MRKT B9651 Marketing Analytics Group #21

Introduction & Data Collection

As digital banking becomes part of everyday student life, our group aimed to understand what credit card features matter most to Gen-Z college students. Many students are applying for their first credit card and tend to balance affordability with lifestyle-fit benefits such as cashback on daily spending or travel perks. To support a potential new product launch targeted at this segment, we conducted a ratings-based conjoint analysis to examine how students trade off key features. We select 5 most important attributes, including: **Annual Fee** with 3 levels: 0, 50, 100 dollars; **Reward Type** with 3 levels: Dining & Grocery (3 % cashback); Travel & Transportation (2 %cashback); Rent (1 % cashback); **Sign-Up Bonus** with 2 levels: Yes, No; **Card Network** with 3 levels: Visa, Mastercard, Amex; **Interest Rate (*APR*)** with 3 levels: 15 %, 20 %, 25 %. Then we generated 15 fractional-factorial credit card profiles rated on a 1–7 scale(*Questionnaire Sheet in Excel & Appendix B*). The survey was distributed via Google Forms to Gen-Z college students, yielding 14 responses, and used 10 for analysis. Data were dummy-coded in Excel (*Regression Matrix & Data* sheet) for estimating individual part-worths and conducting market share simulations.

Question A.

Baseline Model	
Annual Fee	0
Reward Type	Dining & Grocery Cashback (3%)
Sign-up Bonus	Yes
Card Network	Visa
Interest Rate	15%

We take the first level of each attribute as the baseline and include one dummy for each remaining level. The 9 regressors are: Annual Fee: *50*, *100;*Reward Type: Travel *2 %*, Rent *1 %;*Sign-Up Bonus: No; Card Network: Mastercard, Amex; APR: *20 %*, *25 %*. ***Respondent #7*** was chosen as the representative case due to alignment with typical

Gen-Z college students' economic intuition and the expected preferences. As shown in **Figure 1,** utilities decrease with higher APRs and less rewarding cashback types (*Travel & Rent*), reflecting price sensitivity. Positive utilities for a $50 annual fee (+0.37) and Amex (+1.25) suggest perceived quality or prestige, while Rent 1% Cashback (–1.17), no bonus (–0.91), and 25% APR (–0.92) reduce attractiveness. From **Table 1**, The **best profile** combines a $50 fee, Dining 3% cashback, sign-up bonus, Amex, and 15% APR (utility = 7.66), while the **worst** offers $0 fee, Rent 1% cashback, no bonus, Mastercard, and 25% APR (utility = 2.97). Overall, coefficients follow expected trends, with slight brand-driven preference for Amex.

Question B.

For ***Respondent #7***, by calculating the range of its part-worths divided by the total range across all attributes, table at right and **Figure 2** shows, **card network (28.4%)** and **reward type (24.8%)** as the top drivers, followed by **interest rate (19.5%)** and **sign-up bonus (19.3%)**, with **annual fee (8.0%)** least influential. While students are price sensitive to borrowing costs (APR), they value brand and rewards more than small fee differences, emphasizing a balance between affordability and perceived benefits when choosing a student credit card.

ATTRIBUTE IMPORTANCES		
Attribute	Range	Importance
annual fee	0.374640805	0.07979496603
reward type	1.16558908	0.2482595056
sign-up bonus	0.905172414	0.1927932064
card network	1.334051725	0.2841404638
interest rate (APR)	0.91558908	0.1950118582

Question C.

The part-worth plots for the Annual Fee variable across five respondents (see **Figure 3**) show a generally decreasing trend in utility as price increases, consistent with expectations that higher fees reduce product attractiveness. Most respondents preferred a $0 annual fee, though

one respondent displayed a slight positive utility for the $50 level, likely perceiving it as a signal of added benefits or prestige. The $100 fee consistently received negative utilities, indicating strong price sensitivity among respondents. Overall, the plots confirm that while respondents value affordability, some are willing to tolerate modest fees for perceived quality or enhanced rewards.

Question D.

Referring to **Table 2**, **Table 3**, and **Figure 4**, two new credit card profiles were created: Competitor X ($0 fee, Dining & Grocery 3% cashback, sign-up bonus, Visa, 15% APR) and Competitor Y ($100 fee, Rent 1% cashback, sign-up bonus, Mastercard, 20% APR). Using the ten respondents' part-worths, total utilities were computed, and market shares were estimated via the maximum-utility methods. Results show that Competitor X captures about 100% of the market, and Competitor Y holds 0%.

Question E.

To explore the impact of launching a new product competing with existing credit cards X and Y, three feasible profiles (Z1, Z2, Z3) were designed by varying key attribute levels while maintaining realistic market assumptions. All products retained a sign-up bonus and 15% or 20% APR to align with respondents' preferred ranges.

Product Z1 was designed as a moderately priced option with a $50 annual fee, Travel & Transportation 2% cashback, Amex network, and 15% APR. Market simulation (Appendix **Figure 5. Market Share after Z1 Introduction**) shows Z1 captures 20% market share, primarily drawing from X's customer base while Y remains uncompetitive.

Product Z2 was introduced with a higher $100 annual fee, Dining 3% cashback, Amex network, and 15% APR. The simulation (Appendix **Figure 6. Market Share after Z2 Introduction**) indicates Z2 gains 30% share, reducing X's dominance from 80% to 70%. This suggests a small segment values premium rewards even at higher fees.

Product Z3 kept similar specifications to X but used Travel & Transportation 2% cashback and 20% APR. The result (Appendix **Figure 7. Market Share after Z3 Introduction**) shows X retains 100% of the market, implying Z3 offers no competitive differentiation.

Overall, Z2 achieves the greatest improvement in total market capture while maintaining brand alignment with Gen-Z preferences for Amex and high-reward categories. Therefore, Z2 is recommended for launch to balance perceived value and profitability.

Summary

This project applied conjoint analysis to understand Gen-Z college students' credit card preferences. Using 10 respondents' ratings of 15 product profiles, part-worths were estimated in Excel through regression analysis. The results show that **card network** and **reward type are the most influential attributes**, followed by APR and sign-up bonus, while annual fee has the least impact. Students prefer Amex cards with dining rewards and low interest rates, reflecting a balance between perceived quality and affordability. Although this result goes beyond our expectation of students' price sensitivity–likely because most of our respondents come from privileged private school backgrounds and thus care less about annual fees and more on rewarding perks. Market simulations indicate that among the new product concepts, Z2, featuring a $100 annual fee, 3 % dining cashback, Amex network, and 15 % APR, achieves the best market performance, capturing 30% of the total market share.

Appendix A Tables and Graphs

	PARTWORTHS		
Intercept		6.04	Ideal profile
Annual Fee	$0	0	$50
	$50	0.3746408046	
	$100	0.2905890805	
Reward Type	Dining & Grocery Cashback (3%)	0	Dining & Grocery Cashback (3%)
	Travel & Transportation Cashback (2%)	-0.1659482759	
	Rent Cashback (1%)	-1.16558908	
Sign-up Bonus	Yes	0	Yes
	No	-0.9051724138	
Card Network/Type	Visa	0	Amex
	Mastercard	-0.08441091954	
	Amex	1.249640805	
Interest Rate (APR)	15%	0	15%
	20%	-0.6659482759	
	25%	-0.9155890805	

Figure 1: *Estimated Part-Worth Utilities for Credit Card Attributes (**Respondent #**7)*

We pick response 7:		
Answer		
Attribute	**Best Level**	**Worst Level**
Annual Fee	**$50 (+0.3746)**	**$0 (0)**
Reward Type	Dining & Grocery 3% (0)	Rent Cashback 1% (–1.1656)
Sign-up Bonus	Yes (0)	No (–0.9052)
Card Network	Amex (+1.2496)	Mastercard (–0.0844)
Interest Rate	15% (0)	25% (–0.9156)
Utility	**7.6642**	**2.9692**

Table 1: *Optimal and Least Preferred Product Profiles for Respondent #7*

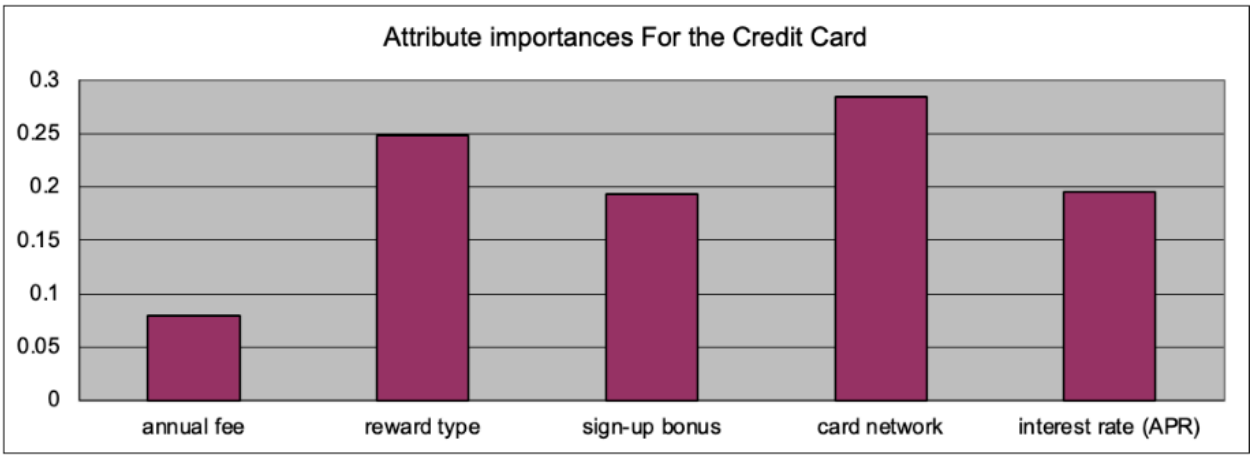

Figure 2. *Relative Importance of Credit Card Attributes*

Number of Options		2	
		X	Y
Market Shares		100%	0%
Unit Sales		10	0
		Alternatives	
Attributes	Levels	X	Y
Annual Fee	$0	X	
	$50		
	$100		X
Reward Type	Dining & Grocery Cashback (3%)	X	
	Travel & Transportation Cashback (2%)		
	Rent Cashback (1%)		X
Sign-up Bonus	Yes	X	X
	No		
Card Network/Type	Visa	X	
	Mastercard		X
	Amex		
Interest Rate (APR)	15%	X	
	20%		X
	25%		

Table 2. *Competitor Product Profiles Used for Market Share Simulation*

Respondent	X_Utility	Y_Utility	Choice
1	**5.87**	4.063972	X
2	4.44	2.388278	X
3	5.29	4.979656	X
4	6.54	2.667156	X
5	6.16	3.171141	X
6	6.21	5.49484	X
7	**6.04**	5.4144	X
8	5.31	4.204761	X
9	6.16	4.062658	X
10	6.19	1.684258	X
Share	1	0	

Table 3. *Respondent-Level Utilities and Predicted Market Share for Competitor X and Y*

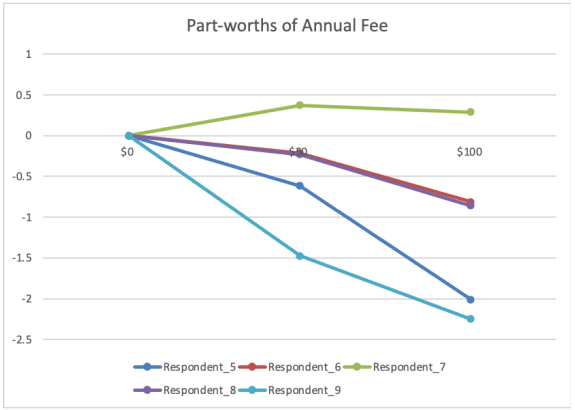

Figure 3. *Part-Worth Utilities for Annual Fee Levels Across Five Respondents*

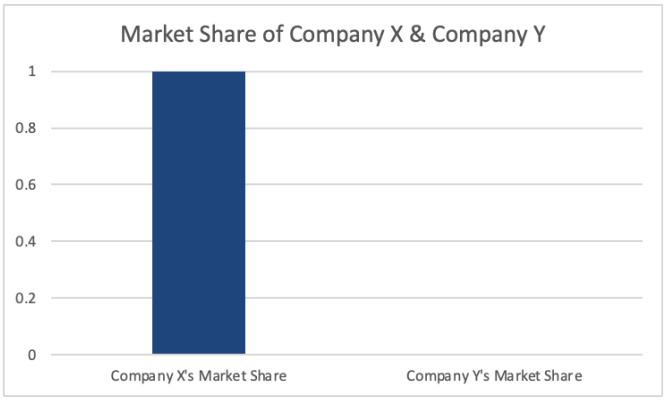

Figure 4. *Estimated Market Share of Competitor X and Competitor Y Based on Utilities*

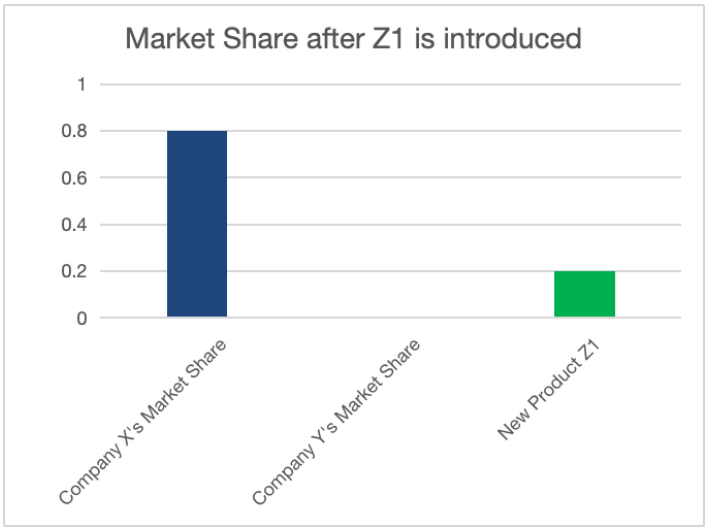

Figure 5. *Market Share after Z1 Introduction*

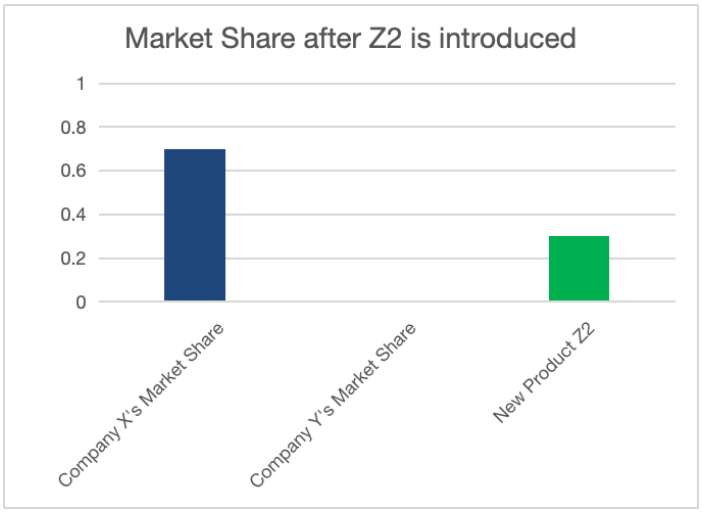

Figure 6. *Market Share after Z2 Introduction*

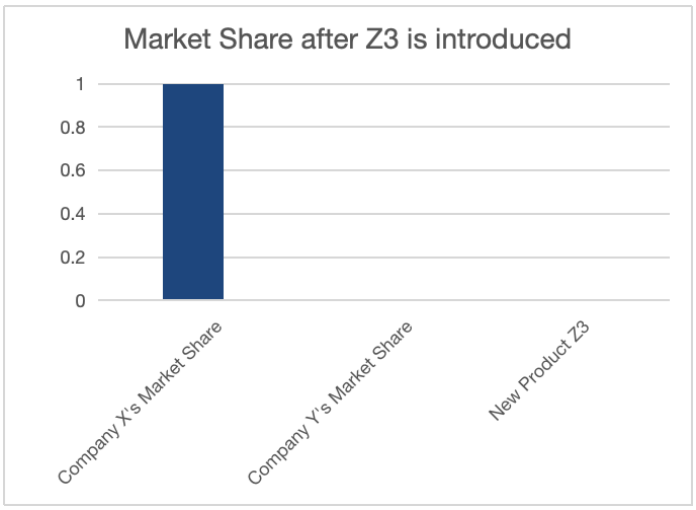

Figure 7. *Market Share after Z3 Introduction*

Appendix B Conjoint Survey Design

Experimental Design Builder

Parameters

Attribute	Levels
1	3
2	3
3	2
4	3
5	3
6	

Suggested Design

Profile	Annual Fee	Reward Type	Sign-up Bonus	Card Network	Interest Rate
(1)	3	1	2	2	3
(2)	1	2	1	1	2
(3)	1	1	1	3	3
(4)	2	2	2	3	3
(5)	1	1	2	1	2
(6)	3	3	2	3	2
(7)	3	1	1	2	1
(8)	3	3	2	1	1
(9)	3	2	1	1	3
(10)	2	1	2	1	1
(11)	1	3	1	3	1
(12)	2	3	1	2	2
(13)	2	3	1	1	3
(14)	1	2	2	2	1
(15)	1	3	2	2	3