In an ever-changing business environment, companies are using many different competencies to distinguish themselves from their competitors. Companies can no longer strictly focus on product performance, as consumers can more easily obtain a large amount of information about all aspects of a company. Many consumers are concerned with social and environmental issues in addition to product quality. If a company responds to these issues in a positive way, it can not only positively increase sales but increase consumer loyalty. This loyalty can increase sales not only from the consumer but also through increases in word of mouth. This research focuses on how consumers react to a company introducing a green (sustainable) product and investing in Corporate Social Responsibility (CSR) in a competitive environment. Though these are both positive investments in the eyes of consumers, green product investment and CSR are examined independently in this research. Investing in a green product directly impacts the product itself, while CSR investment increases attention on a product it does not directly affect the product. In prior research these investments are often undifferentiated, though they will have disparate impacts on consumer utility. Green product investment has a significant impact on the actual product, whereas CSR investment has only an indirect impact on the product. We investigate the distinct impacts of these investments along with the possibility of an interaction between the two.

A motivating example is found in the appliance industry. The leading appliance manufacturer in the world, Whirlpool released a new ventless home clothes dryer. This type of dryer has tremendous positive impact on the environment, it is energy efficient
and uses a heat pump to lead to approximately 40% energy savings. In addition to innovation through the introduction of green products Whirlpool is also focused on CSR initiatives. The company was named to the 2017 Dow Jones Sustainability North American Index for its commitment to both sustainability and natural resource efficiency. Whirlpool has a CSR focus that currently includes improving healthcare, energy/climate and monitoring the suppliers on their supply chain. Whirlpool’s emphasis on both green product innovation and CSR is obvious and seems to be larger than that of their main competitors such as GE. This is one example of a competitive environment that leads to a broader question. Can a company’s investments into green products and CSR lead to greater market share in a competitive environment? Specifically, under what conditions could these investments become a competitive advantage?

The analysis considers a two-period duopoly market. There are two firms in the market, one invested in a green product and the other with no green investment. The firms set their CSR investment level. After setting the investment level, the firms then set their first-period price. The investment in a green product and CSR will influence the utility that consumers obtain from either firm. After pricing information is revealed to the consumers they make their first-period purchase decision. After this first-period, the firms have the chance to update their prices to consumers based on first-period behavior. This behavior-based pricing allows the firms to offer different pricing to current consumers than the price offered to the consumers that chose the competing firm. After the prices are updated the consumers once again make their purchase decision and the firms obtain their total profit.
These profits will be dependent on the pricing decisions made in both time periods and the amount of investment in CSR. The model will be optimized to maximize profits and find the optimal CSR investment. Investing in a green product and CSR are seen to be complementary in that consumers will obtain similar utility from both investments. In this scenario we will investigate a possible moderating effect of CSR investment on green product sales. These investments can both be considered as social good, and when concurrently taking place the social utility of the consumers could rise faster than with just one of the two. In addition to investigating a synergistic effect of green products and CSR, we can also analyze a possible substitution effect. In this scenario the firm that has a green product does not invest in CSR while their competitor does. If these are substitutable investments than there would be a level of CSR investment at which the competitor would negate any profit increase the other firm receives from green product investment.