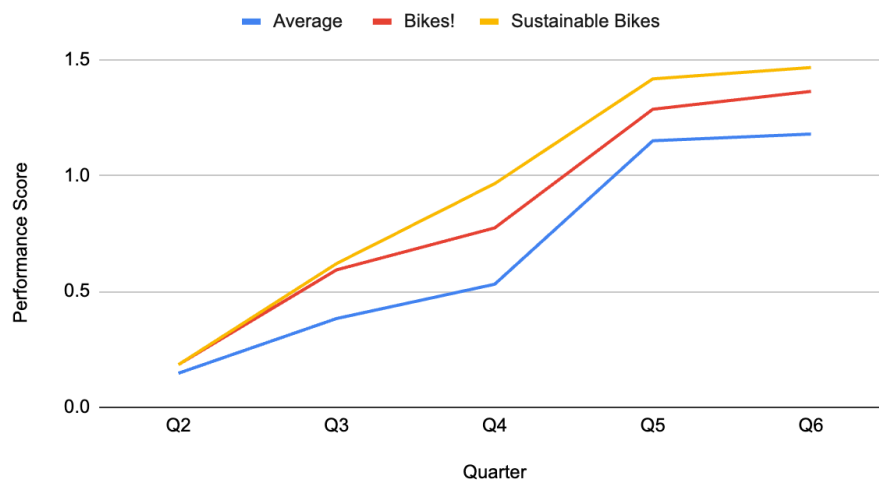
WealthHuman Resource Management

Human Resource Management = (Employee Compensation Satisfaction / 100 + (100 - Employee Turnover) / 100 + Employee Morale / 100) / 3

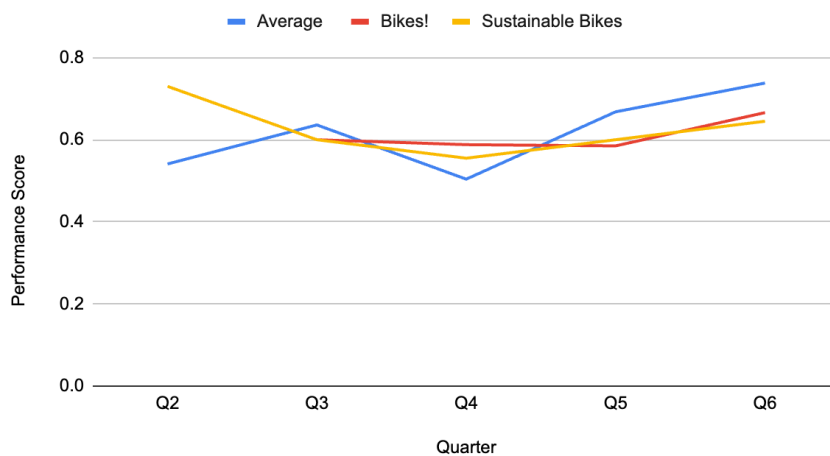
Human Resource Management

Asset Management

Asset Management = Asset Turnover

Assest ManagementManufacturing Productivity

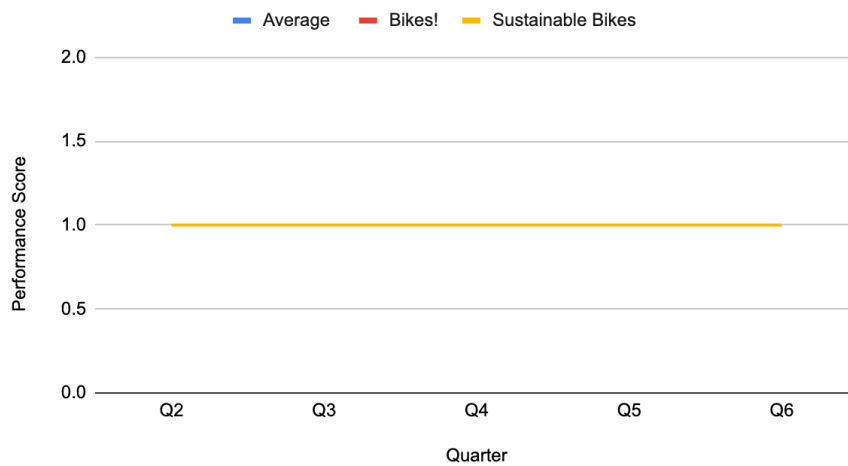
Manufacturing Productivity = (Reliability Judgment / 100) * ((Percent of Operating Capacity Used in Production / 100) - (Overtime as Percent of Operating Capacity Used / 2 / 100))

Manufacturing Productivity

Financial Risk

$$\text{Financial Risk} = (\text{Total Equity} / \text{Total Capital}) ^ {0.5}$$

Financial Risk



Reputation

$$\text{Reputation} = \text{Reputation Score from the Stakeholder Survey} / 100$$

Reputation

