PRICING STRATEGY DESIGN FOR ZACH'S GARAGE USING GABOR-GRANGER ANALYSIS

A Report on Data-Driven Ticket Pricing Scenarios to Support Community Engagement and Financial Sustainability

AUTHOR

Shreya Muraleedharan Swapna

STATEMENT OF THE PROBLEM

Zachary Lewis, a longtime dark metal fan and experienced accountant, established Zach's Garage, a neighbourhood music venue in downtown Chicago. He turned an abandoned warehouse into a bustling venue where up-and-coming musicians could perform without worrying about money because he was passionate about music and inclusivity. His objective was to establish a low-barrier, easily accessible platform that would allow musicians and audiences of all income levels to engage through live music. To realize this vision, Zach personally provided funding for the renovations, obtained city permits, and paid for operating costs. In keeping with its grassroots goals, Zach's Garage events are free to attend, with donations to the bands being accepted. The venue quickly became well-known with sold-out performances and an expanding fan base of over 10,000.

Zach's Garage is currently having severe financial difficulties despite its increasing popularity. The venue currently has a $3,000 monthly deficit. It plans to spend more on capital projects for infrastructure improvements, such as better safety systems, high-end lighting and sound, and legal fees for liability and zoning compliance. Zach is steadfast in his commitment to affordability and accessibility, especially for students. However, he understands the pressing need for a long-term pricing plan that will not jeopardize the inclusive atmosphere of the venue. To explore viable solutions, Zach partnered with a marketing consultant to conduct a ***pricing study using the Gabor-Granger method***, a standard tool for measuring price sensitivity. Survey participants were asked to rate their likelihood of attending events at ***six ticket prices: $1, $3, $5, $8, $12, and $20,*** using a five-point scale (where 1–2 = 0%, 3 = 10%, 4 = 40%, and 5 = 100% chance of attending). The survey also collected ***demographic data*** such as age and gender to support segmented analysis. By linking each price rating to a specific likelihood of attendance, Zach could estimate potential attendance and revenue across different pricing scenarios—insights that will inform a pricing model designed to balance financial stability with the venue's *community-focused mission*.

This report analyses pricing data for Zach's Garage using the Enginius Marketing Analytics platform and the Gabor-Granger Pricing Method to identify sustainable ticket pricing strategies. It explores different pricing scenarios and their effects on revenue, attendance, and accessibility, helping Zach balance financial recovery with his commitment to community inclusivity. The analysis is structured around five central business questions:

1. ***Revenue Optimization:*** Given an average of 250 attendees per event and 12 events per month, what ticket price would bring in the most money each month? Would this income be enough to pay the venue's $3,000 monthly fixed cost?
2. ***Price Sensitivity:*** How much would it cost to cut attendance in half, from 250 people to about 125 people per event?
3. ***Analysis of Break-Even:*** How much can Zach charge for a ticket and still make enough monthly money to cover his operating costs?
4. ***Segmented Strategy:*** Free Admission for Youth: What would be the best ticket price for the remaining paying audience if Zach grants free admission to those 21 years of age and under, who make up an estimated one-third of the total audience? What impact would this have on total attendance and income?
5. ***Youth Discounted Pricing through Segmented Strategy*:** What is the profit-maximizing discounted price for the younger segment instead of providing free entry? How does this price affect overall revenue, attendance, and Zach's long-term strategy, and how does it compare to the revenue-maximizing price determined in Question 1? Would the results of the financial and community engagement analyses support the recommendation of this approach?

Through demand forecasting, price elasticity analysis, and customer segmentation, this report provides actionable recommendations to help Zach adopt a pricing strategy that ensures the venue's sustainability while staying true to its mission of supporting local artists and promoting inclusivity.

ANALYSIS AND RESULTS

To find the best pricing strategy for Zach's Garage, the analysis combined ticket price levels, attendance likelihood responses, and demographic data. Using the *Gabor-Granger method within Enginius' Pricing Optimization tool*, responses were converted into attendance probabilities. This enabled simulations of attendance, revenue, and profit at each price point, supporting a data-driven approach to balance financial sustainability with audience retention.

Question 1

Assuming that the data contains a representative sample of Zach's Garage customer base, what price level would maximize expected revenues (profits)? Assume that the average attendance is now about 250 per night, with an average of 12 events per month, would that optimal price be sufficient to cover Zach's costs of $3,000 per month?

Model Setup

To determine the price that would maximize expected revenue, assuming 250 attendees per event and 12 events per month, the Enginius Pricing Optimization tool was configured using inputs aligned with the case study. The 5-point likelihood scale from the survey was mapped to attendance probabilities, and the six ticket prices *($1, $3, $5, $8, $12, and $20*) were entered for analysis. Respondent data—including individual likelihood ratings and demographic details—was uploaded to capture price sensitivity accurately. The total market size was set to 3,000 attendees per month, and a *fixed monthly cost of $3,000* was included to reflect Zach's financial deficit (*see Exhibit A1).* These inputs allowed the model to simulate attendance, revenue, and profit across price points, forming the basis for identifying the optimal pricing strategy.

Model Selection and Fit

Enginius tested multiple models and selected a logit model with ceiling, intercept, and linear and logarithmic price terms as the best fit. The model estimated a *96%* market ceiling and showed strong fit based on BIC *(689.19)*, McFadden R-squared *(0.3873),* RMSE *(0.0028)*, and R-squared *(1.0002)*, effectively representing the survey data

Output and Interpretation

The results of the pricing optimization show how various ticket prices affect attendance, revenue, and profitability, as displayed in *Exhibit A2*. The model predicted the *highest attendance likelihood (86.4%)* at the lowest price point of $1, which led to the sale of 2,591 units. However, there was a $408.63 gross loss due to this price level's inadequate revenue generation. With 1,580 anticipated attendees, $4,740.94 in revenue, and a $1,740.94 gross profit, raising the price to $3 greatly enhanced performance. Attendance dropped to 856 units, but profit stayed positive at $1,277.76 $5. After that, attendance and profitability drastically decreased, especially at $8 and higher.

To balance volume and value, the model finally determined that ***$3.31*** was the ideal ticket price. Zach's Garage could draw about 1,439 people at this level, generating *$4,768.42 in monthly reve*nue and *$1,768.42 in gross profit*, comfortably surpassing the fixed monthly cost of $3,000. This result shows that the most advantageous flat-rate pricing approach maximizes revenue while maintaining operational sustainability. These results provide a good starting point for investigating more complex pricing schemes that complement Zach's goal of promoting community access and inclusion.

Question 2

Assuming that attendance is currently around 250 per event, at what price level would that attendance decrease to an average of 125? That is, at what price would half the attendees stop coming because of the entrance fee?

The same predictive pricing model used in Question 1 was used to investigate the price point at which attendance would drop from the current average of *250 to roughly 125 attendees per event*. The predicted purchase likelihood curve, which simulates how shifts in ticket prices affect buyers' propensity to attend, is the primary focus of the analysis. The goal was to determine the price at which the expected attendance likelihood *falls to about 50%, since 125 attendees represent 50% of the entire market size*. The predicted likelihood curve, which follows a traditional downward-sloping demand pattern—as ticket prices rise, the likelihood of attendance falls—plots price on the x-axis and attendance probability on the y-axis, as shown in Exhibit D1. According to the model, the probability of attendance is high at *$1 (86.4%),* drops to roughly *52.7% at $3*, and then drops even more to *45.3% at $3.50*. According to these numbers, the 50% attendance threshold, or 125 people per event, is below the $3 price point. The data in *Exhibit A4* and the visual trend in *Exhibit A3* demonstrate a discernible drop in attendance around the $3 level, further corroborating this conclusion.

In conclusion, the model shows that setting ticket prices at about $3 would cause attendance to drop from 250 to 125 people, indicating a crucial tipping point where price sensitivity becomes noticeably more noticeable. This emphasizes the importance of maintaining accessibility and audience engagement while balancing pricing for revenue generation.

Question 3

Looking at the figure "(expected) Revenues", at what price level would Zach exactly cover his monthly costs?

To determine the *minimum ticket price required to cover Zach's monthly operating expenses of $3,000***,** the analysis utilizes the same predictive model outputs referenced in Questions 1 and 2. The goal is to identify the *break-even price*—the point at which total revenue exactly offsets fixed costs, resulting in *zero gross profit***.** This threshold is essential for understanding the *lowest sustainable price* Zach can charge without incurring losses.

The *Enginius Price Optimization graph (see Exhibit A3*) visually depicts this break-even scenario, highlighting three core components: the *blue revenue curve***,** *a horizontal red cost line* fixed at $3,000, and the *green area* representing gross profit (the gap between revenue and cost). As ticket prices rise, the model estimates shifts in ticket sales volume, revenue, and resulting profitability. The intersection of the revenue curve and the cost line marks the break-even point. According to the output table *(see Exhibit A4*), pricing tickets at *$1* results in *2,591 sales and $2,591.37 in revenue*, falling short of break-even by $408.63. Increasing the price to *$1.50* leads to slightly lower sales ***(****2,349 ticket***s****) but generates $3,523.03 in revenue*, which surpasses the $3,000 cost, yielding a *positive gross profit of $523.03*. This suggests the ***break-even price lies between $1.00 and $1.50***, most likely around *$1.45 to $1.49*.

In conclusion, Zach would need to price tickets ***just below $1.50*** to fully cover his monthly costs. While the model doesn't offer precise pricing increments between $1 and $1.50, the results clearly show that pricing below this threshold results in a loss, while modest increases beyond it begin to generate profit. This break-even point serves as a critical pricing floor for any strategy aiming at financial sustainability.

Question 4

Zach does not want to lose the youngest customers, who are often students. Assuming that he does not charge an entrance fee to people 21 or younger, what would be the optimal pricing strategy to maximize revenues? What would be the total attendance at that price level?

Model Setup
To address the fourth question—determining the optimal pricing strategy when customers aged 21 or younger attend for free—the analysis follows the same modelling approach used in earlier questions, with a

key modification: only survey responses from individuals aged 22 and above are used in the predictive model *(see Exhibit B1).* This reflects the assumption that only older attendees represent the paying segment, while younger attendees are excluded from the pricing impact. Although this segmentation simplifies the analysis, it's important to note that in real-world scenarios, younger audiences might still be indirectly influenced by pricing decisions. Initially, the total *monthly market size was set at 3,000 attendees* (250 per event × 12 events). Since approximately one-third of the audience—or 1,000 individuals—are aged 21 or under and granted free entry, the effective paying market was adjusted *to 2,000 individuals.* This revised figure was used as the market size for the pricing simulation. Meanwhile, *Zach's fixed operating cost of $3,000 per month remains unchanged*, as the free-entry policy does not lower venue expenses. This setup allows the model to assess revenue and profit outcomes from the paying segment while keeping the venue inclusive for younger attendees.

Model Output & Interpretation
Using the refined model that includes only respondents aged 22 and above, the logistic regression analysis estimates attendance probabilities across different ticket prices for the paying segment. According to the model's results *(refer to Exhibits B2, B3, and B4),* the optimal ticket price is identified as *$3.57*. At this price, Zach's Garage is projected to generate the highest *gross profit of $659.21*, which also corresponds to the *maximum revenue of $3,659.21*. The expected turnout among paying customers is 1,024, *representing 51.2% of the 2,000 adults in the adjusted market*. When factoring in the 1,000 younger attendees who are granted free entry, the overall attendance is estimated to be 2,024 individuals. This strategy achieves a favourable balance between revenue generation and accessibility, allowing Zach to maintain strong engagement with his student audience while ensuring operational sustainability.

Question 5

Assume that instead of allowing the youngest customers to attend for free, Zach decides instead to charge a lower price by offering a discount. What is the price that would maximize profit for the younger segment of the population? How much additional profit would that bring in? Compare that figure to the one you obtained for Question 1 and explain the differences. What would be the impact on attendance? Would you recommend such strategy to Zach?

To assess the fifth question, the pricing model was adjusted to focus exclusively on the youth segment by isolating responses from participants aged 21 or younger *(see Exhibit C1*). This group represents the discounted segment, and the corresponding market size was set at 1,000 individuals, representing one-third of the overall audience. Since *Zach's fixed monthly costs of $3,000* are already fully recovered through revenue from adult ticket sales *(see Question 4*), these costs were excluded from this part of the analysis. As a result, any revenue generated from youth ticket sales is considered net profit.

According to the model output *(see Exhibits C2 and C3*), the optimal ticket price for the youth segment is $2.60, generating a maximum revenue—and thus *gross profit—of $1,167.18*. At this price, the predicted attendance rate among youth is 45%, equating to *450 attendees out of 1,000.* When this profit is added to the $659.21 already gained from the adult segment *(see Exhibit B2*), Zach achieves a combined *gross profit of approximately $1,826.39*. In comparison, the single-price strategy used in *Question 1* produced a *total profit of $1,768.42*, meaning the segmented discount approach yields an *additional $57.97, or a 3.3% increase in overall profit*. This highlights the advantage of audience segmentation and targeted pricing over both free-entry and flat-rate models. Under this dual-pricing strategy, expected attendance includes *1,024 adults (51.2% of 2,000) and 450 youth (45% of 1,000)*, leading to a combined audience of 1,474 attendees. This represents a modest increase of 35 additional attendees compared to the 1,439 total attendees under the uniform pricing strategy from Question 1.

To conclude, implementing a segmented pricing strategy by offering a *$2.60 ticket for the youth segment leads to a total gross profit of $1,826.39—an increase of 3.3% compared to the uniform pricing approach.* This strategy also boosts attendance by 35 individuals, indicating that differentiated pricing not only improves profitability but also helps expand overall audience engagement.

RECOMMENDATIONS

Zach's vision for his venue centers on inclusivity, community support, and ensuring access to live music for all. As such, his pricing strategy should not focus solely on maximizing profit but instead strike a balance between financial viability and broad audience participation. Based on the pricing analysis, the following recommendations are made:

Option 1: Tiered Pricing for Broader Engagement
A two-tier pricing structure—$2.00 for adults and $1.00 for youth—offers both financial stability and greater community engagement. With this strategy, adult attendance rises to 77.2% *(see Exhibit B4)*, and youth participation is maintained with a symbolic fee instead of free entry. While a $2.60 youth ticket would maximize profit, the $1.00 fee avoids overcrowding and supports sustainable growth. This model generates approximately $3,088.40 from adults and $718.43 from youth, totalling $3,806.83 in revenue. Although slightly lower than the $4,826.39 from a strict profit-maximizing strategy (with $3.57 for adults and $2.60 for youth), it promotes higher attendance and long-term brand equity.

Option 2: Accessible Flat-Rate Pricing
Setting a uniform ticket price at $1.50 *(see Exhibit A4)* results in a gross profit of $523.03 while maintaining 78.3% attendance. Although this is less profitable than the $3.31 optimal price (which yields $1,768.42 at 51.2% attendance), the lower price ensures Zach's $3,000 monthly costs are met and supports his mission by making events more affordable for a wider audience. This model emphasizes accessibility and is well-aligned with the venue's community-oriented goals.

Option 3: Focused Pricing for Adult Segment
For a more mission-aligned strategy, Zach may continue to offer free access to attendees aged 21 and under, while pricing only the adult (22+) group. Charging adults $2.00 brings in just over $3,000, covering the venue's monthly costs. Though profits are minimal, this approach significantly increases adult attendance to 77.2%, compared to 51.2% at the higher $3.57 ticket. A fuller house enhances the atmosphere, supports the performers, and encourages organic growth through community engagement and word-of-mouth promotion.

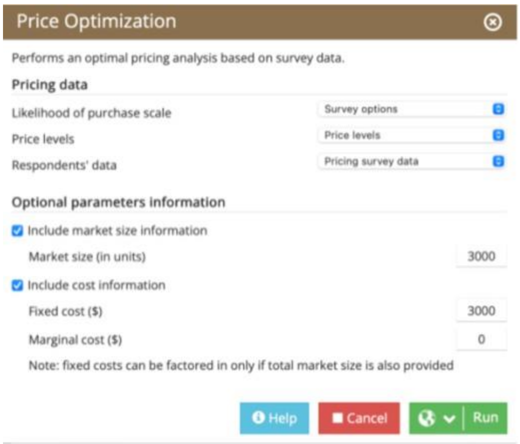
These three strategies offer varying degrees of profitability, accessibility, and audience engagement. Zach's ultimate decision should reflect his long-term priorities—whether leaning toward financial margin or deepening community reach and inclusivity.

CONCLUSION

In conclusion, unless Zach's long-term priorities shift toward aggressive revenue growth for purposes such as expansion or increased artist compensation, a profit-maximization strategy may not be the most suitable path. Instead, his pricing decisions should reflect his core mission—promoting inclusivity, encouraging diverse audience participation, and maintaining financial stability. A model that enables Zach's Garage to break even or earn a modest profit while supporting a welcoming, artist-friendly environment remains most consistent with his founding vision.

Of the strategies explored, both the *flat $1.50 ticket* model and *the segmented $2.00 for adults / $1.00 for youth* approach best reflect these values. Additionally, the adults-only pricing model—charging only those aged 22 and above while allowing free entry for younger attendees—also provides a feasible and community-aligned route to operational sustainability. Each of these options presents a practical balance between maintaining community engagement and meeting financial needs. By implementing one of these strategies, Zach can cultivate a dedicated audience, uplift emerging artists, and foster long-term growth through strong local support and word-of-mouth promotion.

EXHIBITS



	Prices	Predicted likelihood	Units sold	Revenue	Cost	Gross profit
Level 1	1	86.4%	2 591	2 591.37	3 000.00	-408.63
Level 2	3	52.7%	1 580	4 740.94	3 000.00	1 740.94
Level 3	5	28.5%	856	4 277.76	3 000.00	1 277.76
Level 4	8	11.8%	353	2 822.33	3 000.00	-177.67
Level 5	12	4.2%	125	1 505.61	3 000.00	-1 494.39
Level 6	20	0.7%	22	449.91	3 000.00	-2 550.09
Max gross profit	3.31	48.0%	1 439	4 768.42	3 000.00	1 768.42
Max revenue	3.31	48.0%	1 439	4 768.42	3 000.00	1 768.42

Optimization results.

Exhibit 1.1 *Exhibit 1.2*

Exhibit 1.1 Enginius Pricing Optimization Tool Configuration

Exhibit 1.2: Revenue and Profit by Ticket Price (Flat Pricing)

	Prices	Predicted likelihood	Units sold	Revenue	Cost	Gross profit
Level 1	1	86.4%	2 591	2 591.37	3 000.00	-408.63
Level 2	1.5	78.3%	2 349	3 523.03	3 000.00	523.03
Level 3	2	69.5%	2 086	4 171.23	3 000.00	1 171.23
Level 4	2.5	60.8%	1 825	4 561.76	3 000.00	1 561.76
Level 5	3	52.7%	1 580	4 740.94	3 000.00	1 740.94
Level 6	3.5	45.3%	1 360	4 759.85	3 000.00	1 759.85
Level 7	4	38.9%	1 166	4 665.03	3 000.00	1 665.03
Level 8	4.5	33.3%	999	4 494.62	3 000.00	1 494.62
Level 9	5	28.5%	856	4 277.76	3 000.00	1 277.76
Level 10	5.5	24.5%	734	4 035.64	3 000.00	1 035.64

Exhibit 1.3: Revenue and Profit Curves with Break-Even Threshold

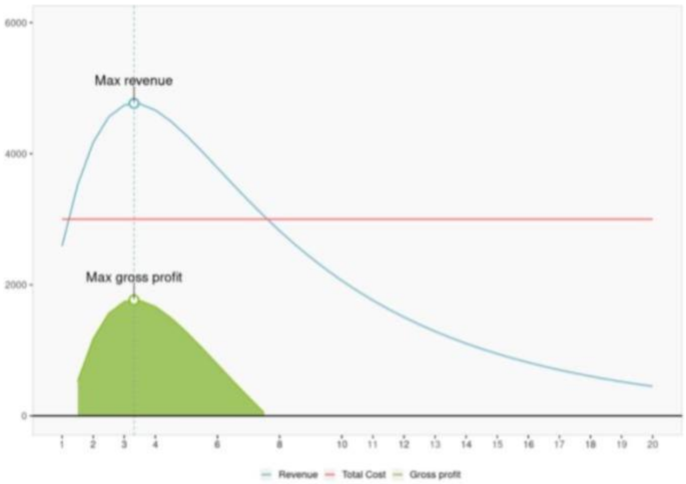
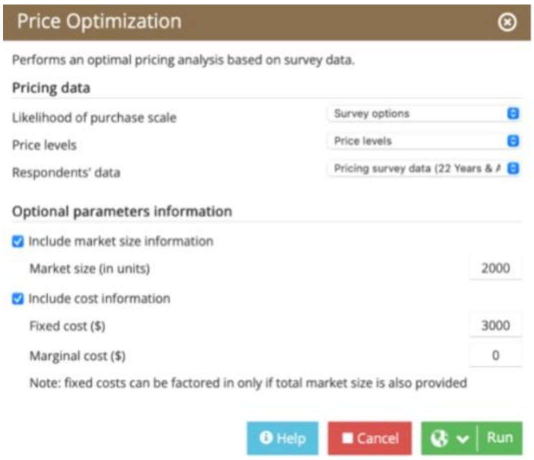


Exhibit 1.4: Pricing Strategy Simulation Output for Younger Segment.



	Prices	Predicted likelihood	Units sold	Revenue	Cost	Gross profit
Level 1	1	93.4%	1 867	1 867.38	3 000.00	-1 132.62
Level 2	3	60.0%	1 199	3 597.47	3 000.00	597.47
Level 3	5	34.2%	683	3 415.33	3 000.00	415.33
Level 4	8	14.8%	297	2 372.94	3 000.00	-627.06
Level 5	12	5.2%	105	1 259.01	3 000.00	-1 740.99
Level 6	20	0.8%	15	303.65	3 000.00	-2 696.35
Max gross profit	3.57	51.2%	1 024	3 659.21	3 000.00	659.21
Max revenue	3.57	51.2%	1 024	3 659.21	3 000.00	659.21

Optimization results.

Exhibit 2.1 *Exhibit 2.2*

Exhibit 2.1: Enginius Tool Configuration – Youth Segment Simulation

Exhibit 2.2: Revenue and Profit Table – Pricing Impact for Attendees Aged ≤21

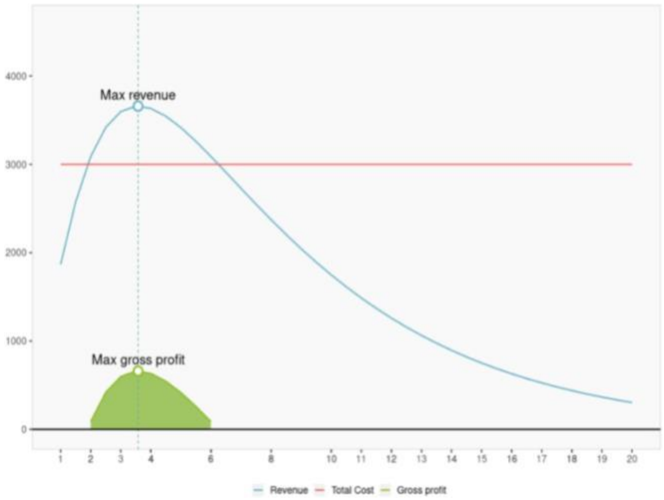
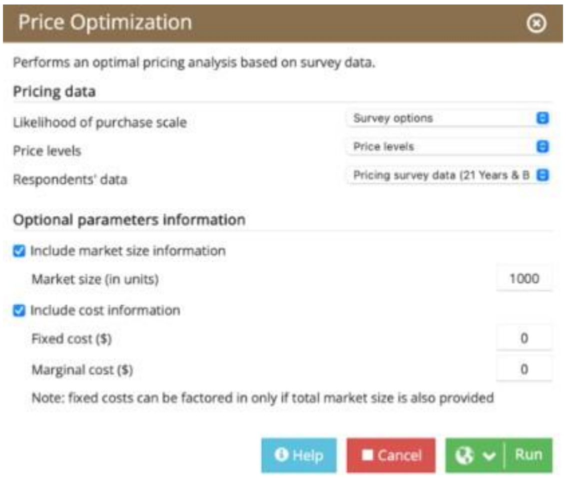


Exhibit 2.3: Revenue and Gross Profit Curves with Break-Even Overlay (Youth Segment)

	Prices	Predicted likelihood	Units sold	Revenue	Cost	Gross profit
Level 1	1	93.4%	1 867	1 867.38	3 000.00	-1 132.62
Level 2	1.5	85.9%	1 717	2 575.87	3 000.00	-424.13
Level 3	2	77.2%	1 544	3 088.40	3 000.00	88.4
Level 4	2.5	68.4%	1 368	3 418.82	3 000.00	418.82
Level 5	3	60.0%	1 199	3 597.47	3 000.00	597.47
Level 6	3.5	52.3%	1 045	3 658.27	3 000.00	658.27
Level 7	4	45.4%	908	3 632.14	3 000.00	632.14
Level 8	4.5	39.4%	788	3 544.54	3 000.00	544.54
Level 9	5	34.2%	683	3 415.33	3 000.00	415.33
Level 10	5.5	29.6%	593	3 259.44	3 000.00	259.44

Exhibit 2.4: Predicted Likelihood, Revenue, and Attendance Breakdown by Price (Youth Segment)



	Prices	Predicted likelihood	Revenue per market unit	Units sold	Revenue
Level 1	1	71.8%	0.72	718	718.43
Level 2	3	38.3%	1.15	383	1 147.85
Level 3	5	16.3%	0.82	163	816.03
Level 4	8	5.5%	0.44	55	439.48
Level 5	12	2.0%	0.24	20	243.81
Level 6	20	0.7%	0.15	7	148.69
Max revenue	2.6	45.0%	1.17	450	1 167.18

Optimization results.

Exhibit 3.1 *Exhibit 3.2*

Exhibit 3.1: Enginius Tool Configuration – Senior Segment Simulation
Exhibit 3.2: Revenue and Profit Table Pricing Outcomes for Attendees Aged 60+

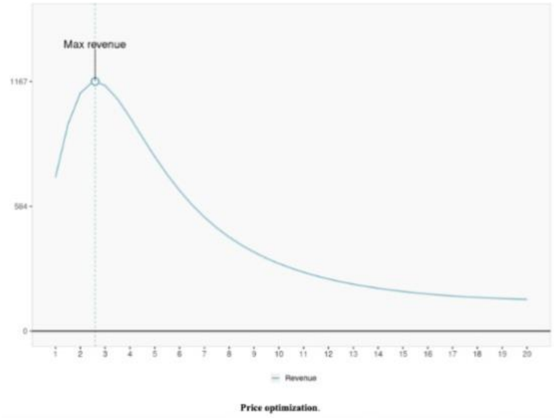


Exhibit 3.3: Gross Profit Curve Across Price Points – Senior Segment

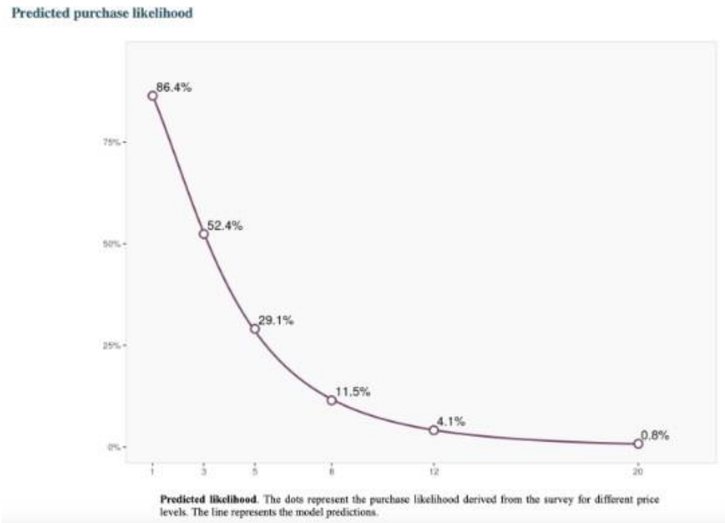


Exhibit 3.4: Predicted Purchase Likelihood Curve – Senior Segment