Analysis Report

1. Recommendation

I recommend launching Evercrest because it stands out as the most attractive option with strong long-term revenue potential. Based on our Gabor Granger pricing analysis, the optimal price point is $34, balancing affordability and profit. However, Athena should remain flexible and adjust pricing based on market trends, competitor pricing, and demand shifts.

Also, a targeted marketing approach is the best strategy, focusing on Story-Driven Strategists, who have shown the highest willingness to pay. Our linear regression analysis confirms that this segment values deep storytelling and immersive gameplay—both key strengths of Evercrest. In contrast, Thrill Seekers tend to be more price-sensitive, and Completionists & Collectors don't show as strong a preference for this type of game.

The cross-tabulation analysis also revealed that Story-Driven Strategists are generally older and have higher incomes, meaning they have more disposable income for premium games. This supports a strategy that emphasizes Evercrest's rich storytelling, engaging characters, and immersive world-building to appeal directly to this audience.

Compared to competitors, Evercrest has the potential to carve out a unique niche in the high-value RPG market. Unlike Seraph Guardians, which has broader appeal but lower willingness to pay, Evercrest is more suited for players who are deeply invested in narrative-driven experiences. Our market share analysis suggests that despite competition, there is a strong opportunity to capture a dedicated audience willing to invest in a premium experience.

Given these factors, Evercrest is the clear winner. With the right marketing strategy targeting Story-Driven Strategists, Athena can maximize both initial sales and long-term player retention.

2. Market Size Estimation

a. Since Athena Softworks develops premium RPGs for PC, the most relevant category is Premium PC Games, which generated $13.8 billion in 2019.I found this in the report "SuperData_2019_Year_in_R".

b. The Premium PC Games market was expected to grow from $13.8B in 2019 to approximately $14.35B in 2020, assuming a 4% year-over-year growth rate according to the report.

c. I think COVID-19 has likely accelerated the growth of the gaming market as more people stayed home and sought digital entertainment. With lockdowns and social distancing measures in place, increased gaming engagement and spending were expected, particularly for digital PC and console games. Additionally, the shift toward online multiplayer and live-service games may have intensified as players looked for social interaction through gaming.

3. Cluster& Segmentation Analysis

a. According to the elbow chart, I classified the factors into eight categories. Although it was difficult to choose between 7, 8, 9, and 10, I believe selecting eight is sufficient, as it already explains 70% of the variance. Additionally, the factor loadings are all highly significant, indicating that eight factors are enough to classify these survey statements. The factor loadings are as follows:

Rotated Factor Loadings:

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
imp.challenge	-0.096828	0.628174	0.028288	0.139293	0.134585	0.002752	0.069254	0.027923
imp.unlocks	-0.005419	-0.155109	0.636230	0.155733	-0.039424	0.207401	0.202007	-0.063184
imp.customize	0.222905	-0.013710	-0.054588	0.100405	0.111733	-0.011612	-0.092255	-0.761038
imp.difficulty	-0.092328	0.622785	0.028057	0.128855	0.128822	0.014899	0.097535	0.028950
imp.characters	0.310905	-0.056546	-0.000030	-0.041516	0.084137	-0.035232	-0.768338	-0.107697
imp.storyline	0.327088	-0.035791	-0.001614	-0.056419	0.090339	-0.042444	-0.763813	-0.134754
imp.mastery	-0.024647	0.787077	-0.018099	0.090896	0.131402	-0.009102	0.031059	0.000993
imp.backstory	0.307966	-0.066108	0.000562	-0.040625	0.084664	-0.005496	-0.778012	-0.122063
imp.dominate	-0.007717	-0.039304	-0.487352	-0.035928	0.089390	-0.235054	0.148982	-0.096043
imp.completion	-0.024829	-0.159804	0.624245	0.145357	-0.038520	0.195350	0.179138	-0.079294
imp.wealth	0.208902	0.061777	0.243755	0.036171	0.135550	-0.110108	-0.050822	-0.147642
imp.fantasy	0.780837	-0.036188	0.008807	0.077263	0.105914	0.007659	-0.138835	-0.136595
imp.items	0.713688	-0.016998	0.006839	0.067184	0.085400	0.015752	-0.289287	-0.118413
imp.power	0.768991	-0.025042	0.008498	0.053237	0.112403	0.016690	-0.141748	-0.119890
imp.offbeat	0.161424	0.244130	-0.059057	0.057096	0.777977	-0.018001	-0.059198	-0.103271
imp.collect	-0.003057	-0.176850	0.644301	0.143899	-0.025614	0.194440	0.205845	-0.080947
enj.excitement	0.000500	0.020843	-0.169718	-0.167527	0.016542	-0.719131	-0.030590	-0.008532
enj.destruction	-0.100369	-0.156796	-0.101628	-0.784339	-0.063487	-0.110909	-0.015783	0.100647
enj.others	-0.010665	-0.022990	-0.734454	0.009884	0.040725	0.013215	-0.001121	-0.053213
enj.react	0.000741	0.003677	-0.154291	-0.109602	0.037313	-0.719882	-0.032920	-0.054054
enj.duels	-0.027579	-0.036962	-0.554636	-0.076461	0.073493	-0.220633	0.150586	-0.075893
enj.strategy	0.039748	0.766173	-0.050758	0.078670	0.103104	-0.019426	-0.040631	-0.027309
enj.roleplay	0.781599	-0.036363	-0.001692	0.053846	0.106423	-0.006205	-0.130039	-0.122804
enj.competition	-0.024789	-0.046978	-0.559645	-0.081585	0.047862	-0.224615	0.162182	-0.079070
enj.decisions	0.060649	0.771987	-0.068027	0.071708	0.095608	-0.036603	-0.023143	-0.024588
enj.common.goal	0.024424	0.008833	-0.713385	0.013472	0.043156	0.070367	-0.008158	-0.059116
enj.planning	0.023422	0.776083	-0.052852	0.056151	0.109458	-0.032023	-0.041439	-0.015622
enj.immersion	0.782474	-0.023695	0.007447	0.099683	0.095361	0.018209	-0.137339	-0.120890
enj.helping	0.000260	-0.003968	-0.712782	0.021861	0.017066	0.079222	-0.008888	-0.055935
enj.fast	-0.005190	0.027308	-0.174332	-0.120693	0.025698	-0.738315	-0.013478	-0.043434
enj.guns	-0.093667	-0.186138	-0.099160	-0.792192	-0.047372	-0.090997	-0.048598	0.081963
enj.gore	-0.087698	-0.156129	-0.095815	-0.784862	-0.079711	-0.149473	-0.025728	0.083745
enj.blow.up	-0.073364	-0.174285	-0.117721	-0.787373	-0.073853	-0.122394	-0.029737	0.107216
freq.explore	0.142446	0.228594	-0.069295	0.076095	0.757096	-0.018988	-0.051770	-0.074583
freq.experiment	0.129148	0.222484	-0.073868	0.072541	0.765099	-0.024075	-0.055886	-0.097242
freq.study	-0.020960	0.773912	-0.024596	0.086387	0.146464	0.010648	0.028001	0.007733
freq.char.creation	0.180758	-0.015072	-0.056483	0.131953	0.109953	-0.075500	-0.110329	-0.719805
freq.stats	0.210958	0.049429	0.234958	0.057176	0.150094	-0.140079	-0.039221	-0.145850
freq.customize	0.202319	0.013626	-0.065096	0.108173	0.090492	-0.032957	-0.094579	-0.735358
freq.test.world	0.132466	0.230983	-0.110994	0.059130	0.758498	-0.055238	-0.082476	-0.088826

*All red rectangular indicates the most relevant survey statement for each factor

I named them respectively as:
Factor 1 **Fantasy Immersion** – Deep storylines, role-playing, world-building.
Factor 2 **Strategic Play** – Planning, decision-making, complex strategies.
Factor 3 **Completion Mastery** – Unlocking content, collecting, full completion.
Factor 4 **Exploration Experimentation** – Open-world discovery, testing mechanics.
Factor 5 **Competitive Engagement** – PVP, duels, skill-based challenges.

Factor 6 **Destruction Chaos** – Fast-paced, explosive, high-intensity gameplay.
Factor 7 **Social Interaction** – Multiplayer, teamwork, cooperation.
Factor 8 **Customization Creativity** – Character creation, modifying game elements.

b. The cluster centers are as follows:

Cluster Centers:

	Cluster 0	Cluster 1	Cluster 2	Cluster 3	Cluster 4
imp.challenge	3.176252	3.991914	3.234957	4.673516	5.661123
imp.unlocks	3.174397	5.172507	5.925501	2.869863	3.900208
imp.customize	2.647495	4.013477	3.200573	4.283105	2.288981
imp.difficulty	3.126160	3.919137	3.309456	4.566210	5.619543
imp.characters	4.730983	5.741240	3.309456	5.698630	2.985447
imp.storyline	4.742115	5.816712	3.229226	5.630137	3.054054
imp.mastery	2.946197	3.805930	2.770774	4.742009	5.361746
imp.backstory	4.730983	5.757412	3.338109	5.680365	2.993763
imp.dominate	4.289425	2.924528	3.295129	4.426941	3.638254
imp.completion	3.237477	5.156334	5.942693	2.965753	3.802495
imp.wealth	3.166976	4.805930	3.154728	3.415525	3.178794
imp.fantasy	3.385900	5.407008	3.220630	4.769406	2.698545
imp.items	3.564007	5.455526	3.329513	5.070776	2.783784
imp.power	3.404453	5.388140	3.312321	4.940639	2.729730
imp.offbeat	2.684601	4.078167	1.925501	4.794521	3.474012
imp.collect	3.230056	5.304582	5.985673	2.931507	3.873181
enj.excitement	5.150278	3.876011	3.269341	4.404110	3.983368
enj.destruction	5.515770	2.905660	3.212034	3.107306	3.272349
enj.others	4.170686	2.528302	3.260745	5.047945	3.683992
enj.react	4.948052	3.822102	3.315186	4.426941	3.943867
enj.duels	4.521336	2.566038	3.289398	4.600457	3.690229
enj.strategy	2.788497	3.870620	2.352436	4.671233	5.033264
enj.roleplay	3.428571	5.304582	3.292264	4.856164	2.659044
enj.competition	4.541744	2.536388	3.263610	4.529680	3.623701
enj.decisions	2.808905	3.760108	2.326648	4.636986	4.923077
enj.common.goal	4.012987	2.450135	3.157593	5.248858	3.735967
enj.planning	2.836735	3.795148	2.300860	4.664384	4.995842
enj.immersion	3.328386	5.415094	3.263610	4.787671	2.696466
enj.helping	4.077922	2.495957	3.234957	5.102740	3.802495
enj.fast	4.953618	3.781671	3.289398	4.417808	3.914761
enj.guns	5.525046	2.943396	3.263610	3.189498	3.174636
enj.gore	5.606679	2.851752	3.194842	3.230594	3.276507
enj.blow.up	5.575139	2.838275	3.266476	3.221461	3.170478
freq.explore	2.677180	3.991914	1.982808	4.687215	3.523909
freq.experiment	2.630798	3.962264	1.962751	4.817352	3.434511
freq.study	3.003711	3.873315	2.830946	4.810502	5.361746
freq.char.creation	2.673469	4.018868	3.123209	4.205479	2.355509
freq.stats	3.178108	4.867925	3.203438	3.470320	3.182952
freq.customize	2.701299	4.005391	3.189112	4.267123	2.357588
freq.test.world	2.779221	3.894879	1.936963	4.794521	3.469854

Segment 1 – Thrill Seekers
Interpretation:
These players seek fast-paced, high-energy gameplay with intense action, destruction, and direct competition.

Most Important Factors:
Destruction & Chaos – Preference for combat and explosions.
Competitive Engagement – Enjoy direct competition and challenges.
Excitement – Motivated by fast reactions and adrenaline rushes.

Segment 2 – Story-Driven Strategists
Interpretation:
They prioritize deep narratives, immersive worlds, and strategic decision-making over action.

Most Important Factors:
Fantasy & Immersion – Strong interest in storytelling and world-building.
Strategic Play – Enjoy long-term planning and decision-making.
Social Interaction – Engage in narrative-driven multiplayer experiences.

Segment 3 – Completionists & Collectors
Interpretation:
They are goal-oriented players who focus on collecting, unlocking achievements, and full completion.

Most Important Factors:
Completion & Mastery – Driven by 100% game completion.
Customization & Creativity – Enjoy personalizing characters and environments.
Exploration & Experimentation – Seek to uncover all in-game content.

Segment 4 – Explorers & Experimenters
Interpretation:
They enjoy open-world experiences, discovering new mechanics, and testing different playstyles.

Most Important Factors:
Exploration & Experimentation – Love for discovery and non-linear gameplay.
Customization & Creativity – Prefer modifying and adapting gameplay.
Strategic Play – Analyze different approaches to gameplay.

Segment 5 – Competitive Warriors
Interpretation:
They thrive in challenging, high-skill, competitive environments and value strategy and social competition.

Most Important Factors:
Competitive Engagement – Prefer ranked matches and leaderboards.
Strategic Play – Emphasize skill and tactical decision-making.
Social Interaction – Engage in competitive multiplayer settings.

c. I did both cross-tabulation analysis for categorical demographical variables- region and gender, then I did regression analysis for the constant variables- age and income. Because the original column "state" has to many classifications, I add a new column "region" to classify these states into "Midwest", "northeast", "south" and "west". The results and the conclusions are as below:

1) Checks if gender & region significantly differ across segments

Chi-square value (Gender vs. Segment): 53.22
P-value: 0.0000

gender	female	male	nonbinary
Segment_Label			
Competitive Warriors	41.372141	57.588358	1.039501
Completionists & Collectors	55.873926	43.266476	0.859599
Story-Driven Strategists	50.673854	48.517520	0.808625
Thrill Seekers	35.621521	63.821892	0.556586
xplorers & Experimenters	51.826484	47.945205	0.228311

Chi-square value (Region vs. Segment): 16.63
P-value: 0.1639

region	Midwest	Northeast	South	West
Segment_Label				
Competitive Warriors	21.621622	17.047817	37.629938	23.700624
Completionists & Collectors	20.343840	15.472779	39.541547	24.641834
Story-Driven Strategists	27.762803	13.477089	38.005391	20.754717
Thrill Seekers	18.181818	19.109462	38.589981	24.118738
xplorers & Experimenters	21.917808	16.210046	36.757991	25.114155

*These numbers are by percentage

The table in the left side shows relationship between Gender vs. Segment, since $p < 0.05$, the relationship between gender and customer segment is statistically significant. This means that certain segments are more likely to be male or female compared to others. Specifically, in Competitive Warriors, there are more male (57.6%) than female (41.4%). In Completionists & Collectors, there is more female (55.9%) than male (43.3%). Story-Driven Strategists is more balanced, but slightly more female (50.7%) than male (48.5%). Thrill Seekers is heavily male-dominated (63.8%), only 35.6% female. While Explorers & Experimenters is more balanced, with 51.8% female and 47.9% male. This indicates that **Thrill Seekers and Competitive Warriors attract more male players. Completionists & Collectors attract more female players, and Story-Driven Strategists and Explorers & Experimenters have a more balanced gender distribution.**

The table in the right side shows the relationship between region and segment. Since $p > 0.05$, there is no significant relationship between region and segment. Marketing strategies do not need to be heavily tailored by region since segment membership does not depend significantly on geographic factors.

2) Check if income & age have effect across segments

```
                         MNLogit Regression Results
==============================================================================
Dep. Variable:      cluster_label_named   No. Observations:           2178
Model:                        MNLogit   Df Residuals:               2162
Method:                           MLE   Df Model:                     12
Date:                Mon, 24 Feb 2025   Pseudo R-squ.:             0.08146
Time:                        22:06:33   Log-Likelihood:            -3194.1
converged:                       True   LL-Null:                   -3477.4
Covariance Type:            nonrobust   LLR p-value:             1.462e-113
==============================================================================
cluster_label_named=Completionists & Collectors    coef    std err      z     P>|z|    [0.025    0.975]
------------------------------------------------------------------------------
const                                   0.0968      0.242    0.400    0.689   -0.378     0.571
age                                     0.0031      0.011    0.288    0.774   -0.018     0.024
income                              -4.025e-06   3.09e-06   -1.303    0.193  -1.01e-05  2.03e-06
gender_encoded                         -0.5368      0.141   -3.820    0.000   -0.812    -0.261
------------------------------------------------------------------------------
cluster_label_named=Explorers & Experimenters      coef    std err      z     P>|z|    [0.025    0.975]
------------------------------------------------------------------------------
const                                   3.7059      0.390    9.506    0.000    2.942     4.470
age                                    -0.1393      0.020   -6.930    0.000   -0.179    -0.100
income                              -1.288e-06   4.03e-06   -0.320    0.749  -9.18e-06  6.61e-06
gender_encoded                         -0.4198      0.137   -3.057    0.002   -0.689    -0.151
------------------------------------------------------------------------------
cluster_label_named=Story-Driven Strategists       coef    std err      z     P>|z|    [0.025    0.975]
------------------------------------------------------------------------------
const                                  -1.7654      0.226   -7.801    0.000   -2.209    -1.322
age                                     0.0618      0.009    7.093    0.000    0.045     0.079
income                              -4.343e-06   2.78e-06   -1.560    0.119   -9.8e-06  1.11e-06
gender_encoded                         -0.3993      0.142   -2.820    0.005   -0.677    -0.122
------------------------------------------------------------------------------
cluster_label_named=Thrill Seekers      coef    std err      z     P>|z|    [0.025    0.975]
------------------------------------------------------------------------------
const                                   2.1162      0.289    7.314    0.000    1.549     2.683
age                                    -0.0742      0.014   -5.267    0.000   -0.102    -0.047
income                              -4.084e-06   3.27e-06   -1.248    0.212  -1.05e-05  2.33e-06
gender_encoded                          0.2489      0.129    1.928    0.054   -0.004     0.502
==============================================================================
```

The graph above shows the regression outcome. The coefficients indicate whether increasing a variable increases (+) or decreases (-) the likelihood of belonging to a particular segment compared to the baseline category (which is the omitted segment, "Competitive Warriors").

The effects are shown in the following table:

Segment	Age Effects	Income Effects
Completionists & Collectors	Neutral (slightly older)	Weak negative
Explorers & Experimenters	Younger players	Neutral
Story-Driven Strategists	Older players	Weak negative
Thrill Seekers	Younger players	Weak negative

This shows that Age is an important predictor of segment membership- **older players tend to be in Story-Driven Strategists and Completionists & Collectors, while younger players are more likely to be in Thrill Seekers and Explorers & Experimenters.** Income does not strongly influence segment membership.

3) Size, female percentage, Avg. age and Avg.income

Segment_Label	Segment Size (%)	Percent Female (%)	Average Age	Average Income
Competitive Warriors	22.08	41.37	29.23	58438.67
Completionists & Collectors	16.02	55.87	28.52	53593.12
Story-Driven Strategists	17.03	50.67	36.33	69175.20
Thrill Seekers	24.75	35.62	24.25	42133.58
xplorers & Experimenters	20.11	51.83	22.86	36509.13

Finally, I summarized these values across different segments. Combined with previous analysis, the segmentation analysis highlights distinct player profiles. **Thrill Seekers** are **young, predominantly male**, and drawn to **fast-paced, high-adrenaline games**. **Story-Driven Strategists** are **older**, have **higher incomes**, and prefer **narrative-rich, strategic** experiences. **Completionists & Collector** are mostly **female**, enjoy **achievement-based** gameplay, and value collecting in games. **Explorers & Experimenters** are **younger**, lean slightly **female**, and favor **open-world or sandbox-style** play. **Competitive Warriors** have a balanced demographic and are likely drawn to **skill-based** competition.

Given Evercrest is a fantasy adventure game with both single-player and multiplayer modes, emphasizing creativity, exploration, compelling characters, and narrative, the most relevant target segments are **Story-driven Strategists** and **Explorers & Experimenters.**

4. Pricing Strategy

a. Because the missing value percentage is above 5%, I used **median** imputation per game to fill in the missing value.

```
gg.game.presented
Evercrest            0.075221
Seraph Guardians     0.062169
Warrior Guild        0.053763
Name: gg.maxprice, dtype: float64
```

b. According to the analysis results, Ideal price point for Warrior Guild is $35.00, for Seraph Guardians is $32.00, and for Evercrest is $34.00.

Willingness to Pay for Evercrest

Predicted Revenue for Evercrest
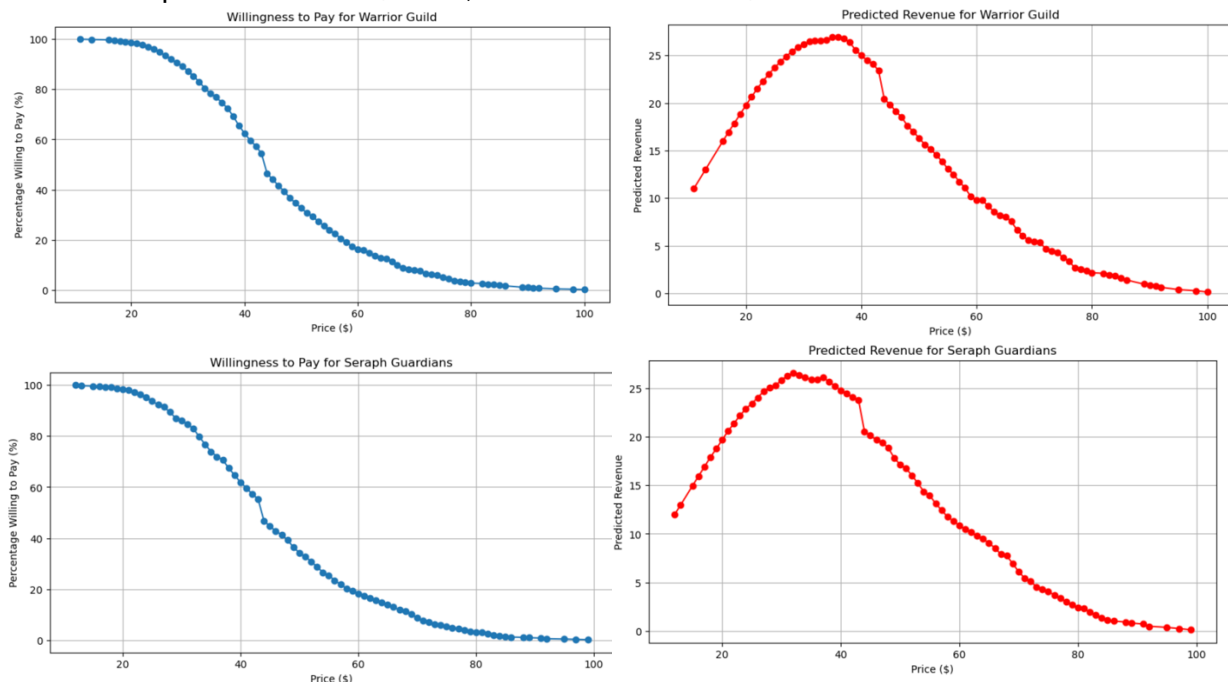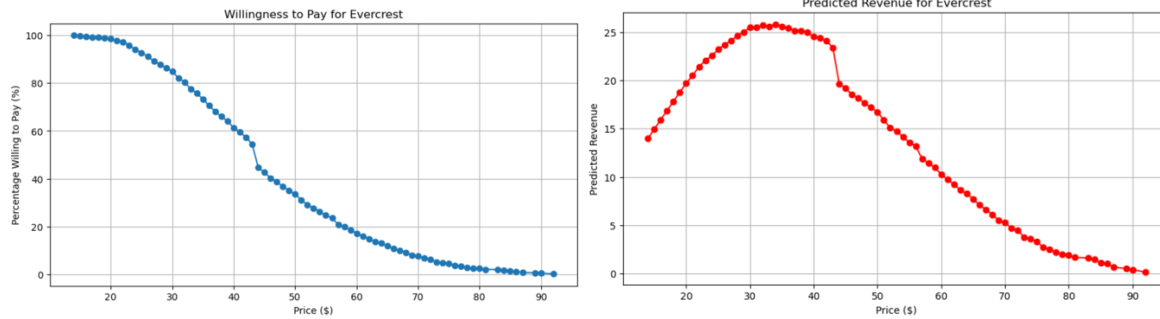
c. According to the regression outcome, for **Warrior Guild**, most interested segment is Story-Driven Strategists (highest positive coefficient). This group is again the most willing to pay for the game. Least interested segment is Completionists & Collectors (most negative coefficient). For **Seraph Guardians**, most interested segment is Story-Driven Strategists (highest positive coefficient). This segment shows the strongest willingness to pay. Least interested segment is Thrill Seekers (most negative coefficient), followed by Explorers & Experimenters. These segments are less likely to pay high prices for this game. In terms of **Evercrest**, most interested segment is Story-Driven Strategists (highest positive coefficient).Least interested segment is Thrill Seekers (most negative coefficient). This group is the least willing to pay.

Across all three games, Story-Driven Strategists consistently show the highest willingness to pay, making them the ideal primary target audience.

```
### Linear Regression for Warrior Guild ###
                        OLS Regression Results
==============================================================================
Dep. Variable:            gg.maxprice   R-squared:                     0.051
Model:                            OLS   Adj. R-squared:                0.046
Method:                 Least Squares   F-statistic:                   9.933
Date:                Tue, 25 Feb 2025   Prob (F-statistic):         7.83e-08
Time:                        16:26:57   Log-Likelihood:              -3050.8
No. Observations:                 744   AIC:                           6112.
Df Residuals:                     739   BIC:                           6135.
Df Model:                           4
Covariance Type:            nonrobust
==================================================================================================
                                         coef    std err          t      P>|t|     [0.025     0.975]
--------------------------------------------------------------------------------------------------
const                                 47.2312      1.159     40.759      0.000     44.956     49.506
Segment_Label_Completionists & Collectors  -5.4031      1.738     -3.108      0.002     -8.815     -1.991
Segment_Label_Story-Driven Strategists    4.3748      1.723      2.538      0.011      0.991      7.758
Segment_Label_Thrill Seekers             -4.1635      1.569     -2.654      0.008     -7.244     -1.083
Segment_Label_xplorers & Experimenters   -3.1782      1.723     -1.844      0.066     -6.562      0.205
==============================================================================
Omnibus:                       59.398   Durbin-Watson:                 1.894
Prob(Omnibus):                  0.000   Jarque-Bera (JB):             71.822
Skew:                           0.725   Prob(JB):                   2.53e-16
Kurtosis:                       3.464   Cond. No.                       5.68
==============================================================================
```

Linear Regression for Seraph Guardians

                         OLS Regression Results
==
Dep. Variable: gg.maxprice   R-squared: 0.144
Model: OLS   Adj. R-squared: 0.139
Method: Least Squares   F-statistic: 31.50
Date: Tue, 25 Feb 2025   Prob (F-statistic):   2.78e-24
Time: 16:26:57   Log-Likelihood: -3090.1
No. Observations: 756   AIC: 6190.
Df Residuals: 751   BIC: 6213.
Df Model: 4
Covariance Type: nonrobust
===
                                              coef   std err   t   P>|t| [0.025   0.975]
----
const   48.7619   1.116   43.688   0.000   46.571   50.953
Segment_Label_Completionists & Collectors -3.4619   1.690   -2.049   0.041   -6.779   -0.144
Segment_Label_Story-Driven Strategists   8.3290   1.774   4.694   0.000   4.846   11.812
Segment_Label_Thrill Seekers   -10.1206   1.544   -6.556   0.000   -13.151   -7.090
Segment_Label_xplorers & Experimenters   -5.9204   1.588   -3.728   0.000   -9.038   -2.803
==
Omnibus: 52.169   Durbin-Watson: 1.938
Prob(Omnibus):   0.000   Jarque-Bera (JB):   61.263
Skew: 0.684   Prob(JB):   4.98e-14
Kurtosis: 3.269   Cond. No.   5.61
==

Linear Regression for Evercrest

                         OLS Regression Results
==
Dep. Variable: gg.maxprice   R-squared: 0.116
Model: OLS   Adj. R-squared: 0.111
Method: Least Squares   F-statistic: 22.04
Date: Tue, 25 Feb 2025   Prob (F-statistic):   4.06e-17
Time: 16:26:57   Log-Likelihood: -2762.7
No. Observations: 678   AIC: 5535.
Df Residuals: 673   BIC: 5558.
Df Model: 4
Covariance Type: nonrobust
===
                                              coef   std err   t   P>|t| [0.025   0.975]
----
const   46.8497   1.155   40.553   0.000   44.581   49.118
Segment_Label_Completionists & Collectors -3.7618   1.892   -1.989   0.047   -7.476   -0.047
Segment_Label_Story-Driven Strategists   6.3054   1.708   3.691   0.000   2.952   9.659
Segment_Label_Thrill Seekers   -9.0767   1.609   -5.643   0.000   -12.235   -5.918
Segment_Label_xplorers & Experimenters   -2.6032   1.665   -1.563   0.118   -5.873   0.666
==
Omnibus: 36.331   Durbin-Watson: 2.054
Prob(Omnibus):   0.000   Jarque-Bera (JB):   40.944
Skew: 0.598   Prob(JB):   1.29e-09
Kurtosis: 3.138   Cond. No.   5.58
==

d. We can estimate the number of real buyers in Steam market using the given information, then we can calculate the expected revenue, which equals #buyers x price. I put this information into code and try to find the price that maximize the revenue. Finally, I get the optimal price for each game and the according graph.

Warrior Guild Revenue Analysis
Optimal Price: $43.00
Expected Gross Revenue: $10,403,226
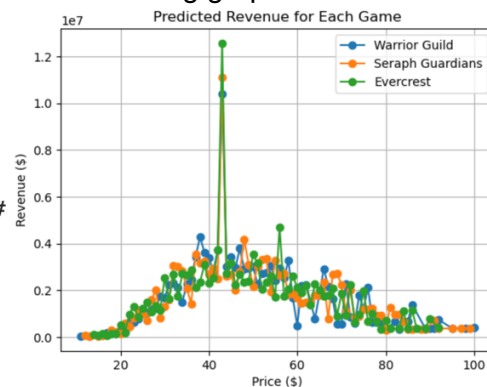
Seraph Guardians Revenue Analysis
Optimal Price: $43.00
Expected Gross Revenue: $11,091,270

Evercrest Revenue Analysis
Optimal Price: $43.00
Expected Gross Revenue: $12,557,522

Predicted Revenue for Each Game

e. How should the game be priced?

1) **Profitability**: The price should cover development and marketing costs while maximizing potential revenue.
2) **Competitive Benchmarking**: Pricing should align with similar games in the market while reflecting Evercrest's unique value proposition.
3) **Customer Willingness to Pay**: Insights from pricing survey data (e.g., Gabor Granger analysis) should guide the optimal price point to balance affordability and revenue potential.
4) **Special Pricing Strategies**: Athena should consider whether to implement strategies such as early-bird discounts, bundled DLC offers, or seasonal promotions to enhance sales and long-term engagement.

By integrating these factors, Athena can establish a pricing strategy that ensures profitability, maintains market competitiveness, and aligns with player expectations.

5. Market Share Evaluation

a. If we assume that 1) prices of each game are the same; 2) surveyed customers can represent the market; 3) each customer purchases only one game, then the percentage of players ranking 1 in each game represents the market share. In this case, the market share are as follows:

```
Estimated Market Share (%) for Each Game:
rank.WarriorGuild        13.177227
rank.SeraphGuardians     50.045914
rank.Evercrest            9.779614
rank.DevilsGate          18.595041
rank.Marksman             2.295684
rank.QuestoftheTitan      6.106520
dtype: float64
```


Estimated Market Share for Athena's Games vs Competitors
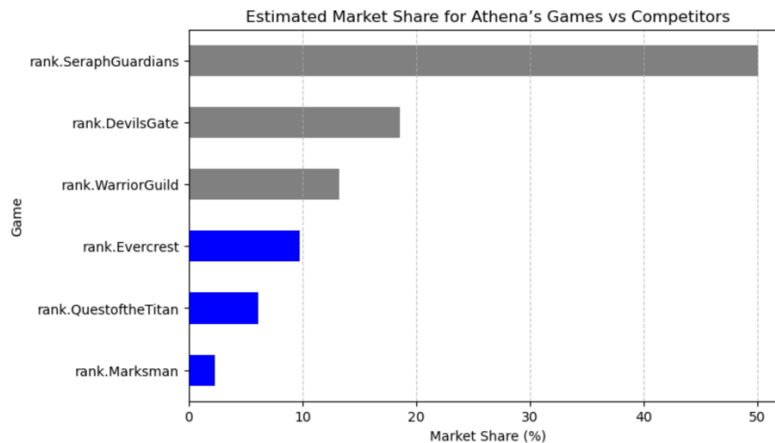
b. I think assumption 1 and assumption 3 are too away from reality. The price of these games cannot be same and it's almost impossible that each player will only buy 1 game. So the change I made is: 1) I search for the real price for three launched games, they are respectively- $14.99 for DevilsGate, $19.9 for QuestoftheTitan, and $9.99 for Marksman. As for the prices of three games that we are discussing about, I'll use the

optimal price I get in previous questions to represent their prices- Ideal price point for Warrior Guild is $35.00, for Seraph Guardians is $32.00, and for Evercrest is $34.00. 2) I'm change the rank into probabilities, using 80% to replace rank 1, 60% to replace rank 2, 40% to replace rank 3, 20% to replace rank 4,10% to represent rank 5, and 5% to represent rank 6. New results are shown below:

Estimated Market Share Based on Rank and Price

	Game	Expected Revenue	Market Share (%)
0	rank.WarriorGuild	28161.0000	23.324806
1	rank.SeraphGuardians	41377.6000	34.271670
2	rank.Evercrest	21131.0000	17.502095
3	rank.DevilsGate	11652.4765	9.651353
4	rank.Marksman	5235.2595	4.336189
5	rank.QuestoftheTitan	13176.7850	10.913887