Homework Assignment 8
Conjoint Analysis

Data Preparation

Theater Size	Movie Selection	Location	Preference	small	medium	all current movies	some current movies	mall	plaza
small	all current movies	mall	6.523809524	1	0	1	0	1	0
medium	all current movies	mall	7.666666667	0	1	1	0	1	0
large	all current movies	mall	8.095238095	0	0	1	0	1	0
small	some current movies	mall	4.952380952	1	0	0	1	1	0
medium	some current movies	mall	5.19047619	0	1	0	1	1	0
large	some current movies	mall	6.142857143	0	0	0	1	1	0
small	only current popular movies	mall	5.476190476	1	0	0	0	1	0
medium	only current popular movies	mall	6.666666667	0	1	0	0	1	0
large	only current popular movies	mall	6.904761905	0	0	0	0	1	0
small	all current movies	stand-alone	6.142857143	1	0	1	0	0	0
medium	all current movies	stand-alone	6.857142857	0	1	1	0	0	0
large	all current movies	stand-alone	7.80952381	0	0	1	0	0	0
small	some current movies	stand-alone	3.714285714	1	0	0	1	0	0
medium	some current movies	stand-alone	5.428571429	0	1	0	1	0	0
large	some current movies	stand-alone	5.333333333	0	0	0	1	0	0
small	only current popular movies	stand-alone	4.476190476	1	0	0	0	0	0
medium	only current popular movies	stand-alone	5.80952381	0	1	0	0	0	0
large	only current popular movies	stand-alone	6.761904762	0	0	0	0	0	0
small	all current movies	plaza	5.761904762	1	0	1	0	0	1
medium	all current movies	plaza	7.142857143	0	1	1	0	0	1
large	all current movies	plaza	7.904761905	0	0	1	0	0	1
small	some current movies	plaza	4.666666667	1	0	0	1	0	1
medium	some current movies	plaza	5.904761905	0	1	0	1	0	1
large	some current movies	plaza	5.666666667	0	0	0	1	0	1
small	only current popular movies	plaza	4.380952381	1	0	0	0	0	1
medium	only current popular movies	plaza	5.952380952	0	1	0	0	0	1
large	only current popular movies	plaza	6.619047619	0	0	0	0	0	1

Data Preparation (Dummy Encoding)

Theater Size	Movie Selection	Location	Used in Dummy Encoding
small	all current movies	mall	Y
medium	some current movies	plaza	Y
large	only current popular movies	standalone	N

Linear Regression Analysis

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.967212269	96.72%						
R Square	0.935499573	93.55%						
Adjusted R Square	0.916149445	91.61%						
Standard Error	0.328549702							
Observations	27							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	6	31.31216931	5.218694885	48.34591146	7.28951E-11			
Residual	20	2.158898127	0.107944906					
Total	**26**	**33.47106744**						

Features	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95%2	Upper 95%3
Intercept	6.368606702	0.16728932	38.069416	3.87218E-20	6.019647303	6.717566101	6.019647303	6.717566101
small	-1.682539683	0.154879815	-10.86351819	7.72162E-10	-2.005613308	-1.359466057	-2.005613308	-1.359466057
medium	-0.513227513	0.154879815	-3.313714667	0.003465527	-0.836301139	-0.190153888	-0.836301139	-0.190153888
all current movies	1.206349206	0.154879815	7.788937568	1.75744E-07	0.883275581	1.529422832	0.883275581	1.529422832
some current movies	-0.671957672	0.154879815	-4.338574873	0.000318806	-0.995031298	-0.348884046	-0.995031298	-0.348884046
mall	0.587301587	0.154879815	3.791982763	0.001143719	0.264227962	0.910375213	0.264227962	0.910375213
plaza	0.185185185	0.154879815	1.195670241	0.245809908	-0.13788844	0.508258811	-0.13788844	0.508258811

Profiling Based on the size of the theater, location of the theater, movie selection

Sr.No	Profiles	small	Movie Selection	Location	Intercept	Theater Size Score	Movie Selection Score	Location Score	Utilitty Score	% Importance	Ranking
Profile-1	Small theatre / Carries all current movies / In a mall	small	all current movies	mall	6.368606702	-1.682539683	1.206349206	0.587301587	6.479717813	3.95%	9
Profile-2	Medium-sized theatre / Carries all current movies / In a mall	medium	all current movies	mall	6.368606702	-0.513227513	1.206349206	0.587301587	7.649029982	4.67%	3
Profile-3	Large theatre / Carries all current movies / In a mall	large	all current movies	mall	6.368606702	0	1.206349206	0.587301587	8.162257496	4.98%	1
Profile-4	Small theatre / Carries some current movies, but not all / In a mall	small	some current movi	mall	6.368606702	-1.682539683	-0.671957672	0.587301587	4.601410935	2.81%	25
Profile-5	Medium-sized theatre / Carries some current movies, but not all / In a mall	medium	some current movi	mall	6.368606702	-0.513227513	-0.671957672	0.587301587	5.770723104	3.52%	18
Profile-6	Large theatre / Carries some current movies, but not all / In a mall	large	some current movi	mall	6.368606702	0	-0.671957672	0.587301587	6.283950617	3.83%	12
Profile-7	Small theatre / Carries only current popular movies / In a mall	small	only current popula	mall	6.368606702	-1.682539683	0	0.587301587	5.273368607	3.22%	21
Profile-8	Medium-sized theatre / Carries only current popular movies / In a mall	medium	only current popula	mall	6.368606702	-0.513227513	0	0.587301587	6.442680776	3.93%	10
Profile-9	Large theatre / Carries only current popular movies / In a mall	large	only current popula	mall	6.368606702	0	0	0.587301587	6.955908289	4.24%	7
Profile-10	Small theatre / Carries all current movies / Stand-alone location	small	all current movies	stand-alone	6.368606702	-1.682539683	1.206349206	0	5.892416226	3.59%	15
Profile-11	Medium-sized theatre / Carries all current movies / Stand-alone location	medium	all current movies	stand-alone	6.368606702	-0.513227513	1.206349206	0	7.061728395	4.31%	6
Profile-12	Large theatre / Carries all current movies / Stand-alone location	large	all current movies	stand-alone	6.368606702	0	1.206349206	0	7.574955908	4.62%	4
Profile-13	Small theatre / Carries some current movies, but not all / Stand-alone location	small	some current movi	stand-alone	6.368606702	-1.682539683	-0.671957672	0	4.014109347	2.45%	27
Profile-14	Medium-sized theatre / Carries some current movies, but not all / Stand-alone location	medium	some current movi	stand-alone	6.368606702	-0.513227513	-0.671957672	0	5.183421517	3.16%	22
Profile-15	Large theatre / Carries some current movies, but not all / Stand-alone location	large	some current movi	stand-alone	6.368606702	0	-0.671957672	0	5.69664903	3.47%	19
Profile-16	Small theatre / Carries only current popular movies / Stand-alone location	small	only current popula	stand-alone	6.368606702	-1.682539683	0	0	4.686067019	2.86%	24
Profile-17	Medium-sized theatre / Carries only current popular movies / Stand-alone location	medium	only current popula	stand-alone	6.368606702	-0.513227513	0	0	5.855379189	3.57%	17
Profile-18	Large theatre / Carries only current popular movies / Stand-alone location	large	only current popula	stand-alone	6.368606702	0	0	0	6.368606702	3.88%	11
Profile-19	Small theatre / Carries all current movies / In a plaza	small	all current movies	plaza	6.368606702	-1.682539683	1.206349206	0.185185185	6.077601411	3.71%	13
Profile-20	Medium-sized theatre / Carries all current movies / In a plaza	medium	all current movies	plaza	6.368606702	-0.513227513	1.206349206	0.185185185	7.24691358	4.42%	5
Profile-21	Large theatre / Carries all current movies / In a plaza	large	all current movies	plaza	6.368606702	0	1.206349206	0.185185185	7.760141093	4.73%	2
Profile-22	Small theatre / Carries some current movies, but not all / In a plaza	small	some current movi	plaza	6.368606702	-1.682539683	-0.671957672	0.185185185	4.199294533	2.56%	26
Profile-23	Medium-sized theatre / Carries some current movies, but not all / In a plaza	medium	some current movi	plaza	6.368606702	-0.513227513	-0.671957672	0.185185185	5.368606702	3.27%	20
Profile-24	Large theatre / Carries some current movies, but not all / In a plaza	large	some current movi	plaza	6.368606702	0	-0.671957672	0.185185185	5.881834215	3.59%	16
Profile-25	Small theatre / Carries only current popular movies / In a plaza	small	only current popula	plaza	6.368606702	-1.682539683	0	0.185185185	4.871252205	2.97%	23
Profile-26	Medium-sized theatre / Carries only current popular movies / In a plaza	medium	only current popula	plaza	6.368606702	-0.513227513	0	0.185185185	6.040564374	3.68%	14
Profile-27	Large theatre / Carries only current popular movies / In a plaza	large	only current popula	plaza	6.368606702	0	0	0.185185185	6.553791887	4.00%	8
								Total	163.952381		

Relative Importance Scoring based on Factors (size of theater, location of theater, movie selection)

Factors	Max - Min	Relative Importance Score
Theater Size	1.682539683	42.46%
Movie Selection	1.878306878	47.40%
Location	0.402116402	10.15%
Total	3.962962963	100%

1. To what extent each attribute (size of theater, location of theater, movie selection) is important to the respondents? Explain.

Based on the conjoint analysis it can be inferred that **_movie selection_** is the most important attribute for the respondents, as it has the highest percentage of importance **47.40%** among the three attributes (size of theater, location of theater, and movie selection). The **_size of the theater_** is the second most important attribute, with a percentage of **42.46%**, while the **_location_** of the theater is the least important, with a percentage of **10.15%**. This suggests that the respondents prioritize the movie selection over the theater's size and location. These findings provide valuable insights for theater operators and stakeholders in understanding consumer preferences and tailoring their offerings to better meet customer demands.

Based on the preferences revealed by the conjoint analysis, emphasizing a diverse and compelling movie selection, coupled with attention to the size and amenities of the theater itself, is crucial for attracting and retaining audiences. While location matters, it's less important compared to movie variety and theater amenities. By focusing on offering a wide range of movies and ensuring the theater is comfortable and well-equipped, cinemas can better meet customer expectations and build loyalty.

2. For each attribute, which levels/values do the respondents prefer the most and the least? Explain.

Based on the regression analysis results, it seems that certain factors influence respondents' preferences in terms of theater size, movie selection, and location.

Theater Size
✓ The analysis suggests that respondents tend to prefer **_larger theaters_** over smaller ones. This could be due to various reasons such as more seating options, a wider range of facilities, or a perception of a better overall experience.
✓ If a large theater is not available, the next preferred option is a **_medium-sized theater_**. This indicates that while respondents prioritize larger theaters, they are still open to settling for a medium-sized one if a large one isn't available.
✓ **_Small-sized theaters_** are the least preferred among the options provided, possibly because they may offer limited amenities or a less immersive experience compared to larger venues.

Movie Selection
✓ The analysis suggests that respondents show a preference for theaters that offer **_all current movies_**. This suggests a desire for a diverse range of currently released movie options, including both popular blockbusters and smaller releases.
✓ If all current movies are not available, the next preferred option is theaters that offer **_only current popular movies_**. This implies that respondents prioritize access to the latest and most in-demand films.
✓ The least preferred option is theaters that offer only **_some current movies_**, indicating a preference for comprehensive movie selections rather than a limited choice.

Location
✓ The analysis suggests that respondents favor theaters located within **_malls_**. This preference may be due to the convenience of accessing other amenities and services within the mall complex, such as restaurants, shopping outlets, and parking facilities.
✓ If a mall location is not available, the next preferred option is theaters located within **_plazas_**. Plazas may offer similar conveniences to malls, although potentially on a smaller scale.
✓ The least preferred location option is **_stand-alone_** theaters, which suggests that respondents prioritize theaters that are part of larger, integrated complexes rather than standalone venues.

These findings provide valuable insights for theater operators and stakeholders in understanding consumer preferences and tailoring their offerings to better meet customer demands. By prioritizing factors such as theater size, movie selection, and location based on these regression analysis results, theaters can enhance the overall movie-going experience and attract a broader audience.

3. What are the managerial implications of these results? In other words, what actions would you recommend the manager of Cinemas to take to improve their business performance?

Based on the results,

- ✓ *__Movie Selection:__* Prioritize offering a diverse range of movies to cater to different tastes. Collaborate with distributors for exclusive content and regularly update the selection to keep it fresh and appealing.

- ✓ *__Theater Size and Comfort:__* Invest in comfortable seating, top-notch sound, and projection systems. Consider expanding theater sizes or optimizing seating arrangements to enhance comfort and accommodate more viewers comfortably.

- ✓ *__Location Accessibility:__* While not the top priority, ensure theaters are easily accessible. Improve transportation links and provide ample parking space to enhance convenience for customers.

- ✓ *__Customer Service:__* Train staff to be friendly, attentive, and responsive to customer needs. Create a positive customer experience to encourage repeat visits.

- ✓ *__Promotions and Loyalty Programs:__* Implement loyalty programs and special offers to reward repeat customers and build long-term relationships. Utilize social media and online platforms to engage with customers and promote upcoming movies.

- ✓ *__Data Analytics and Feedback:__* Use surveys and data analytics to understand customer preferences and satisfaction levels. Continuously refine offerings based on feedback to meet evolving customer needs.

These recommendations could help Hyrule Cinema improve its business performance by aligning its strategies with the preferences of its customers and can create an enticing movie-going experience that appeals to a wide audience and fosters customer loyalty. Regular feedback from customers and continuous monitoring of performance metrics are also crucial for the successful implementation of these strategies.