### **Application Of Text Mining On Market Intelligence (Hotel)**

#### Introduction

Hotels are usually located in high density around popular districts of the countries. As there may be several hotels in the popular district, it is important for individual hotel to understand customers' service expectation and improve their service level so that their hotel can stand out above the rest to stay competitive and survived. Hargreaves (2015) explained that market environment for hotel is always challenging and evolved faster because of higher customers' disposable income and customer experience expectation. This will mean that other than the standard customers' hotel selection criteria on Brand image, implementation of customer retention programs and core offering or value of the hotel (Starkov & Price, 2007), it is also important to hear the voices of customers that reviewed their stay in the hotels. These voices are usually written in short sentences on the customers' review section of the hotel booking portal which are mostly unstructured data.

By applying text mining on these customer reviews, we can convert the texts into concepts through Parsing and evaluate the concepts and categories to form possible positive or negative insights. With these concepts, we will be able to estimate customers' common experience in each hotel stays. This insight will also help the hotel to understand the market environment and improve their internal process to match the competition.

In this paper, we will be analysing customers' review from one of the top ten most expensive and most reviewed hotel in London to discover any insight that hotels around the region can apply to improve their service level.

#### **Literature Review**

In reviewing the literature related to our research, Berezina et al. (2015) was selected as one of the papers that is like our research objective. Berezina K. et al. (2015) explained the methodology to identify patterns in hotel reviews using text mining and insights from results of satisfied and unsatisfied customers' patterns (concepts). These insights can be used as service and product improvement.

Berezina K. et al. (2015) selected Sarasota hotels' online hotel reviews from TripAdvisor.com as datasets for Texts link analysis because of its popularity in USA, smaller destination comparing with others and variety of tourism development in the city. For accommodation related properties, there are 31% hotels/motels, 7% apartments, 7% houses, 4% mobile homes, 2% campsites. There was a total of 2,510 reviews containing **Table 1** categories recorded in excel file. Reviews included 84.87% leisure travellers and 11.7% business travellers. The reviews are validated internally before analysis by finding the correlations of rating scores and recommendation scores. Berezina K. et al. (2015) will read 20 random reviews against reviewers recommend the hotel to confirm if the intention is aligned.

**TABLE 1** Hotel review categories

Field	Explanation
Quote	It contains a title of the guest review and in most cases the overall feeling about the hotel
Hotel name	Name of the observed hotel
User name	Username of the reviewer
Contributions	Contributions contains the number of review posted by a particular user on the TripAdvisor.com
Location	Location refers to the reviewer's residence
Trip type	Trip type includes different categories: business; couples; family; couples, family getaway; friends getaway; solo travel
Comment	Contains the review body in it
Value, rooms, location, cleanliness, service, and sleep quality	These fields contain numerical values that guests gave as rating scores to each of the categories named above. The values range from 1 ( <i>terrible</i> ) to 5 ( <i>excellent</i> ).
Date of stay	The date that reviewer stayed in the hotel
Visit type	Visit type contains the following categories: business; hobbies/interest/culture; honeymoon; leisure; personal event; quality time with family; romantic getaway; and other.
Travelers Age group	7, 3
Member since Recommendation	Refers to membership on TripAdvisor.com Recommendation contains categories "Yes" or "No" and represents likelihood of recommending this hotel to others.

Once the reviews are validated, comment section will undergo PASW Modeler to convert both positive and negative texts from tokens to concepts and categories will be formed by linking the extracted concepts to the categories in the NLP inbuilt vocabulary

list. This process is call NLP linguistic extraction. Concepts are categorised either positive or negative types with the support of business domain knowledge. In **Table 2**, Berezina K. et al. (2015) identified that business, room members, sports and furnishing were the top frequently mentioned positive categories. As for the negative categories, business, room, furnishing, member, and finance were mentioned. Berezina K. et al. (2015) noticed 63.1% of the customers that mentioned "staffs" in member category are satisfied with the staff service and would recommend the hotel to others. The result showed the need to focus on service level of the hotel business. For Finance category, customers' unhappiness was usually related to cost and pricing issues. In the next phase, Berezina K. et al. (2015) continue to apply text-link analysis on the online reviews to identify the relationship between concepts in **Figure 1** and **Figure 2**. The comparison of the text-line analysis is shown in **Table 3**.

Table 2
Word categorization for two groups of reviews

Pos	sitive recom	mendation		N	egative reco	ommendation	
Place of business	99.7			1. Place of business	99.3		
		Hotel	90.3			Hotel	94.6
		Restaurants	35.8			Restaurants	21.7
		Outlets	17.8			Outlets	7.6
		Club	12.2			Club	6.1
						Office	5.4
						Spa	2.5
2. Room	74.0			2. Room	81.9	5-	
3. Members	63.5			3. Furnishing	65.3		
J. IIIIIII	03.5	Staffing	63.1	<i>J.</i> 1 ag	03.3	Bed	31.4
		Hotel Personnel	17.3			Carpet	10.8
		Waiter	7.7			Towels	9.4
		Housekeeper	6.3			Chairs	6.9
		Friendly staff	2.4			Table	6.1
4. Sports	53.5	Thenery starr	2.4	4. Member	58.8	Table	0.1
4. Sports	33.3	Sports by type	53.1	4. Member	30.0	Employee	57.4
		sports by type	55.1			Hotel personnel	24.9
						Housekeeper	9.7
						Clerk	2.9
						Nice staff	0.7
5. Furnishing	48.3			5. Finance	44.4	Nice stair	0.7
3. Furnishing	40.5	Furniture	48.3	3. Filiance	44.4	Money	11.6
		Lamps	7.0			Charge	6.9
		Implements	6.2			Credit	5.1
		Carpet	3.0			Cost	3.1 4.7
6. Beach	43.1	Carpet	5.0	6. Sports	39.7	Cost	4./
0. Beach	45.1			0. spons	39.7	Sports by type	39.0
7. Food and table	36.4			7. Architecture	39.0	sports by type	39.0
7. Food and table	50.4	Meals	246	/. Architecture	59.0	Floor	20.2
			34.6				20.2
0. 4. 12	26.2	Menu	3.6	0.11	247	Balcony	5.1
8. Architecture	36.2	11	1/0	8. Human resources	34.7	D. G.	10.0
		Floor	16.9			Benefit	19.9
		Balcony	13.4			Careers	20.2
0.11	20.5	Tower	3.8	0.1.16	27 (	Education, Training	2.2
9. Family structure	28.5			9. Landforms	27.4		
<ol><li>Human resources</li></ol>	27.1			<ol><li>Family structure</li></ol>	24.2		

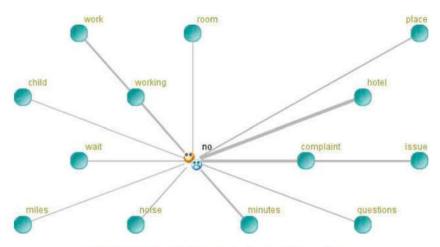


FIGURE 1 Text link analysis for positive reviews.

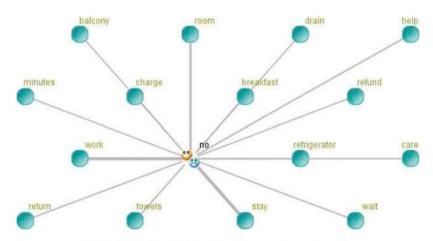


FIGURE 2 Text link analysis for negative reviews.

**Table 3**Comparison of text link analysis results

Recommendation							
	Yes		No				
No:	Child Wait Miles Noise Minutes Questions Complaint Issue	No:	Room, balcony, towels, fridge Drain Breakfast Refund Help Care Minutes Return Stay				

From **Table 3**, it may be difficult to understand the context meaning of linking "no" to concepts especially when it is repeated in Positive and Negative Type. However, the author can infer the following concepts.

- "No-question", "No-complaint", and "no-issue": Customers positive attitude towards hotel.
- "no-room", "no-balcony", "no-towels", "no-fridge", "no-drain" and "nobreakfast": Hotel services required improvement
- "No-help", "no-care", "no-return" and "no-stay": Customers disappointed and negative attitude towards hotel.

Based on the conclusion by Berezina et al. (2015), reviews on hotel room amenities and furnishing are frequently mentioned that will affect customers' satisfaction level. Hotel staff service performance are also another area that will affect the satisfaction result. The paper continues to explain that hotels should conduct online review text analysis on regular basis to monitor customer expectations constantly so that they can understand customers' voice and include action plans in the service improvement of the hotel. (Crick & Spencer, 2011)

To have a more complete research, text mining analysis can also include other booking platform (e.g., Booking.com) or countries for wider exposure on global trend on customers' satisfaction on hotel. It can also be used as competitor intelligence and analysis as explained in Köseoglu et al. (2021). With the insights from text mining, other hotels can develop new strategies to stay competitive in the industry.

Another area of interest can be having a new method to measure hotel service quality from online hotel reviews and ratings. Boon et al. (2014) used the frequency of concepts extracted from online reviews to obtain score for "Room", "Facilities", "Surroundings", "Employees" and "Reliability" and the scores can be studied over time to improve quality and focus on marketing communication. 1st type of the studies was to choose the most suitable service quality scale by assigning 48 comments randomly to the dimensions of the scale and compared between the researchers results to decide which scale to continue. The 2nd type of studies was to categorize the same 48 comments along with the dimension scale and explore which words in the reviews were representative of each dimension. The last type of studies was to obtain 10,000 TripAdvisor comments from 90 hotels in Northern Italy and ranked word of all the

comments based on overall frequency and assigned top 1000 words to a dimension. Irrelevant words were ignored or isolated if ambiguous.

In Boon et al. (2014) studies, they found in Study 1 (**Table 4**) that they cannot get a common understanding on the scoring when SERVQUAL dimensions were used but the results were consistent when HOLSERV dimensions were used.

Table 4
Study 1 Results Sample & Dimensions

(a) SERVQUAL dimensions (b) HOLSERV dimensions

Dimension	Description
a	
Tangibles	Physical facilities, equipment, and appearance of personnel
Reliability	Ability to perform the promised service dependably and accurately
Responsiveness	Willingness to help customers and provide prompt service
Assurance	Knowledge and courtesy of employees and their ability to inspire trust and confidence
Empathy	Caring, individualized attention the firm provides its customers
b	
Employees	Prompt service, willingness to help, confident in delivery of service, polite, knowledgeable, skillful, caring, understanding, sincere, neat and professional employees
Tangibles	Modern-looking equipment, fixtures and fittings, appealing facilities and materials, comfort, cleanliness, user-friendly equipment and facilities, variety in food and beverages, operation of services at a convenient time
Reliability	Keeping promises, accurate and timely service, safe and secure stay

#	Comment		r SERVQUAL					HC	LSE	RV
			T	R	R	A	E	E	T	R
1.	We had an extremely satisfying time here, and would certainly stay again. It ticked all the	A	X						X	
	boxes, and delivered everything you expect from a central London hotel of this price range,	В	X	$\mathbf{X}$					$\mathbf{X}$	$\mathbf{X}$
	and then some. Breakfast was a particular highlight, and one which we eagerly anticipate in the future	C	X	X			X		X	X
2.	We would like to thank [owner and staff] who looked after us so well on our recent trip back to	A	$\mathbf{X}$		X		X	X	$\mathbf{X}$	$\mathbf{X}$
	the [hotel] restaurant. Both the food and the service were of the highest standard and we	В	X	X	X	X		X	$\mathbf{X}$	$\mathbf{X}$
	greatly appreciated the special treatment, which is synonymous with [hotel]! We can't wait to return for another stay and sample the delicious food and superb surroundings. Many thanks again!	C	X		X	X	X	X	X	X

By applying HOLSERV dimensions on Study 2 (**Table 5**), the researchers scored the comments quite consistently and easily.

**Table 5**Study 2 Results & Dimensions

Dia	mension	Description			
Ro	om	Equipment, fixtures and fittings in the hotel room, se Cleanliness and user-friendliness	ervices availabl	e in the room.	
Fac	cilities	Facilities and services available in the hotel (outside restaurants and bars, pool and fitness/spa facilities		eakfast,	
Su	rroundings	Location of the hotel, proximity to amenities, public	transport and	attractions	
Em	ployees	General appearance and behavior of staff. Promptne neatness	ss, politeness, u	understanding,	
Reliability The willingness of staff to help guests in specific situations. The way they he requests and complaints					
_					
#	Comment		HOLSERV PI	us	
1.	We had an	extremely satisfying here, and would certainly stay	Room		
	-	It ticked all the boxes, and delivered everything you	Facilities	Breakfast	
		from a central London hotel of this price range, and	Surroundings		
		ome. Breakfast was a particular highlight, and one we eagerly anticipate in the future	Employees Reliability		
2.		like to thank [owner and staff] who looked after us so	Room		
		n our recent trip back. Both the food and the service	Facilities	Food	
		f the highest standard and we greatly appreciated the	Surroundings	Surroundings	
		treatment, which is synonymous with [hotel]! We	Employees	Service	
		rait to return for another stay and sample the delicious and superb surroundings. Many thanks again!	Reliability	Special treatment	

In Study 3, Boon et al. (2014) extracted large word frequency from TripAdvisor comments for hotels in Northern Italy and tried to assign top 1000 words of the list to a specific dimension. Due to many stop words, irrelevant words and ambiguous words, the authors could only consider 197 words for assignment as shown in **Table 6**.

**Table 6**Study 3 Results

Dimension	Words	10 highest-frequency words
Room	46	Room(s), clean, balcony, comfortable, bathroom, shower, bed, towels, spacious, (air) conditioning
Facilities	63	Food, breakfast, pool, view(s), restaurant, dinner, meal, buffet, buffet, terrace
Surroundings	54	Lake, Garda, location, walk, town, area, road, centre, local, shops
Employees	21	Staff, friendly, service, helpful, reception, welcome, welcoming, attentive, polite, rude
Reliability	13	Problem(s), manager, trouble, fault, complaint(s), requested, management, owner(s), issue, complained

From the above studies, the results will allow hotel managers to identify the quality improvement points and to guide internal discussion. The author suggested that this method should be used together with the regular service quality surveys because the analysis is fast and easy to implement especially hotel managers who do not have budget or knowledge to perform a survey.

## **Business Understanding**

Hotel industry has been a very competitive industry especially in a metropolitan city like London where several hotels are located nearby in the same city. To survive in this industry, hotel managers need to constantly review their service levels against other hotels in the region. By tapping on the available online sources like customer reviews, they will be able to obtain insights of various hotels and evaluate if the insights can be an improvement point to their hotels. In this project, we will apply Text Analytics to investigate one of the top 10 hotel in London, The Savoy, to discover any insights why the hotel has been very popular in the country.

### **Data Understanding**

In the dataset (Yu, 2022), we discovered that this dataset is a good fit to our Text mining project because it contained customers' review of London-based hotels as shown in **Table 7.** There are a total of 6 fields (Property Name, Review Rating, Review Title, Review Text, Location of the Reviewer, Date of Review) and 25,965 records in the datasets. There are a few languages in Review Text like Spanish, etc which could pose issues during text mining and need to be corrected and excluded in this text mining project as much as possible.

**Table 7**List of Hotels' Reviews

Value /	Proportion	%	Count
45 Park Lane - Dorchester Collection		0.72	187
A To Z Hotel		0.6	156
Apex London Wall Hotel		8.15	2116
Bulgari Hotel, London	]	1.68	436
City View Hotel		0.07	17
Corinthia Hotel London		10.46	2716
Hartley Hotel		0.16	41
Hotel Xenia, Autograph Collection		5.45	1414
London Guest House	]	0.95	247
Mandarin Oriental Hyde Park, London		4.43	1150
Marble Arch Hotel		0.13	33
Mondrian London at Sea Containers		16.15	4193
Newham Hotel	]	0.88	229
Rhodes Hotel		5.16	1341
Ridgemount Hotel		4.75	1234
The Dorchester		6.39	1659
The Lanesborough	]	1.2	312
The Rembrandt		10.92	2836
The Savoy		20.43	5304
The Wellesley Knightsbridge, a Luxury Collection Hotel, London	]	1.32	344

## **Data Preparation**

Before importing the dataset into the modeller, we removed all the non-English input of the "Review Text". After removal of the non-English input from the dataset, we imported the dataset into the SPSS modeller (**Figure 3**) to breakdown the text files into various fields for text mining. "Select" node was used to filter out empty fields in the dataset and select "The Savoy" for this mining project. (**Figure 5**)

Figure 3
Var File Node Setting to Import Text

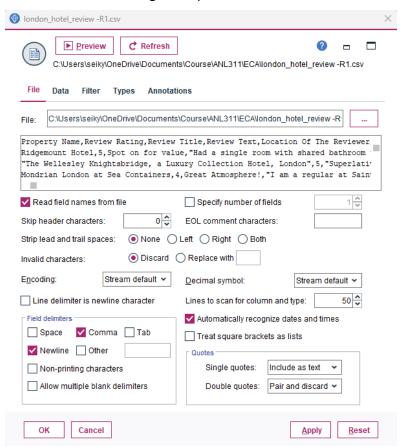


Figure 4
Initial Stream

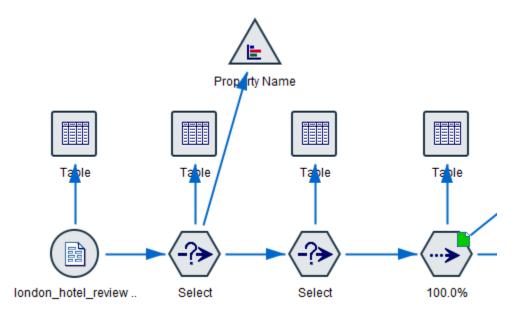
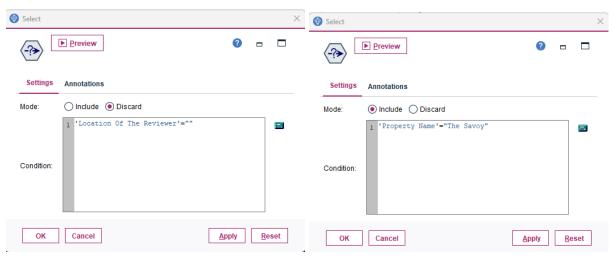
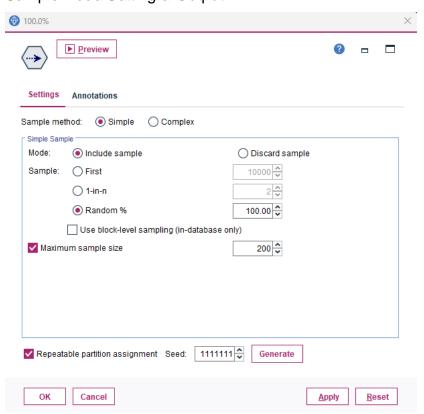


Figure 5
Select Node Settings



There are a total of 4,514 customer reviews for The Savoy in this dataset. As it will required long manhours to complete text mining of 4,514 customer reviews, we randomly sampled 200 records (Around 4%) for this mining projects using the "Sample" node as shown in **Figure 6**.

Figure 6
Sample Node Setting & Output



	Property Name	Review Rating Review Title	Review Text Location Of The Reviewer	Date Of Review
1	The Savoy	5 Beautiful breakfast	We booked a breakfast at the Thames Foyer of The Savoy, meeting with our daughter who is at Kings College, what a wonderful experience. The s United Kingdom	12/20/2011
	The Savoy	5 Elegance. Luxury.	We stayed at the Savoy for one night as part of a surprise celebration for my wife's birthday. Having arrived at 13:00 we were prepared to have to wa United Kingdom	1/2/2015
	The Savoy	5 As you expect	Great Hotel, service is excellent along with everything else you could expect from a UK 5*   After staying at many hotels around the world, I always r   Aarhus, Denmark	9/6/2013
4	The Savoy		One of the most impressive hotels I've ever stayed at!   So many little things that just makes you feel welcome and wanted as a guest.   Greeted at L Aarhus, Denmark	2/10/2016
	The Savoy	5 Super deluxe does means super pri	It's the 'Savoy' no detail left to chance, no extra left uncharged. I wish i was at an income bracket where I could stay at this class of hotel all the time Abbots Langley, United Kingdo	
6	The Savoy	5 Worth the stay	My husband and I went down to London to visit family, so we decided to treat ourselves to a little luxury and stay 3 nights in a deluxe room. We requ aberdeen	4/23/2013
7	The Savoy	4 4.5 stars	My friend had wanted to try the Savoy for some time so on this trip we booked rooms for Fri 30th Aug ?Sun 1st Sept.   We arrived late afternoon on t   Aberdeen	9/5/2013
	The Savoy	5 4.5 stars again	I tried the Savoy for the first time in September and returned again for four nights from 28th Nov - 2 Dec, this time opting for a luxury king room, rath   Aberdeen	12/17/2013
	The Savoy	1 Poor Show	Visited the Savoy Grill for Pre-Theatre Supper before performance of Gypsy. On the website it looked great value for money with 3 courses for less t Aberdeen, Scotland	5/8/2015
	The Savoy	1 Will Not be Returning	We stayed at the Savoy last year, a surprise birthday gift from my husband and even more of a celbration as I just discovered I was pregnant. The s Aberdeen, Scotland	6/30/2005
	The Savoy	1 Terrible	This hotel failed expectations . I have stayed at the competition 7 times and it has much better service, it<92>s miles better. I honestly do believe I   Aberdeen, United Kingdom	12/27/2017
	The Savoy	5 Iconic Hotel ideal for luxury breaks	Oozing historical elements of its art deco past and iconic visitors from jazz, cocktail and cultural eras, this hotel is ideally situated for visiting many   Aberdeen, United Kingdom	2/25/2018
	The Savoy	4 birthday treat	Birthday treat for my wife's 60th had a really enjoyable weekend ate in Savoy Grill food very good but quite expensive has cocktails in american bar Aberdeen, United Kingdom	3/20/2015
	The Savoy	5 An experience	As a 40th anniversary celebration we decided to fly to London and stay at the Savoy for 2 nights. Not a river view but a really nice room on floor 5. O Aberdeen, United Kingdom	8/17/2016
	The Savoy	5 Exclusive Birthday treat	The Savoy is one of the most famous and exclusive Hotels in London and certainly lives up to this status. Excellent location and staff very pleasant Aberdeen, United Kingdom	8/10/2015
	The Savoy	5 OUTSTANDING	My Mum and I stayed at the Savoy for 2 nights and we are still speaking about it two weeks later. We actually felt sad leaving.   If you can fit in an aft   Aberdeen, United Kingdom	7/15/2017
	The Savoy	5 Class act	Stayed a couple nights in an Edwardian suite, comfy & amp; posh, just what you'd expect. Well looked after; the other half was under the weather wi Aberdeen, United Kingdom	11/15/2016
	The Savoy	5 Fantastic Stay	When we where here my husband was poorly, and the staff where fantastic, the room was beautiful and everything else about the hotel is outstand Aberdeen, United Kingdom	12/4/2016
	The Savoy	5 Luxurious weekend stay at The Savoy	We stayed 4 nights in a jr suite which was absolutely fabulous. The room was large with a separate lounge room and a beautiful bathroom. Upon Aberdeenshire, United Kingdor	n 12/19/2013
20	The Savoy	5 Birthday celebrations	From the minute we arrived the staff were so helpful and nothing was too much trouble for them. A birthday cake delivered to the room (which was   Abertillery, United Kingdom	2/26/2015
	The Savoy	5 A memorable few days	I stayed at the Savoy Hotel in London for a special birthday. The hotel was magnificent with views over the Thames, London Eye and Westminster Aberystwyth	4/5/2015
	The Savoy	5 Just Wonderful. Thank You very much!	Booked an overnight stay and theatre tickets for my Mum & Dad to celebrate their 50th wedding anniversary. After swapping some Email's it w Abingdon	4/25/2014
	The Savoy	5 Wonderful service	The hotel has always been an experience, a destination, a beauteous mark on The Strand in central London.   The Beaufort Bar is the jewel in it's   Abingdon, United Kingdom	5/23/2016
	The Savoy	5 Pure Elegance and Comfort	Fairmont's Savoy Hotel is truly exceptional. The hotel's king-size beds and huge pillows are unbelievably comfortable and plush. As soon as you la Abu Dhabi	8/21/2015
	The Savoy	5 Fantastic central London luxury	We stayed at the Savoy just a few days before christmas, as a birthday treat.   As ever the experience was lovely, from the moment we walked in ev   Abu Dhabi, United Arab Emirate	s 1/10/2013
	The Savoy	5 This Hotel is the best I've EVER expe	. We stayed here for 3 days in a suite that had a fantastic view of the Thames. We also had butler service. The rooms were very well appointed and c Acworth, Georgia	6/20/2018
	The Savoy	5 Class!	We had a lovely 2 night stay. The most welcoming at any hotel. Beautiful hotel.   Nice room 336 but not amazing lovely bathroom though.   Breakfas Adeje, Spain	2/18/2018
	The Savoy	5 Everything you imagine	Stayed at the Savoy September 2013. Had an Edwardian room in the Riverside wing; art deco is also available (edwardian personal choice). I was   Adelaide, Australia	9/15/2013
	The Savoy	5 2nd time and never disappoints	Great location. Excellent experience. Room was immaculate, felt like a suite due to layout. Excellent service from Concierge when required. Great c Adelaide, Australia	11/7/2015
30	The Savoy	5 A great location.	What a fantastic hotel, staff are always very helpful and friendly, and what can I say about the hotel itself, it is amazing! Stop for a lovely breakfast, af  Adelaide, Australia	8/30/2016

# **Text Modelling**

Based on the project objective, we will apply text mining on "Review Text" fields to extract useful concepts and form categories. To shorten the process of fine tuning the text mining extracted concepts, we run and compared 3 resource templates in the Text Mining node as show in **Table 8.** From the result in **Table 8**, we observed that HSE provided the more Types and least "Unknown" concepts. Therefore, we can conclude that HSE is relatively better than others.

**Table 8**Comparison of various Resource Template in SPSS Text Mining Node

Resource Template	No. of Concepts Extracted	No. of Types	No. of Concepts (Global) with "Unknown" Type
Hotel Satisfaction (English) Template ("HSE")	2,597	64	3,002
Market Intelligence Template ("MI")	2,447	22	4,920
Basic Resource Template ("Basic")	2,830	19	5,081

Figure 7
HSE Extracted Concepts

為 Concept	In	Ø Global   √	🔳 Docs	□ Type
♦ excellent	fx	466	169 (85%)	- ⟨Positive⟩
savoy	fx	215	110 (55%)	<b>局</b> <organization></organization>
staff	fx	133	99 (50%)	□ <personnel></personnel>
good	fx	123	73 (37%)	■ <positive></positive>
no	fx	106	54 (27%)	
service	fx	95	78 (39%)	□ <service></service>
breakfast	fx	86	57 (28%)	□ <restaurant></restaurant>
∫ tea		74	48 (24%)	□ <drinks></drinks>
\ location	fx	73	59 (30%)	
<b>\</b> like	fx	70	51 (26%)	- <positive></positive>
london	fx	59	51 (26%)	
nights nights		55	46 (23%)	
food	fx	50	44 (22%)	₩ <food></food>
experience	fx	49	36 (18%)	
omfortable 🔪	fx	49	43 (22%)	
american bar	fx	43	37 (19%)	
rooms	fx	42	31 (16%)	□ <room></room>
🔪 beautiful	fx	41	35 (18%)	
helpful	fx	41	37 (19%)	
ntiendly friendly	fx	40	38 (19%)	
🔪 bad	fx	38	25 (13%)	
Novely	fx	38	26 (13%)	□□ <positive></positive>
treatment		36	31 (16%)	
special		36	27 (14%)	Contextual>
bed	fx	34	31 (16%)	
time time		33	25 (13%)	<b>□</b> <time></time>
\ large	fx	33	29 (14%)	□ <positive></positive>
drinks		29	25 (13%)	□ <drinks></drinks>
suite	fx	28	16 (8%)	□ <room></room>
<b>N</b> plate	fx	28	6 (3%)	₩ <food></food>

After selection of the resource template, we will review each concept (**Figure 7**) from the most Docs/Global counts to the least Docs/Global counts with the following steps.

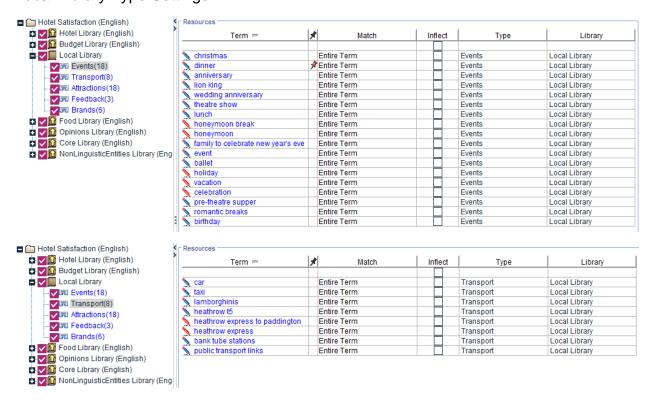
1) Assign a suitable "Type" for the concepts as shown in **Figure 8**. Some of the examples are as followed:

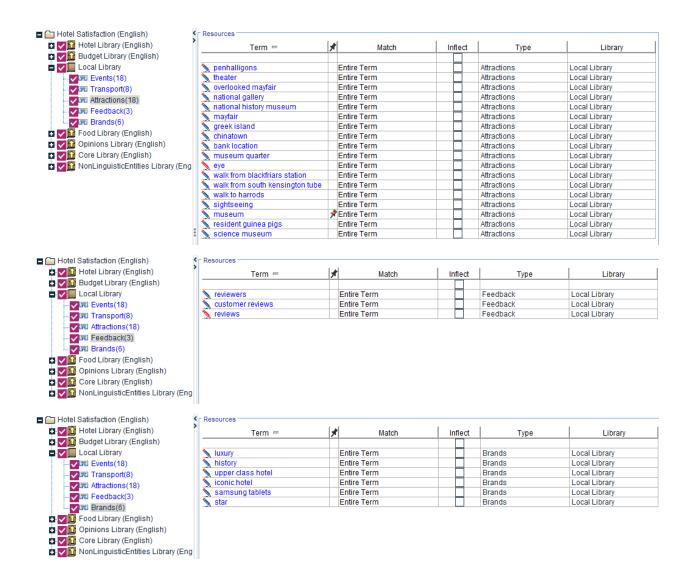
S/N	Concept to be Retyped	Default Type	More Appropriate Type	Library
1	service	Unknown	Service	Hotel Library

S/N	Concept to be Retyped	Default Type	More Appropriate Type	Library
2	experience	Unknown	PositiveFeeling	Opinions Library
3	attractions	Unknown	Attractions	Local Library
4	treatment	Unknown	ActionAttempted	Opinions Library
5	birthday	Unknown	Events	Local Library
6	table	Unknown	HotelAmenities	Hotel Library
7	Savoy grill	Unknown	FoodPlaces	Food Library
8	history	Unknown	Brands	Local Library
9	strand	Unknown	Location	Core Library
10	Beaufort bar	HotelAmenities	Drinks	Food Library
11	Covent garden	Unknown	HotelAmenities	Hotel Library
12	scones	Unknown	Food	Food Library
13	friend	Unknown	Customer	Opinions Library
14	Foyer	Unknown	HotelAmenities	Hotel Library
15	lunch	Unknown	Events	Local Library
16	restaurant	FoodPlaces	Restaurant	Hotel Library
17	dinner	Restaurant	Events	Local Library
18	kaspars	Unknown	Restaurant	Hotel Library
19	Luggage	Unknown	CheckInCheckOut	Hotel Library
20	decor	Unknown	HotelAmenities	Hotel Library
21	husband	Unknown	Customer	Opinions Library
22	guests	Unknown	Customer	Opinions Library
23	history	Unknown	Brands	Local Library
24	door	Unknown	Room	Hotel Library

S/N	Concept to be Retyped	Default Type	More Appropriate Type	Library
25	family	Unknown	Customer	Opinions Library
26	Convent garden	Unknown	HotelAmenities	Hotel Library
27	taxi	Unknown	Transport	Local Library
28	bath	Unknown	RoomAmenities	Hotel Library
29	Walking distance	Unknown	PositiveFeeling	Opinions Library
30	anniversary	Unknown	Events	Local Library

Figure 8
Local Library Type Settings





 Create Synonyms for spelling error words, similar meaning words as shown in Figure 9 and below.

S/N	Targets	Synonyms	Library
1	menu	menus, menu	Local Library
2	decoration	decoration, art deco, décor, dcor	Local Library
3	tube stations	tube, tube lines, tube stations in walking distance, tube stops	Local Library
4	mother	mother, mum	Local Library
5	honeymoon	honeymoon, honeymoon break	Local Library

6	concierge	concierge, concierge staff, concierge chaps, concierge desk, concierge service	Local Library
7	london eye	london eye, eye	Local Library
8	holiday	Holiday, vacation	Local Library
9	luggage	Bags, luggage	Local Library
10	celebration	celbration	Local Library

Figure 9
Synonyms added to Resource Template

	Target	Synonyms	Library ≜
104	✓	bathrobesj	Local Library
105	✓   Menu	menu, menus	Local Library
106	decoration	decoration, and deco, decor, decor	Local Library
107	tube stations	🐧 tube, 🐧 tube lines, 🐧 tube stations in walking distance, 🐧 tube stops	Local Library
108	mother 🗎	mother, mum	Local Library
109	knightsbridge	knightsbidge, knightsbridge	Local Library
110	✓       honeymoon	honeymoon, honeymoon break	Local Library
111	heston blumenthal	🔪 heston blumenthal, 🔦 heston blumenthal restaurant dinner	Local Library
112	heathrow express	\chi heathrow express, 💉 heathrow express to paddington	Local Library
113	✓       future visits	future, future visits	Local Library
114	direct to heathrow	direct line to heathrow, 🦠 direct link to heathrow	Local Library
115	☑ 📐 cost	oost, 🖠 cost of the room	Local Library
116	concierge 🗎	\chi concierge, 🔌 concierge staff, 🔌 concierge chaps, 🔌 concierge desk, 🔌 concierge service	Local Library
117	complimentary	complementary, complimentary	Local Library
118	comfortable	comfortable, comfortable side	Local Library
119	breakfast buffet	🔪 breakfast buffe, 🦠 breakfast buffet	Local Library
120	✓       bellman	\chi bellman, 💉 bellman in hat, 🦠 bellman of the hotel, 🦠 bellman to the front desk	Local Library
121	part of british airlines flight	🔪 aprt of a ba flight	Local Library
122	🗾 📐 apex hotel	\chi apex london wall, 🔌 apex london wall hotel	Local Library
123	london eye	🔪 london eye, 🦠 eye	Local Library
124	celebration	celbration	Local Library
125	recommendations	recommended, recommendations	Local Library
126	reviews 🗎 🗎	reviews of the hotel, reviews	Local Library
127	ridgemount hotel	🦠 ridgemount, 🔌 ridgemount hotel	Local Library
128	🔀 📐 safe	🔪 safelty, 🔦 safe	Local Library
129	room to air conditioning	🧙 rrom to air conditioning	Local Library
130	sea containers restaurant	🔪 sea containers, 🔌 sea containers restaurant	Local Library
131	couple	ouple from sausalito, 🦠 couple	Local Library
132	business travellers	business	Local Library
133	✓       buses	busses, buses	Local Library
134	✓ ∑ location	🔰 place, 🔦 area	Local Library
135	✓ 🔈 holiday	holiday, 🔌 vacation	Local Library
136	🗾 🔈 person's bottom	botty	Local Library
137	✓ Sample Inggage	bags, 📏 luggage	Local Library

# 3) Create Exclude list for common words

As show in the below, we remove the words related to "hotel", "hotels", "stay", "room", "I", "London hotel", "London hotels" because they are common words customer will write in their reviews.

		Exclude List =	Library
0			
1	<b>~</b>	hotel	Local Library
2	✓	london hotel	Local Library
3	<b>~</b>	stay stay	Local Library
4	✓	noom som	Local Library
5	~	İ	Local Library
6	<b>~</b>	hotels	Local Library
7	~	london hotels	Local Library

Based on the extracted concepts, we use Text Link Analysis function to observe the relationships between each concepts "Types" and generate the suitable Categories for this text mining model as shown in **Figure 10**. There are no documents with no concepts extracted and 2 documents uncategorised.

Figure 10
Text Mining Model Generated Categories

itegory	Descriptors	Docs ∇
All Documents	-	200
Uncategorized	-	. 2
-No concepts extracted		. (
🖶 🝵 Hotel Amenities	14	186
📮 🔓 Hotel	2	95
🗅 🝵 General Positive Hotel Review	1	95
🗅 🝵 General Negative Hotel Review	1	67
🖶 🝵 Location	2	123
📮 🝵 Positive Location Feedback	1	123
🗖 🝵 Negative Location Feedback	1	78
🗖 🙆 Food n Drinks	10	149
🗗 🝵 Positive Food & Drinks Feedback	7	146
🗖 🝵 Negative Food & Drinks Feedback	3	8
🖶 🝵 Hotel Service	4	17
Positive Hotel Staff Service	2	169
🗅 🝵 Negative Hotel Staff Service	2	108
🖨 🝵 General Response	8	15
fx [ <attractions>+<positive>]</positive></attractions>		;
🖨 🝵 Customer	2	6
Positive Customer Feedback	1	6
🗖 🝵 Negative Customer Feedback	1	4:
📮 👜 Price	2	4:
📮 🝵 Negative Price Feedback	1	4-
🗖 🝵 Positive Price Feedback	1	(
<b>□</b> 🝵 Brand	3	119
🔁 🝵 Positive Brand Feedback	2	114
🗗 🍵 Negative Brand Feedback	1	7
🖻 🝵 Room Amenities	4	13
🗗 🝵 Positive Room Feedback	2	13
➡ 🝵 Negative Room Feedback	2	92

# **Evaluation**

From **Figure 11 to 18**, we can derive the potential actions to improve our hotel competitiveness.

Category	Insights from Text Mining	Potential Actions
Hotel Amenities	Areas where customers enjoyed during their stay in the hotel.	To consider on improving the food and drinks options by like having more breakfast menu on the restaurant and having an American bar in the hotel.
Room Amenities	Areas in the hotel room where customers enjoyed during their stay.	To consider improving the decoration and beds of each hotel room and included heated towel racks.
Hotel Service	Service level of hotel staff that are of concern by customers.	To consider conduct regular training on the touchpoints like concierge, front desk, housekeeping, etc to maintain the service level.
General Response	Customer general feedback on the hotels.	To consider create important moment with customers especially couples so they will return to celebrate anniversary. Hotel can also introduce bundle hotel stay deals with nearby attractions (London eye, national gallery).

Figure 11
Positive Hotel Amenities Concept Web

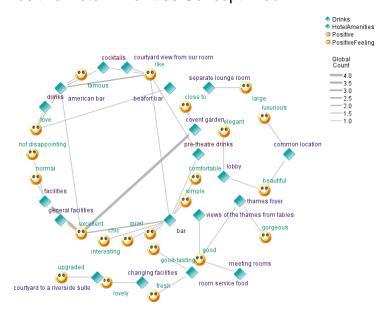


Figure 12
Positive Food & Drink Feedback Concept Web

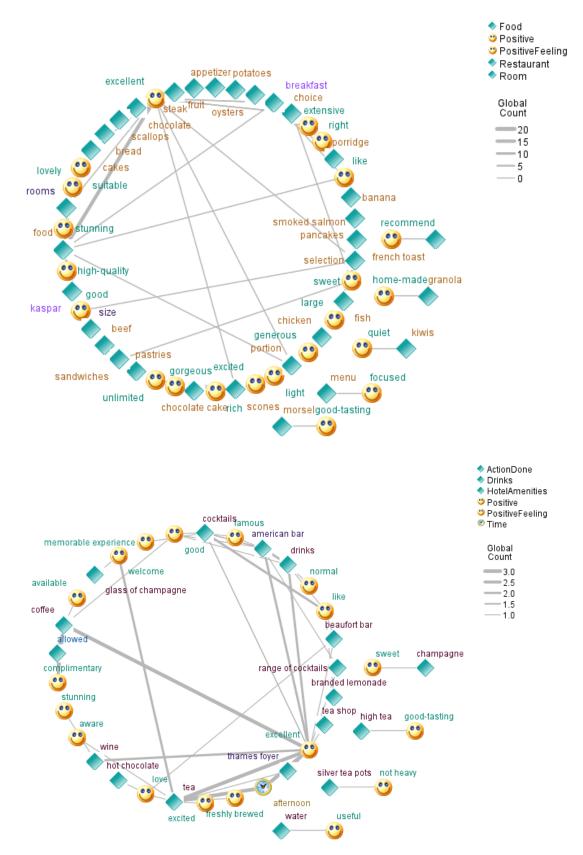


Figure 13
Positive Location Concept Web

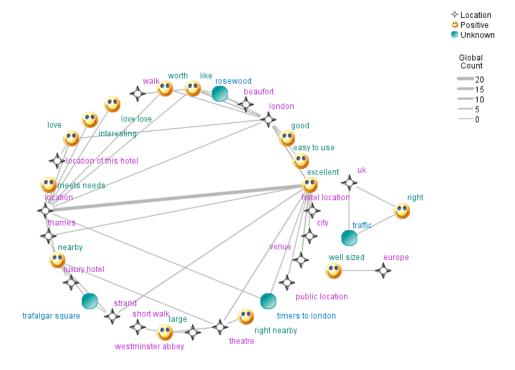
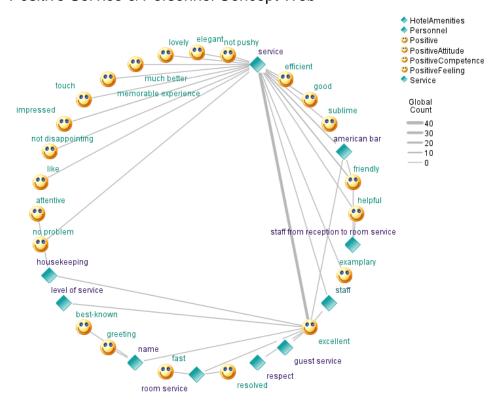


Figure 14
Positive Service & Personnel Concept Web



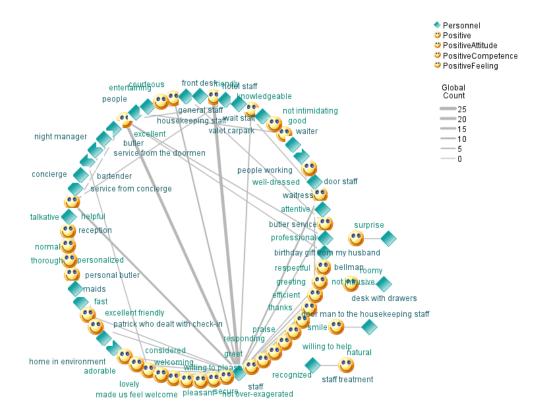


Figure 15
Positive Attractions Concept Web



london eye large nearby national gallery

Figure 16
Positive Brand Concept Web

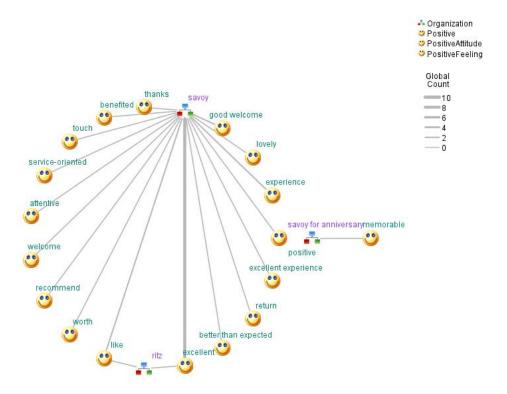


Figure 17
Positive Customer Feedback Concept Web

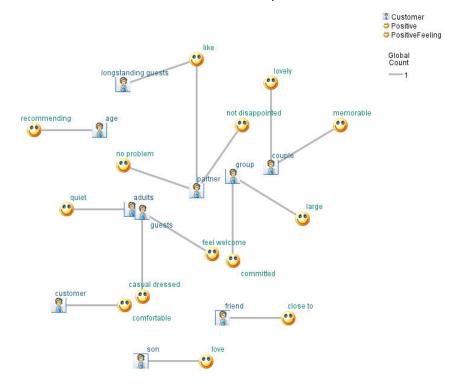


Figure 18
Positive Price Feedback Concept Web

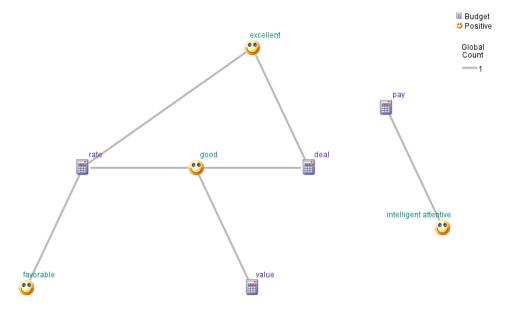
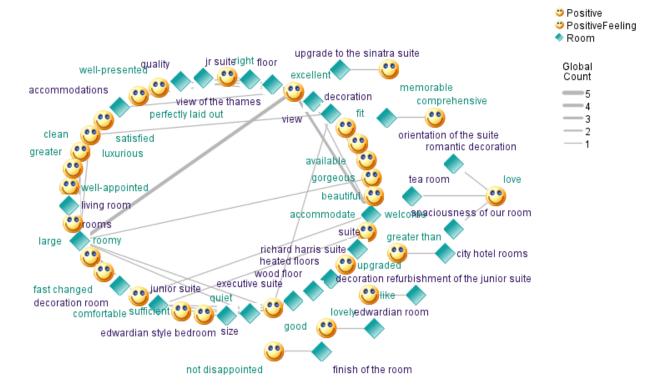
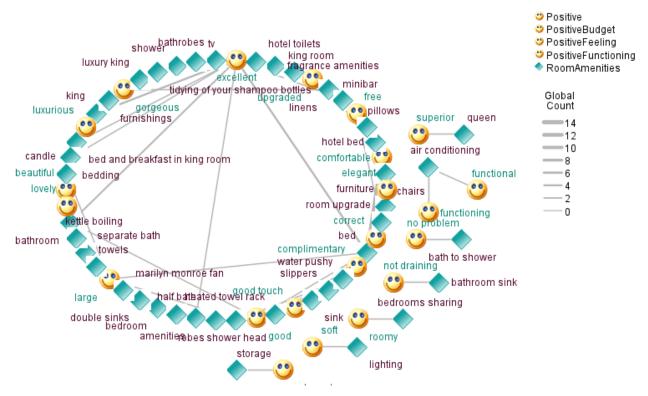


Figure 19
Positive Room Feedback Concept Web





From the below Top 5 Positive and Negative Sub-Categories, we can observe that there are generally more positive reviews than negative reviews and the focus of Customers were usually on Hotel Staff Service and Hotel Location. **Figure 20 to 29** show the details of the related Reviews to the Sub-Categories.

Rank	Positive Subcategory	Category Rule	Document Count
1	Hotel Staff Service	<personnel> &amp; [<positiveattitude>   <positive>   <positivecompetence></positivecompetence></positive></positiveattitude></personnel>	147
2	Location	<location> &amp; [<positive>   <positivefeeling>]</positivefeeling></positive></location>	123
3	Brand	<organization> &amp; [<positive>   <positivefeeling></positivefeeling></positive></organization>	112
4	Room Feedback	<room> &amp; [<positive>   <positivefeeling>   <positivefunctioning>]</positivefunctioning></positivefeeling></positive></room>	110
5	General Hotel Review	<hotelamenities> &amp; [<positive>   <positivefeeling>]</positivefeeling></positive></hotelamenities>	95

Rank	Negative Subcategory		Document Count
1	Hotel Staff Service	<personnel> &amp; [<negative>   <negativefeeling></negativefeeling></negative></personnel>	97
2	Room Feedback	<room> &amp; [<negative>   <negativefeeling>   <negativefunctioning></negativefunctioning></negativefeeling></negative></room>	78
3	Brand	<room> &amp; [<negative>   <negativefeeling>   <negativefunctioning></negativefunctioning></negativefeeling></negative></room>	78
4	Location	<location> &amp; [<negative>   <negativefeeling>]</negativefeeling></negative></location>	78
5	General Hotel Review	<hotelamenities> &amp; [<negative>   <negativefeeling>]</negativefeeling></negative></hotelamenities>	67

Figure 20
Positive Reviews on Hotel Staff Service

Category	Descriptors	Docs ▽
■ All Documents		200
Uncategorized		- 2
···No concepts extracted		- 0
🖶 🖰 Hotel Amenities	14	186
Food n Drinks	10	149
🛱 🖰 Location	2	123
□ 🖰 Hotel	2	95
🖶 🖰 Hotel Service	4	171
Positive Hotel Staff Service	2	169
fx <personnel> &amp; [<positiveattitude>   <positive>   <positivecompetence>]</positivecompetence></positive></positiveattitude></personnel>		147
fx <service> &amp; [<positive>   <positiveattitude>   <positivecompetence>]</positivecompetence></positiveattitude></positive></service>		99
🛕 🝵 Negative Hotel Staff Service	2	108
🖨 🝵 General Response	8	151
fx [ <attractions>+<positive>]</positive></attractions>		3
🛱 🝵 Brand	3	115
🛱 🝵 Customer	2	. 61
□ 🔓 Price	2	45
🖨 🝵 Room Amenities	4	135
📮 🝵 Positive Room Feedback	2	135
🖆 🝵 Negative Room Feedback	2	92

	152	Review Text (147)ahead and had taken advantage of the Savoys ? nights for 3?offer and	Categories / ad secured/Negative Brand Feedback
	152	a very favourable rate	/Positive Brand Feedback
		Was a really lovely spread, well done, and very high quality food, itd be much appreciated. Also, as she is a tea-totaller, and enjoys a par	/Negative Customer Feedback
		branded lemonade, if itd	/Positive Customer Feedback
		There is a very good waiter there, a tall blonde chap, that on the Sunday out of his way	/Positive Price Feedback
		On the Saturday, my partner didnt make that mistake and enjoyed	/Negative Food & Drinks Feedback
		tried the Grill on my last visit and enjoyed it but well leave that to next tim	Commo i cod di Dillino i cododichi
		2 Dec, this time opting for a luxury king room, rather than the deluxe kin	
		The greeting by the doormen is always warm, as is the reception staf escort you to your room	who/Negative Location Feedback
		Id mailed ahead that Id be travelling with my partner who is a big Marilyn	
		fanbe possible to put a few bottles in our minibar, thatd be very appreciated	/Negative Hotel Staff Service/Positive Hotel Staff Service
		Unfortunately I had to prompt our greeter for this information and the re-	uest re the/Negative Room Feedback
		minibar was unfulfilledNot a big point, but itd have been nice if the greeter had been prepared,	nd if the/Positive Room Feedback
		request	nd if the
		That was appreciated, last time I was on the seventh, and whilst equally beautifully decorated	Ipreferred
		the red elevator to the blue	
		The deluxe king on the 7th had a partial view of the Thames and was an style, so this time	Edwardian
		However, I didnt pay for a river view so Im not complaining, the room wa	s <mark>lovely</mark>
		, bigger than the deluxe king, and I think we needed that for two peopleThe bed was large and comfortable but was obviously two beds	
		The bathroom was large with a separate bath and walk in shower	
		so was very happy with the accommodationI always find the staff there very friendly	
		, never have a problem getting a table as yet, or any of the attitude?some	
		reviewersstay, and in fact it was knowing my partners love of this celebrity and the	e hotels
1		association	
		and he was as good as his word because on check out I was asked if v contacted	ved been
		?which I was happy with, to try both areas	
		My breakfast then duly appeared, I understand why they did that, but dappreciated	ave
		for time with, and wed come to eat in (what we thought) good time	
		, and again it was very well presented and excellent quality  Overall it was an excellent	
		stay again, and Im being hard on Savoy giving it 4.5 stars, because Id ha	ve no
		hesitation recommending	
		and disparaged, the Savoy is an outstanding venue	
	196	Also, I emailed them a number of times before we stayed with various matters and	/Negative Brand Feedback
	190	the response was always quick, informative, polite and welcoming	/Positive Brand Feedback
		and, again, service and drinks were really good. Breakfast the next day in the	/Negative Customer Feedback /Positive Customer Feedback
		Thames Foyer was also very good, bed and breakfast in a deluxe king room for an extremely good rate	/Negative Price Feedback /Positive Price Feedback
		The hotel is beautiful and the staff absolutely excellent. We had an Art Deco room	/Negative Food & Drinks Feedback /Positive Food & Drinks Feedback
		The bathrooms are great, as are the lovely La Labo Rose 31 toiletries	/General Negative Hotel Review
		ensure that our room was close to our friends and worked out that this would be a	/General Positive Hotel Review /Negative Hotel Staff Service
		good ideaand staff at The Savoy should feel justly proud of their beautiful hotel and the	/Positive Hotel Staff Service /Negative Room Feedback
2			/Positive Room Feedback
2		the pillows	
		it was the quickest room service I've ever had in any hotelovernight - the valet parking is really good (?0 for overnight stay for guests) and	
		luggage is quickly and efficiently	
	66	The room looked into roofs and the people working here was nice but not all	/Negative Brand Feedback
		We found a good price on the internet and really looked forward to this weekendThe drinks we get served were just normal drinks and very expensive and the	/Positive Brand Feedback /Negative Customer Feedback
		service slow	/Positive Customer Feedback /Negative Price Feedback
		London was very nice, so much to see and to do but we have to go back to do it	/Negative Food & Drinks Feedback
			/Positive Food & Drinks Feedback /General Negative Hotel Review
3		again out to carry out another motorin.	/General Negative Hotel Review /General Positive Hotel Review
3		again and not at carry but another nota	/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Location Feedback
3		ogan cau no access at anoma nous	/General Negative Hotel Review /General Positive Hotel Review /Negative Location Feedback
3		ogan cau no access at anoma nous	/General Negative Hotel Review /General Positive Hotel Review /Negative Location Feedback /Positive Location Feedback /Regative Hotel Staff Service
3		ogan cau no access at anoma nous	/General Negative Hotel Review /General Positive Hotel Review /Negative Location Feedback /Positive Location Feedback /Regative Hotel Staff Service
3			/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Negative Location Feedback/Positive Location Feedback/Negative Hotel Staff Service/Positive Hotel Staff Service
	59	every morning (included in our rate) was areas! We loved the tea and hot chocolate	/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Negative Location Feedback/Negative Hotel Staff Service/Positive Lotel Staff Service/Positive Hotel Staff Service
	59	every morning (included in our rate) was great We loved the tea and hot chocolateremembered our names and greated us each day. Everyone was nice and helpfulWe absolutely loved the hotel and had a wonderful time.	/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Location Feedback/Negative Hotel Staff Service/Positive Hotel Staff Service/Positive Brand Feedback/Negative Brand Feedback
	59	every morning (included in our rate) was great We loved the tea and hot chocolateremembered our names and greated us each day. Everyone was not and helpfulWe absolutely loved the hotel and had a wonderful time We actually fixed these rooms better because they each had a bathroom. They did not really have views, but he rooms were life.	/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Location Feedback/Negative Hotel Staff Service/Positive Hotel Staff Service/Positive Brand Feedback/Negative Brand Feedback/Negative Brand Feedback/Negative Customer Feedback/Negative Customer Feedback/Negative Customer Feedback
	59	every morning (included in our rate) was great We loved the tea and hot chocolateremembered our names and greated us each day. Everyone was nice and heloful	/General Negative Hotel Review/General Postive Hotel Review/Regative Location Feedback/Postive Location Feedback/Postive Hotel Staff Service/Postive Hotel Staff Service/Postive Hotel Staff Service/Postive Brand Feedback/Postive Brand Feedback/Postive Gustomer Feedback/Postive Customer Feedback/Postive Food & Drinis Feedback/Postive Food & Drinis Feedback/Postive Food & Drinis Feedback
	59	every morning (included in our rate) was area!! We loved the tea and hot chocolateremembered our names and intelled us each day. Everyone was nice and heightWe absolutely loved the hotel and had a wonderful timeWe actually like these grows bettle because they each had a bathroom. They did not really have views, but the rooms were 0.0and the Bathrooms were mazing? The lainshower was the highlight of the bathroom	/General Negative Hotel Review/Regarial Negative Hotel Review/Regative Location Feedback/Postitve Location Feedback/Postitve Hotel Staff Service/Postitve Hotel Staff Service/Postitve Hotel Staff Service/Postitve Brand Feedback/Postitve Brand Feedback/Postitve Ustomer Feedback/Postitve Ustomer Feedback/Postitve Prod & Drinks Feedback/Postitve Foed & Drinks Feedback/Postitve Foed & Drinks Feedback/Postitve Foedback/Postitve Foedback/Postitve Foedback/Postitve Foedback/Postitve Foedback/Postitve Foedback/Postitve Foedback
	59	every morning (included in our rate) was great We loved the tea and hot chocolateremembered our names and greated us each day. Everyone was links and heablulWe also better the common better the course from the common terms We also were, but the common terms are common to the course from the cour	/General Negative Hotel Review/General Postive Hotel Review/Negative Location Feedback/Negative Location Feedback/Negative Hotel Staff Service/Postive Hotel Staff Service/Postive Hotel Staff Service/Postive Brand Feedback/Postive Brand Feedback/Postive Brand Feedback/Postive Customer Feedback/Postive Customer Feedback/Postive Food & Drinks Feedback/Postive Food & Drinks Feedback/Postive Food & Drinks Feedback/Postive Food & Brinks Feedback/Roearral Postive Hotel Review/General Postive Hotel Review/Regative Location Feedback
	59	every morning (included in our rate) was great We loved the tea and hot chocolateremembered our names and greated us each day. Everyone was not and helpful We absolutely loved the hotel and had a wonderful lime  We actually like these nooms bettel because they each had a bathroom. They did not really have views, but the comes were by  and the bathrooms were amazing The lainshower was the highlight of the bathroom  Our rooms were recently remodeled and on the second floor right up the stairs  Other than that we loved our stay at the Savoy	/General Negative Hotel Review/General Negative Hotel Review/Regative Location Feedback/Negative Location Feedback/Negative Hotel Staff Service/Positive Location Feedback/Negative Hotel Staff Service/Positive Hotel Staff Service/Positive Brand Feedback/Negative Brand Feedback/Negative Brand Feedback/Negative Customer Feedback/Negative Foote Feedback/Negative Foote Service Feedback/Negative Foote Service Feedback/Negative Foote Service Feedback/Negative Foote Berview/Seneral Negative Hotel Review/Seneral Negative Hotel Review/Negative Location Feedback/Negative Location Feedback
	59	every morning (included in our rate) was great We loved the tea and hot chocolateremembered our names and greated us each day. Everyone was not and helpfulWe absolutely loved the hotel and had a yonoderful time We actually fixed these rooms bettel because they each had a bathroom. They did not really have views, but the rooms were byand the bathrooms were amazing The lamshower was the highlight of the bathroom Our rooms were recently remodeled and on the second floor right up the stairs Other than that we loved our stay at the Savoy	/General Negative Hotel Review/Regeral Positive Hotel Review/Regative Location Feedback/Positive Location Feedback/Positive Hotel Staff Service/Positive Hotel Staff Service/Positive Hotel Staff Service/Positive Hotel Staff Service/Positive Brand Feedback/Positive Brand Feedback/Positive Gustomer Feedback/Positive Customer Feedback/Positive Food & Drinks Feedback/Positive Food & Drinks Feedback/Positive Food & Drinks Feedback/Positive Food & Drinks Feedback/Positive Hotel Review/Regative Hotel Review/Regative Hotel Review/Regative Hotel Staff Service/Positive Location Feedback/Positive Location Feedback
	59	every morning (included in our rate) was great We laved the tea and hot chocolateremembered our names and greated us each day. Everyone was line and height We absoluble loved the hotel and had a womberful file We actually lace these rooms bettle because they each had a bathroom. They did not really have views, but the rooms were "3 and the bathrooms were smaring The lainshower was the highlight of the bathroom Our rooms were recently remodeled and on the second floor room up the stairs Other than that we loved our stay at the Savoy	/General Negative Hotel Review/General Negative Hotel Review/Negative Location Feedback/Negative Location Feedback/Negative Hotel Staff Service/Positive Hotel Staff Service/Positive Hotel Staff Service/Negative Brand Feedback/Negative Brand Feedback/Negative Candom Feedback/Negative Candom Feedback/Negative Candom Feedback/Negative Candom Feedback/Negative Candom Feedback/Negative Location Feedback
	59	every morning (included in our rate) was great We laved the tea and hot chocolateremembered our names and greated us each day. Everyone was line and height We absoluble loved the hotel and had a womberful file We actually lace these rooms bettle because they each had a bathroom. They did not really have views, but the rooms were "3 and the bathrooms were smaring The lainshower was the highlight of the bathroom Our rooms were recently remodeled and on the second floor room up the stairs Other than that we loved our stay at the Savoy	/General Negative Hotel Review/Regative Location Feedback/Regative Location Feedback/Regative Location Feedback/Regative Hotel Staff Service/Regative Hotel Staff Service/Regative Hotel Staff Service/Regative Brand Feedback/Regative Brand Feedback/Regative Brand Feedback/Regative Brand Feedback/Regative Customer Feedback/Regative Food & Drinks Feedback/Regative Food & Brands Feedback/Regative Location Feedback/Regative Location Feedback/Regative Location Feedback/Regative Location Feedback/Regative Hotel Staff Service/Regative Hotel Staff Service
	59	every morning (included in our rate) was great We laved the tea and hot chocolateremembered our names and greated us each day. Everyone was line and height We absoluble loved the hotel and had a womberful file We actually lace these rooms bettle because they each had a bathroom. They did not really have views, but the rooms were "3 and the bathrooms were smaring The lainshower was the highlight of the bathroom Our rooms were recently remodeled and on the second floor room up the stairs Other than that we loved our stay at the Savoy	/General Negative Hotel Review/Regative Location Feedback/Regative Location Feedback/Regative Location Feedback/Regative Hotel Staff Service/Regative Hotel Staff Service/Regative Hotel Staff Service/Regative Brand Feedback/Regative Brand Feedback/Regative Brand Feedback/Regative Brand Feedback/Regative Customer Feedback/Regative Food & Drinks Feedback/Regative Food & Brands Feedback/Regative Location Feedback/Regative Location Feedback/Regative Location Feedback/Regative Location Feedback/Regative Hotel Staff Service/Regative Hotel Staff Service



# Figure 21

#### Positive Reviews on Location

Category	Descriptors	Docs ∇
■ All Documents	-	200
··· Uncategorized	-	2
-No concepts extracted	-	0
🖨 🝵 Hotel Amenities	14	186
Food n Drinks	10	149
	2	123
Positive Location Feedback	1	123
fx <location> &amp; [<positive>   <positivefeeling>]</positivefeeling></positive></location>		123
■ Megative Location Feedback	1	78
□ 🛅 Hotel	2	95
Hotel Service	4	171
Positive Hotel Staff Service	2	169
■ Megative Hotel Staff Service	2	108
🖨 🝵 General Response	8	151
fx [ <attractions>+<positive>]</positive></attractions>		3
🛱 🝵 Brand	3	115
Customer	2	61
Ď ⊕ Price	2	45
🖻 🝵 Room Amenities	4	135
Positive Room Feedback	2	135
■ Megative Room Feedback	2	92

9	Review Text (123)	🖰 Categories 🖊
152	ahead and had jaken advantage of the Savoys ? nights for 3?offer and had secured a very favourable rate Was a really [ovely spread, well done, and very high quality food Its a beautiful hotel, excellent service, and somewhere you can enjoy	/Negative Brand Feedback/Positive Brand Feedback/Positive Customer Feedback/Positive Price Feedback/Positive Price Feedback/Positive Food & Drinks Feedback/Positive Food & Drinks Feedback/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Location Feedback/Positive Hotel Staff Service/Positive Hotel Staff Service/Positive Room Feedback/Positive Room Feedback
2	The room looked into roots and the people working here was nice but not all We found a good price on the internet and really looked forward to this weekend The drinks we get served were just normal drinks and very expensive and the service slow  On breakfast we had to wait again and was very normal and expensive again  London was very nice, so much to see and to do but we have to go back to do it again sad not at Savoy but another hotel	/Negative Brand Feedback/Positive Brand Feedback/Negative Customer Feedback/Positive Customer Feedback/Negative Price Feedback/Negative Food & Drinks Feedback/Positive Food & Drinks Feedback/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Hotel Staff Service
59	every morning (included in our rate) was great We loved the tea and hot chocolateWe absolutely loved the hotel and had a wonderful time We actually liked these rooms better because they each had a bathroom. They did not really have views, but the rooms were bigand the bathrooms were amazing. The ainshower was the highlight of the bathroom Our rooms were recently remodeled and on the second floor right up the stairsEveryone was nice and helpfulOther than that we loved our stay at the Savoy	/Negative Brand Feedback/Positive Brand Feedback/Negative Customer Feedback/Positive Customer Feedback/Negative Price Feedback/Negative Food & Drinks Feedback/Positive Food & Drinks Feedback/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Location Feedback/Positive Hotel Staff Service/Positive Hotel Staff Service/Negative Room Feedback/Positive Room Feedback

..., like a top-notch restaurant, is one big theatre with a certain amount of 68 .../Negative Brand Feedback lusion and legerdemain. .../Positive Brand Feedback ...for the new, one of its benefits are the superb fitness amenities and the .../Negative Customer Feedback beautiful swimming pool. It used to be that in the old Savoy days, such normal .../Positive Customer Feedback facilities ..-, the whole experience is still to be highly recommended on all levels. | First .../Negative Price Feedback .../Negative Food & Drinks Feedback surprise when we arrived... ..: for reasons unknown, the room we had booked (the augustly called Grand .../Positive Food & Drinks Feedback De Luxe King Room? had been upgraded... .../General Negative Hotel Review ...to a spectacular suite with a breathtaking view on the Thames... .../General Positive Hotel Review .| Afternoon tea was, as expected, of a superior. .../Negative Location Feedback is in many respects an almost ideal example of perfect hostelry)... .../Positive Location Feedback that can only be achieved with years of experience and cannot be learned in .../Negative Hotel Staff Service even the best of hostelry schools ...I understand that it would be near impossible to have authentic items of high .../Positive Hotel Staff Service .../Negative Room Feedback ...personally up to the finish, when your taxi is called ?with a superb room and .../Positive Room Feedback ...in between - this is an experience not to be forgotten. | One more consideration, though. Apart from the incredible view. ..Last weekend, we stayed at this truly fabulous hotel... .But III do my utter best to remain objective... ..were, as expected, beyond par ?despite a far in between hitch... in this fabulous suite was the fact that, with its dozens of light switches, you could not have a reading light. ., all were of that typically unique British three prongs model, and none in the continental or USA standard... . Such absence is surprising, certainly after the recent renovation, considering that almost all decent... .Tradition is a good... ., either in the hotel restaurant or in the famed Grill Room, which I remember as being an experience. ...However, breakfast and afternoon tea were superb ?up to a point... .before, when breakfast had proceeded without a hitch. seemed to occasion a mini panic ?although when it came, it was perfectly. ooked: to order an egg in a particular preparation at The Savoy always used to be a special treat. .Still, one wonders: is it so exceptional... were perfect, tea without reproach, and pastries ne plus ultra... But its nothing of the kind with the heavy silver tea pots they use at The 4 .: undoubtedly authentic from the time the hotel was built eons ago, these utensils are extremely clumsy to handle ...and relative neglect is due, in my opinion, to the youth of the staff ?some of which are visibly undergoing training (good for them: The Savoy... ., one can have nothing but praise.. .But real if modest works of art would be far more congenial... .. | What also has changed is the dress code, which now is recommended as egant casual... ..lt was nice to.. and the Grill Room.) | All in all, staying at The Savoy has again been a great. .All the more that in the cafs on the Strand next door. ..As far as I can compare, The Savoy has always been and remains one of the very best. ..If possible, one should experience... .... | Great, grand, historic, well-located hotel. Good service. But this hotel 74 .../Negative Brand Feedback plays in the big leagues ... .../Positive Brand Feedback ... Next, the public space is grand and serene, the staff is efficient and .../Negative Customer Feedback helpful, and the bars and restaurants are chic... .../Positive Customer Feedback .? Luxurious, of course. Not large, but sufficient in size. Well appointed .../Negative Price Feedback ...In most respects, I was not disappointed. | First, the location is somewhat .../Negative Food & Drinks Feedback inique... theatre and dining options is a plus, if that suits your interests, as it does. .../Positive Food & Drinks Feedback nine .../General Negative Hotel Review The shower is barely more modern... .../General Positive Hotel Review 5 Adequate, but out of date, and surprising to me in view... .../Negative Location Feedback .. But free wireless would have been a nice gesture, in my view, and what .../Positive Location Feedback 'd expect from this property... .../Negative Hotel Staff Service .../Positive Hotel Staff Service .../Negative Room Feedback /Positive Room Feedback

# Figure 22

# Positive Reviews on Brand

Category	Descriptors	Docs ▽
■ All Documents	-	200
Uncategorized	-	2
-No concepts extracted	-	0
🖨 角 Hotel Amenities	14	186
🗗 🔓 Food n Drinks	10	149
🖆 🔒 Location	2	123
🗗 🔓 Hotel	2	95
🖨 🝵 Hotel Service	4	171
📮 👸 Positive Hotel Staff Service	2	169
🗖 🝵 Negative Hotel Staff Service	2	108
📮 🙆 General Response	8	151
fx [ <attractions>+<positive>]</positive></attractions>		3
🖨 <caption> Brand</caption>	3	115
🖨 🝵 Positive Brand Feedback	2	114
- fx <organization> &amp; [<positive>   <positivefeel< td=""><td></td><td>112</td></positivefeel<></positive></organization>		112
fx [ <brands>+<positive>]</positive></brands>		4
🗖 🝵 Negative Brand Feedback	1	78
🗅 🝵 Customer	2	61
🗖 🝵 Price	2	45
🖻 🙆 Room Amenities	4	135
📮 🔴 Positive Room Feedback	2	135
🖻 🔒 Negative Room Feedback	2	92

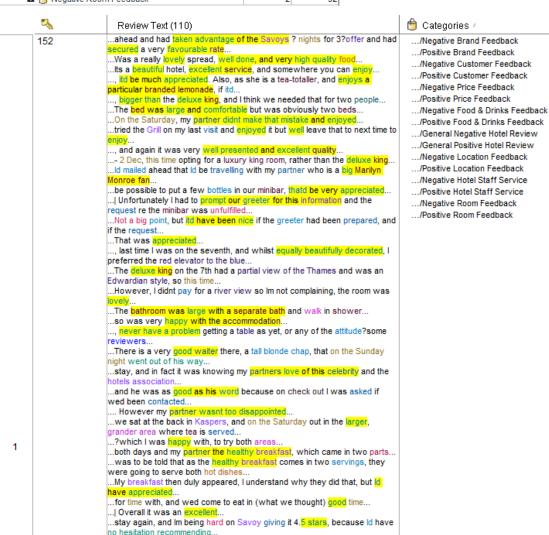
	Negative Ro	omreeuback 2 52	
	C.	Review Text (112)	🗂 Categories /
1	147	Well done the Savoy	/Negative Brand Feedback /Positive Brand Feedback
2	152	ahead and had taken advantage of the Savoys? nights for 3?offer and had secured a very favourable rate Was a really lovely spread, well done, and very high quality food Its a beautiful hotel, excellent service, and somewhere you can enjoy It a beautiful hotel, excellent service, and somewhere you can enjoy	/Positive Brand Feedback/Positive Brand Feedback/Positive Customer Feedback/Positive Customer Feedback/Positive Price Feedback/Positive Price Feedback/Positive Food & Drinks Feedback/Positive Food & Drinks Feedback/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Location Feedback/Positive Hotel Staff Service/Positive Hotel Staff Service/Positive Room Feedback/Positive Room Feedback
		My breakfast then duly appeared, I understand why they did that, but id have appreciatedfor time with, and wed come to eat in (what we thought) good time  Overall it was an excellentstay again, and Im being hard on Savoy giving it 4.5 stars, because Id have no hesitation recommending	
		and disparaged, the Savoy is an outstanding venue	

	3	196	The hotel is beautiful and the staff absolutely excellent. We had an Art Deco room which overlooked the front of the hotel so had a lovelyand the food, wine and service were excellentand, again, service and drinks were really good. Breakfast the next day in the Thames Foyer was also very goodand staff at The Savoy should feel justly proud of their beautiful hotel and the excellent service, bed and breakfast in a deluxe king room for an extremely good rate The bathrooms are great, as are the lovely La Labo Rose 31 toiletries The staff are excellent and pay intelligent attention to detail - e.g they tried to The bed was very comfortable though we found the pillows a little unsupportive and our friends (who had a lovely Edwardian room) made the same comment about the pillows it was the guickest room service I've ever had in any hotel overnight - the valet parking is really good (?0 for overnight stay for guests) and luggage is quickly and efficiently ensure that our room was close to our friends and worked out that this would be a good idea Also, I emailed them a number of times before we stayed with various matters and the response was always quick, informative, polite and welcoming	/Negative Brand Feedback/Positive Brand Feedback/Negative Customer Feedback/Negative Price Feedback/Negative Price Feedback/Negative Price Feedback/Negative Food & Drinks Feedback/Positive Food & Drinks Feedback/General Negative Hotel Review/General Positive Hotel Review/Negative Hotel Staff Service/Negative Hotel Staff Service/Negative Room Feedback/Positive Room Feedback
=	4	66	The room looked into roofs and the people working here was nice but not all We found a good price on the internet and really looked forward to this weekend The drinks we get served were just normal drinks and very expensive and the service slow  On breakfast we had to wait again and was very normal and expensive again  London was very nice, so much to see and to do but we have to go back to do it again sad not at Savoy but another hotel	/Negative Brand Feedback/Positive Brand Feedback/Positive Customer Feedback/Negative Customer Feedback/Negative Price Feedback/Negative Food & Drinks Feedback/Positive Food & Drinks Feedback/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Location Feedback/Positive Hotel Staff Service/Positive Hotel Staff Service
=	5	59	every morning (included in our rate) was great We loved the tea and hot chocolate We absolutely loved the hotel and had a wonderful time  We actually liked these rooms better because they each had a bathroom. They did not really have views, but the rooms were big  and the bathrooms were amazing? The rainshower was the highlight of the bathroom  Our rooms were recently remodeled and on the second floor right up the stairs  Everyone was nice and helpful  Other than that we loved our stay at the Savoy	/Negative Brand Feedback/Positive Brand Feedback/Positive Customer Feedback/Negative Price Feedback/Negative Price Feedback/Negative Food & Drinks Feedback/Positive Food & Drinks Feedback/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Location Feedback/Positive Hotel Staff Service/Positive Room Feedback/Positive Room Feedback

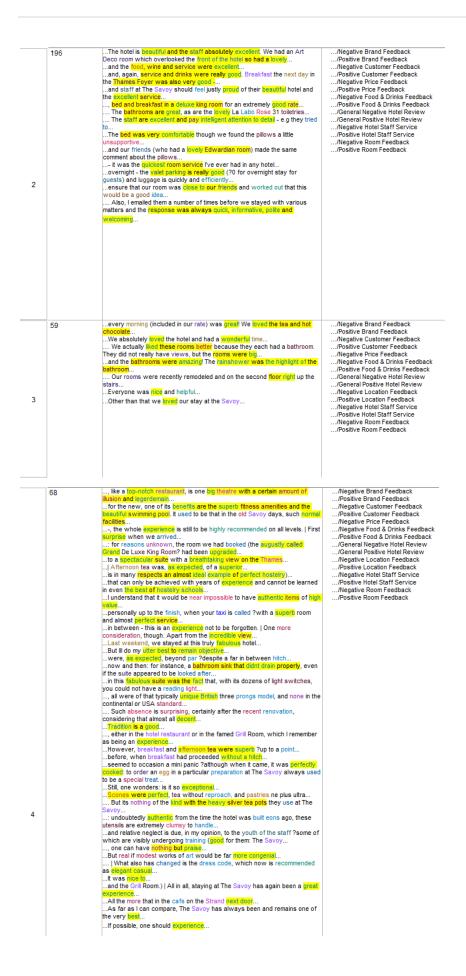
## Figure 23

#### Positive Reviews on Room Feedback

Category	Descriptors	Docs ∇
■ All Documents	-	200
Uncategorized	-	2
-No concepts extracted	-	0
🛱 角 Hotel Amenities	14	186
📮 🝵 Food n Drinks	10	149
📮 🝵 Location	2	123
□ 🛅 Hotel	2	95
🛱 角 Hotel Service	4	171
Positive Hotel Staff Service	2	169
🗖 角 Negative Hotel Staff Service	2	108
📮 🙆 General Response	8	151
fx [ <attractions>+<positive>]</positive></attractions>		3
₽ 🔴 Brand	3	115
Customer	2	61
Price	2	45
🖻 🝵 Room Amenities	4	135
Positive Room Feedback	2	135
fx <room> &amp; [<positive>   <positivefeeling>   <po< td=""><td></td><td>110</td></po<></positivefeeling></positive></room>		110
fx <roomamenities> &amp; [<positive>   <positivefeel< td=""><td></td><td>85</td></positivefeel<></positive></roomamenities>		85
🖆 🝵 Negative Room Feedback	2	92



and disparaged, the Savoy is an outstanding venue....



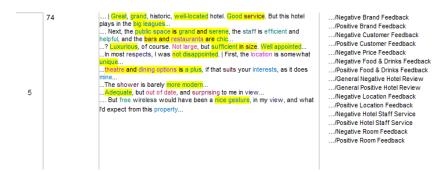
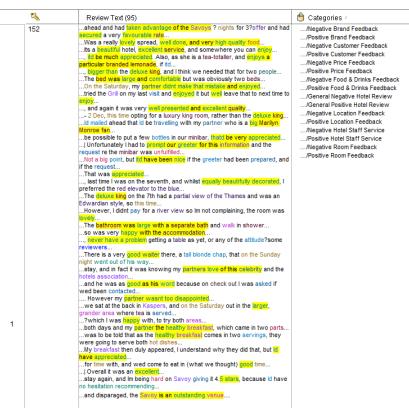


Figure 24

#### Positive Reviews on General Hotel Review

ategory	Descriptors	Docs ▽
All Documents	-	200
····Uncategorized	-	2
No concepts extracted	-	0
Hotel Amenities	14	186
Food n Drinks	10	149
🗖 🝵 Location	2	123
🖿 🔓 Hotel	2	95
🖨 🝵 General Positive Hotel Review	1	95
fx <hotelamenities> &amp; [<positive>   <positivef< td=""><td></td><td>95</td></positivef<></positive></hotelamenities>		95
🗖 👸 General Negative Hotel Review	1	67
🖶 🝵 Hotel Service	4	171
Positive Hotel Staff Service	2	169
🗖 🝵 Negative Hotel Staff Service	2	108
🖨 🝵 General Response	8	151
- fx [ <attractions>+<positive>]</positive></attractions>		3
🛱 角 Brand	3	115
📮 🝵 Customer	2	61
🗖 角 Price	2	45
Room Amenities	4	135
🔁 🝵 Positive Room Feedback	2	135
■	2	92

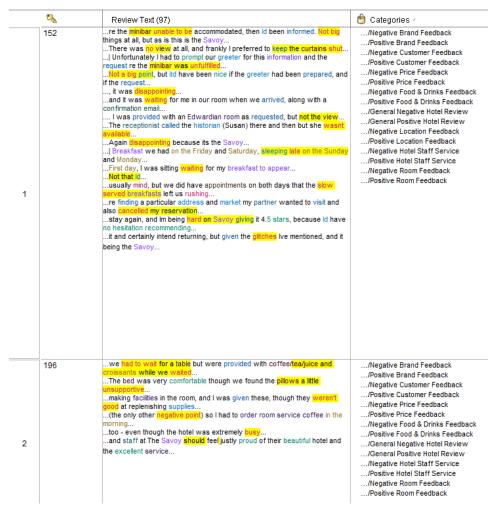


196	The hotel is beautiful and the staff absolutely excellent. We had an Art Deco room which overlooked the Pront of the hotel so had a lovelyand the food, when and service were excelentand, again, service and drinks were really good. Breakfast the next day in the Thanies Fover was also very goodand staff at The Savoy should feel justly group of their beautiful hotel and the excellent servicebed and breakfast in a dexize king room for an extremely good rateThe baff are excellent and pay intelligent alteriors to detail – e.g. they tried to the serviceThe baff are excellent and pay intelligent alteriors to detail – e.g. they tried to the serviceThe baff are excellent and pay intelligent alteriors to detail – e.g. they tried to the serviceThe baff are excellent and pay intelligent alteriors to detail – e.g. they tried to the service of the pillowsThe baff are excellent and pay intelligent alteriors to detail – e.g. they tried to comment about the pillows and our friends (who had a payle Edwardian room) made the same comment about the pillows it was the guickest room service five ever had in any hotel overnight - the last partino is really good (?0 for overnight stay for guests) and luggage is quickly and efficiently ensure that our room was close to our friends and worked out that this would be a good idea Also, I emailed them a number of times before we stayed with various matters and the response was always quick, informative, polite and welcoming	/Negative Brand Feedback/Posätive Brand Feedback/Posätive Customer Feedback/Posätive Customer Feedback/Posätive Price Feedback/Posätive Price Feedback/Posätive Price Feedback/Posätive Food & Drinks Feedback/Posätive Food & Drinks Feedback/General Negative Hotel Review/General Negative Hotel Review/Regative Hotel Staff Service/Posätive Room Feedback/Posätive Room Feedback
66	The room looked into cofs and the people working here was nice but not all	/Negative Brand Feedback/Positive Brand Feedback/Negative Customer Feedback/Positive Customer Feedback/Positive Customer Feedback/Negative Proce Feedback/Negative Prod & Drinisk Feedback/Positive Food & Drinisk Feedback/General Negative Hotel Review/Regative Location Feedback/Negative Location Feedback/Positive Location Feedback/Negative Hotel Staff Service/Positive Hotel Staff Service
59	every morning (included in our rate) was great We loved the tea and hot chocolate We absolutely loved the hotel and had a wonderful time We actually liked these rooms better because they each had a bathroom. They did not really have views, but the rooms were big. and the bathrooms were amazing. The lainshower was the highlight of the bathroom. Our rooms were recently remodeled and on the second floor right up the stairs Everyone was also and helpful Other than that we loved our stay at the Savoy	/Negative Brand Feedback/Postive Brand Feedback/Negative Customer Feedback/Postive Customer Feedback/Postive Food & Drinks Feedback/Negative Food & Drinks Feedback/Postive Location Feedback/Postive Location Feedback/Postive Location Feedback/Postive Hotel Staff Service/Postive Hotel Staff Service/Postive Room Feedback/Postive Room Feedback
68	, like a lop-notch realizurani, is one big literary with a certain amount of lisuson and regereteman	/Postive Customer Feedback/Negative Frood & Drinks Feedback/Postive Food & Drinks Feedback/Seneral Negative Hotel Review/Seneral Negative Hotel Review/Negative Location Feedback/Postive Location Feedback/Postive Hotel Staff Service/Postive Hotel Staff Service/Negative Room Feedback/Postive Room Feedback

## Figure 25

## Negative Reviews on Hotel Staff Service

Category	Descriptors	Docs ∇
■ All Documents	-	200
Uncategorized	-	2
No concepts extracted	-	0
🖨 🖰 Hotel Amenities	14	186
📮 角 Food n Drinks	10	149
🗗 🝵 Location	2	123
<b>□</b> ⊕ Hotel	2	95
🗗 🝵 General Positive Hotel Review	1	95
🗖 角 General Negative Hotel Review	1	67
🛱 🖰 Hotel Service	4	171
Positive Hotel Staff Service	2	169
	2	108
fx <personnel> &amp; [<negative>   <negativefeeling></negativefeeling></negative></personnel>		97
fx <service> &amp; [<negative>   <negativefeeling>]</negativefeeling></negative></service>		68
🖨 角 General Response	8	151
fx [ <attractions>+<positive>]</positive></attractions>		3
🗗 🝵 Brand	3	115
Customer	2	61
Price	2	45
🖹 👸 Room Amenities	4	135
Positive Room Feedback	2	135
🗗 🍵 Negative Room Feedback	2	92

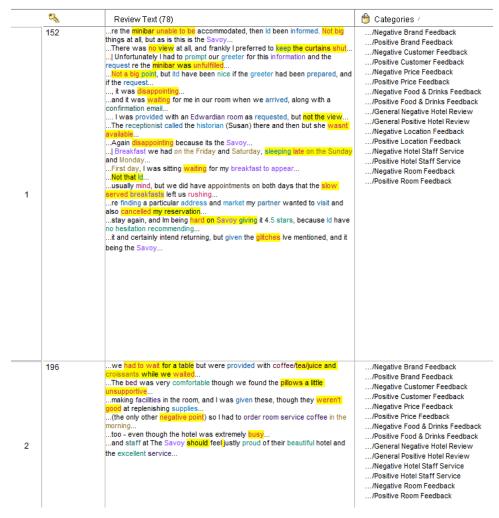




## Figure 26

## Negative Reviews on Room Feedback

Category	Descriptors	Docs ∇
■ All Documents	-	200
Uncategorized	-	2
No concepts extracted	-	0
🖶 🝵 Hotel Amenities	14	186
🛱 角 Food n Drinks	10	149
🛱 角 Location	2	123
🖿 角 Hotel	2	95
📮 🝵 General Positive Hotel Review	1	95
🗖 🝵 General Negative Hotel Review	1	67
🛱 🖰 Hotel Service	4	171
Positive Hotel Staff Service	2	169
🗖 🝵 Negative Hotel Staff Service	2	108
🖨 🙆 General Response	8	151
fx [ <attractions>+<positive>]</positive></attractions>		3
🛱 角 Brand	3	115
🗅 🝵 Customer	2	61
🗖 🔴 Price	2	45
🖨 🖰 Room Amenities	4	135
🔁 🔴 Positive Room Feedback	2	135
苗 🝵 Negative Room Feedback	2	92
fx <room> &amp; [<negative>   <negativefeeling>   <n< td=""><td></td><td>78</td></n<></negativefeeling></negative></room>		78
fx <roomamenities> &amp; [<negative>   <negativefe< td=""><td></td><td>63</td></negativefe<></negative></roomamenities>		63





### Negative Reviews on Brand

Category	Descriptors	Docs ∇
All Documents	-	200
Uncategorized	-	2
No concepts extracted	-	C
🖶 🝵 Hotel Amenities	14	186
Food n Drinks	10	149
🗅 🝵 Location	2	123
🖶 🝵 Hotel	2	95
📮 🝵 General Positive Hotel Review	1	95
🗖 🝵 General Negative Hotel Review	1	67
🖶 🔴 Hotel Service	4	171
Positive Hotel Staff Service	2	169
🗅 🝵 Negative Hotel Staff Service	2	108
🖨 🙆 General Response	8	151
- fx [ <attractions>+<positive>]</positive></attractions>		;
🖨 🝵 Brand	3	119
p Positive Brand Feedback	2	114
🗖 🝵 Negative Brand Feedback	1	78
fx <organization> &amp; [<negative>   <negativefe< td=""><td></td><td>78</td></negativefe<></negative></organization>		78
📮 🝵 Customer	2	61
🗖 🖰 Price	2	4
🗖 👜 Room Amenities	4	135
🔁 🝵 Positive Room Feedback	2	13
🖿 🔒 Negative Room Feedback	2	92



4		before going for out dinner we as guest of hotel had no table and have to wait for more than halfI was sad as I had not the dreams of my nona fulfiledLondon was very nice, so much to see and to do but we have to go back to do it again sad not at Savoy but another hotelPerhaps it was too much expected - my nona always talked about the SavoyWe had not a to happy timeThe drinks we get served were just normal drinks and very expensive and the service slowOn breakfast we had to wait again and was very normal and expensive again	/Negative Brand Feedback/Positive Brand Feedback/Negative Customer Feedback/Negative Price Feedback/Negative Prod & Drinks Feedback/Negative Food & Drinks Feedback/Positive Food & Drinks Feedback/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Hotel Staff Service/Positive Hotel Staff Service
5	59	It was not a family roomThey did not really have views, but the rooms were bigIt was so hardOne complaintJust to let you know, they did tell me that the hotel will be closing in late December	/Negative Brand Feedback/Positive Brand Feedback/Negative Customer Feedback/Negative Customer Feedback/Negative Frice Feedback/Negative Food & Drinks Feedback/Positive Food & Drinks Feedback/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Location Feedback/Negative Hotel Staff Service/Positive Hotel Staff Service/Negative Room Feedback/Positive Room Feedback

# Figure 28 Negative Reviews on Location

□ All Documents  □ Uncategorized □ No concepts extracted □ Hotel Amenities □ Department of the positive Hotel Review □ Department of Hotel Review □ Department of Hote	iptors	Docs ∇
No concepts extracted  Hotel Amenities  Characteristics	-	200
Hotel Amenities  Food n Drinks  Cocation  Positive Location Feedback  Negative Location Feedback  Negative Location Feedback  Negative Location Feedback  Negative Location Feedback  September 1	-	2
Food n Drinks  Location  Positive Location Feedback  Negative Location Feedback  K < Location> & [ <negative>   <negativefeeling (<attractions="" a="" general="" hotel="" negative="" positive="" response="" review="" service="" staff="">+<positive>)  General</positive></negativefeeling></negative>	-	0
Location  Positive Location Feedback  Negative Location Feedback  State Cocation Feedback  State	14	186
Positive Location Feedback  Negative Location Feedback  K < Location> & [ <negative>   <negativefeeling (<attractions="" a="" general="" hotel="" negative="" positive="" response="" review="" service="" staff="">+<positive>]  Brand</positive></negativefeeling></negative>	10	149
Negative Location Feedback	2	123
Hotel  Hotel  General Positive Hotel Review  General Negative Hotel Review  Hotel Service  Positive Hotel Staff Service  Regative Hotel Staff Service  General Response  Kattractions>+ <positive>]</positive>	1	123
☐ Hotel ☐ General Positive Hotel Review ☐ General Negative Hotel Review ☐ Hotel Service ☐ Positive Hotel Staff Service ☐ Negative Hotel Staff Service ☐ General Response ☐ ( <a href="https://doi.org/10.2016/j.com/response">Attractions&gt;+<positive>]</positive></a> ☐ Brand	1	78
General Positive Hotel Review  General Negative Hotel Review  Hotel Service  Positive Hotel Staff Service  Negative Hotel Staff Service  General Response  Attractions>+ <positive>]</positive>		78
General Negative Hotel Review  Hotel Service Positive Hotel Staff Service Negative Hotel Staff Service General Response A [ <attractions>+<positive>] Brand</positive></attractions>	2	95
Hotel Service  Positive Hotel Staff Service  Negative Hotel Staff Service  General Response  Attractions>+ <positive>]  Brand</positive>	1	95
Positive Hotel Staff Service  Negative Hotel Staff Service  General Response  ( <a href="#">Attractions&gt;+<positive></positive></a> ]  Prand	1	67
□ ♠ Negative Hotel Staff Service □ ♠ General Response - ★ ( <attractions>+<positive>] □ ♠ Brand</positive></attractions>	4	171
General Response	2	169
fx [ <attractions>+<positive>]</positive></attractions>	2	108
<b>□</b> ⊕ Brand	8	151
		3
Customer	3	115
Customer Customer	2	61
🗖 👚 Price	2	45
🗖 🝵 Room Amenities	4	135
Positive Room Feedback	2	135
🗅 🔒 Negative Room Feedback	2	92

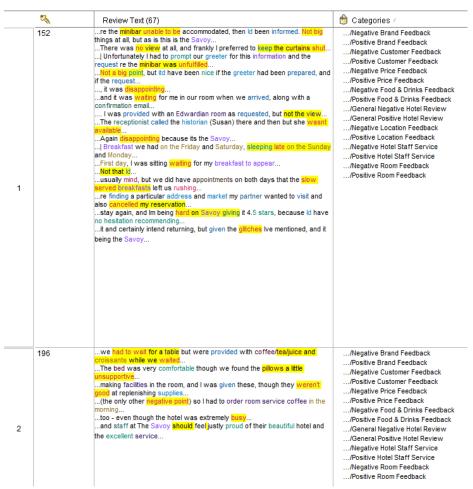
	Review Text (78)	🝵 Categories 🗸
In the minibar unable to be accommodated, then ld been informed. Not things at all, but as is this is the Savoy  In the was no view at all, and frankly I preferred to keep the curtains   Unfortunately I had to prompt our greeter for this information and the request re the minibar was unfufilled  In the request  In the request  In it was disappointing  In and it was waiting for me in our room when we arrived, along with a confirmation email  In I was provided with an Edwardian room as requested, but not the variable  In the receptionist called the historian (Susan) there and then but she available  In and disappointing because its the Savoy  In Breakfast we had on the Friday and Saturday, sleeping late on the and Monday  In First day, I was sitting waiting for my breakfast to appear  In the that ld  In would mind, but we did have appointments on both days that the sleeping late or the served breakfasts left us rushing  In the finding a particular address and market my partner wanted to visit also cancelled my reservation  In stay again, and im being hard on Savoy giving it 4.5 stars, because in the health of the savoy  It and certainly intend returning, but given the gitches ive mentioned, being the Savoy		/Negative Brand Feedback/Positive Brand Feedback/Positive Customer Feedback/Positive Price Feedback/Positive Price Feedback/Positive Price Feedback/Positive Food & Drinks Feedback/Positive Food & Drinks Feedback/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Location Feedback/Positive Hotel Staff Service/Positive Hotel Staff Service/Positive Room Feedback/Positive Room Feedback
2	before going for out dinner we as guest of hotel had no table and have to wait for more than half I was sad as I had not the dreams of my nona fulfilled  London was very nice, so much to see and to do but we have to go back to do it again sad not at Savoy but another hotel Perhaps it was too much expected - my nona always talked about the Savoy We had not a to happy time The drinks we get served were just normal drinks and very expensive and the service slow	/Negative Brand Feedback/Positive Brand Feedback/Positive Customer Feedback/Positive Customer Feedback/Negative Price Feedback/Negative Food & Drinks Feedback/Positive Food & Drinks Feedback/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Location Feedback/Negative Hotel Staff Service/Positive Hotel Staff Service
3	It was not a family roomThey did not really have views, but the rooms were bigIt was so hardOne complaintJust to let you know, they did tell me that the hotel will be closing in late December	/Negative Brand Feedback/Positive Brand Feedback/Negative Customer Feedback/Positive Customer Feedback/Negative Price Feedback/Negative Food & Drinks Feedback/Positive Food & Drinks Feedback/General Negative Hotel Review/General Positive Hotel Review/Negative Location Feedback/Positive Location Feedback/Positive Hotel Staff Service/Positive Hotel Staff Service/Positive Room Feedback/Positive Room Feedback

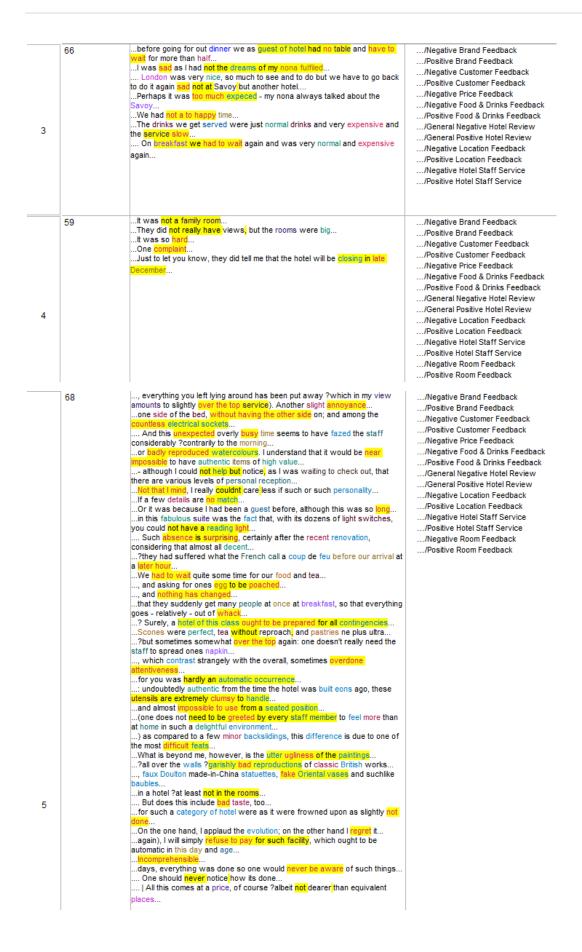
..., everything you left lying around has been put away ?which in my view 68 .../Negative Brand Feedback amounts to slightly over the top service). Another slight annoya .../Positive Brand Feedback ...one side of the bed, without having the other side on; and among the .../Negative Customer Feedback ountless electrical sockets... .../Positive Customer Feedback ... And this unexpected overly busy time seems to have fazed the staff .../Negative Price Feedback considerably ?contrarily to the morning.. .../Negative Food & Drinks Feedback or badly reproduced watercolours. I understand that it would be near npossible to have authentic items of high value... .../Positive Food & Drinks Feedback ..- although I could not help but notice, as I was waiting to check out, that .../General Negative Hotel Review there are various levels of personal reception... .../General Positive Hotel Review .<mark>Not that I mind</mark>, I really couldnt care less if such or such personality... .../Negative Location Feedback If a few details are no match. .../Positive Location Feedback Or it was because I had been a guest before, although this was so long... .../Negative Hotel Staff Service in this fabulous suite was the fact that, with its dozens of light switches, .../Positive Hotel Staff Service you could not have a reading light... ... Such absence is surprising, certainly after the recent renovation, .../Negative Room Feedback considering that almost all decent.. .../Positive Room Feedback .?they had suffered what the French call a coup de feu before our arrival at ...We had to wait quite some time for our food and tea... .., and asking for ones egg to be poached... that they suddenly get many people at once at breakfast, so that everything goes - relatively - out of whack... ..? Surely, a hotel of this class ought to be prepared for all contingencies... Scones were perfect, tea without reproach, and pastries ne plus ultra... .?but sometimes somewhat over the top again: one doesn't really need the staff to spread ones napkin. .., which contrast strangely with the overall, sometimes overdone .. for you was hardly an automatic occurrence... ...: undoubtedly authentic from the time the hotel was built eons ago, these utensils are extremely clumsy to handle.. and almost impossible to use from a seated position. ..(one does not need to be greeted by every staff member to feel more than at home in such a delightful environment... ..) as compared to a few minor backslidings, this difference is due to one of the most difficult feats. ..What is beyond me, however, is the utter ugliness of the paintings. ..?all over the walls ?garishly bad reproductions of classic British works... ., faux Doulton made-in-China statuettes, fake Oriental vases and suchlike baubles... ..in a hotel ?at least not in the rooms... But does this include bad taste, too... Δ ..for such a category of hotel were as it were frowned upon as slightly not .On the one hand, I applaud the evolution; on the other hand I regret it... .again), I will simply refuse to pay for such facility, which ought to be automatic in this day and age... Incomprehensible days, everything was done so one would never be aware of such things... ... One should never notice how its done... ... | All this comes at a price, of course ?albeit not dearer than equivalent places... Not large, but sufficient in size. Well appointed. However, a few quibbles... 74 .../Negative Brand Feedback decided not to meet the level of luxury in the bathrooms found at The .../Positive Brand Feedback Connaught, as an example... .../Negative Customer Feedback .Adequate, but out of date, and surprising to me in view... .../Positive Customer Feedback At the prices charged by The Savoy for a room, one would expect a bit .../Negative Price Feedback more generosity... .../Negative Food & Drinks Feedback .../Positive Food & Drinks Feedback .../General Negative Hotel Review .../General Positive Hotel Review 5 .../Negative Location Feedback .../Positive Location Feedback .../Negative Hotel Staff Service .../Positive Hotel Staff Service .../Negative Room Feedback .../Positive Room Feedback

Figure 29

Negative Reviews on General Hotel Review

Category	Descriptors	Docs ∇
■ All Documents	-	200
Uncategorized	-	2
····No concepts extracted	-	0
🖨 🙆 Hotel Amenities	14	186
📮 角 Food n Drinks	10	149
🖨 🔓 Location	2	123
Positive Location Feedback	1	123
🗖 角 Negative Location Feedback	1	78
由 ⊕ Hotel	2	95
🗖 🝵 General Positive Hotel Review	1	95
🖨 角 General Negative Hotel Review	1	67
fx <hotelamenities> &amp; [<negative>   <negative< td=""><td></td><td>67</td></negative<></negative></hotelamenities>		67
📮 🖰 Hotel Service	4	171
positive Hotel Staff Service	2	169
🗖 🝵 Negative Hotel Staff Service	2	108
🖨 🙆 General Response	8	151
fx [ <attractions>+<positive>]</positive></attractions>		3
🛱 🝵 Brand	3	115
🗗 🝵 Customer	2	61
Ď ∱ Price	2	45
🖻 👸 Room Amenities	4	135
Positive Room Feedback	2	135
■	2	92





### **Deployment**

From Text Mining results of "The Savoy", the hotel can plan progressively in 6 months to carry out the following action plans to improve their hotel rating.

- 1) Improve their breakfast menu to have more options including home-made granola, smoked salmon pancakes, scones, fruits, bread, cakes, porridge.
- 2) Promote hotel bar operation and recruit famous bartenders to serve wide range of cocktails.
- 3) Conduct regular reinforcing basic skill training to hotel staff (front desk, concierge, housekeeping, doormen, etc.) who are serving customers regularly. Training will cover ways to interact with customers, housekeeping reinforcing training, topics on creating customer experiences, etc.
- 4) Identify important customers' event (anniversary, birthday) and provide surprises during their stay. For example, birthday cake and small memento in their room after check in.
- 5) Introduce bundle stay and tour deals with nearby attractions like London eye, Big Ben, and national gallery to attract more customers to sign up.

#### Summary

It is very important for hotel industry to stay relevant and competitive for survival. Hotel managers should continue to explore various analytics options like online customer reviews, hotel transaction records to extract insights and proposed new ideas to improve their current practices. In this project, we explored Text Mining Option on one of the top 10 hotels in London and discovered clearly that hotel service, location and room amenities are the usual factors that customers observed during their hotel stays. As collection of a hotel's insight may not be enough to convince internal management, hotel managers should also perform the same text mining activities in several languages and on other reputable London hotels in the dataset as future studies and comparison. With the extracted concepts & categories from various hotels' customers' review, hotel managers can also extend the research using other data analytics method like clustering to profile each cluster (hotel) characteristics and create action plans to improve their hotel.

Even though it is easy to obtain customer reviews nowadays through Internet and social media, some of the reviews posted may be fake by rival hotels to misled other hotel managers' judgement after text mining. Therefore, it is also important for hotel managers to train their Text Mining modeller to handle misinformation and risk analysis so that the results are trustworthy and useful for the hotel improvement plan.

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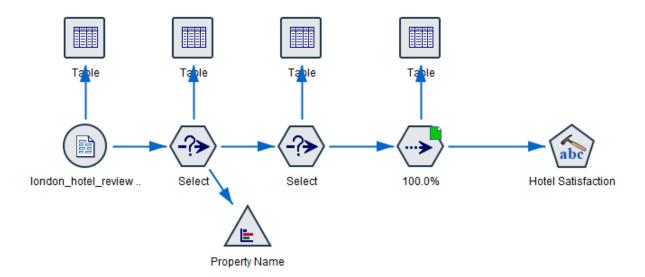
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# Appendix A

# SPSS Text Mining Full Stream



# Appendix B

# Expanded View of Categories

<u>-</u> -	20
-	
_	
12	1:
10	14
7	14
	9
3	
2	12
1	1:
	1:
1	
4	1
2	10
	14
2	10
10	1
3	1
2	1
	1
1	
2	
1	
1	
2	
1	
1	
2	
1	
1	
	2 1 1 2 2 10 3 2 1 1 2 1

🖻 🖰 Room Amentities	4	135
Positive Room Feedback	2	135
fx <room> &amp; [<positive>   <positivefeeling>   <positivefuncti< td=""><td></td><td>110</td></positivefuncti<></positivefeeling></positive></room>		110
fx <roomamenities> &amp; [<positive>   <positivefeeling>   <pos< td=""><td></td><td>85</td></pos<></positivefeeling></positive></roomamenities>		85
🗖 👜 Negative Room Feedback	2	92
fx <room> &amp; [<negative>   <negativefeeling>   <negativefur< td=""><td></td><td>78</td></negativefur<></negativefeeling></negative></room>		78
fx <roomamenities> &amp; [<negative>   <negativefeeling>   <ne< td=""><td></td><td>63</td></ne<></negativefeeling></negative></roomamenities>		63

# Appendix C Extracted Concepts

Concept	In	∅ Global	■ Docs ▽	□ Type
excellent	fx	466	169 (85%)	□ <positive></positive>
savoy	fx	215	110 (55%)	<organization></organization>
staff	fx	133	99 (50%)	□ <personnel></personnel>
service	fx	95	78 (39%)	Service>
5 🔪 good	fx	123	73 (37%)	- <positive></positive>
S Nocation	fx	73	59 (30%)	
n 🔪 breakfast	fx	86	57 (28%)	
3 🧎 no	fx	106	54 (27%)	√  √  NegativeFeeli
) Nondon	fx	59	51 (26%)	√  √  Location>
) 🔪 like	fx	70	51 (26%)	<b>园</b> <positive></positive>
1 🦠 tea		74	48 (24%)	□ <drinks></drinks>
nights		55	46 (23%)	
food	fx	50	44 (22%)	ਯ <food></food>
comfortable	fx	49	43 (22%)	- <positivefeelin< td=""></positivefeelin<>
friendly	fx	40	38 (19%)	- <positiveattitud< td=""></positiveattitud<>
helpful	fx	41	37 (19%)	- <positivecomp< td=""></positivecomp<>
american bar	fx	43	37 (19%)	□ <hotelamenitie< td=""></hotelamenitie<>
experience	fx	49	36 (18%)	□ <positivefeelin< td=""></positivefeelin<>
beautiful	fx	41	35 (18%)	□ <positivefeelin< td=""></positivefeelin<>
treatment	,^	36	31 (16%)	<actionattempt< p=""></actionattempt<>
bed	fx	34		
	fx	42	31 (16%)	□ <room></room>
rooms	fx		31 (16%)	
large	JX	33	29 (14%)	Positive>
special	e.	36	27 (14%)	Contextual>
attentive	fx	27	26 (13%)	□ <positiveattitud< td=""></positiveattitud<>
i Novely	fx	38	26 (13%)	- Positive>
time		33	25 (13%)	园 <time></time>
3 🔪 decoration	fx	26	25 (13%)	
drinks		29	25 (13%)	□□ <drinks></drinks>
) 🧙 bad	fx	38	25 (13%)	<negative></negative>
nestaurant	fx	27	25 (13%)	<b>园</b> <restaurant></restaurant>
2 N dinner	fx	27	24 (12%)	
would recommend	fx	24	23 (12%)	- <positiverecor< td=""></positiverecor<>
bathroom	fx	26	23 (12%)	
√ visit		27	22 (11%)	- ≪ActionAttempt
arrived		25	21 (11%)	- <actiondone></actiondone>
kaspar	fx	22	20 (10%)	- Restaurant>
love	fx	23	20 (10%)	Positive>
expensive	<i>,</i> ,	22	20 (10%)	■ <negativebudg <="" p=""></negativebudg>
concierge	fx	21	20 (10%)	□ <personnel></personnel>
-	J^	27		□ <time></time>
afternoon check in			20 (10%)	CheckInOut>
check-in		21	20 (10%)	
cocktails		24	19 (10%)	□ <drinks></drinks>
we we	£.	20	18 (9%)	Respondent>
no problem	fx	19	17 (9%)	- Positive>
s neople	fx	21	17 (9%)	<pre><personnel></personnel></pre>
n 🔪 bar	fx	23	17 (9%)	
3 Nooked		20	17 (9%)	<actiondone></actiondone>
high		20	17 (9%)	
) 🔪 luggage		20	17 (9%)	
suite	fx	28	16 (8%)	- ≪Room>
small	-	16	16 (8%)	
birthday	fx	18	16 (8%)	□ <events></events>
good-tasting	fx	16	15 (8%)	□ <positivefeelin< td=""></positivefeelin<>
satisfied	fx	17	15 (8%)	□ <positive></positive>
coffee	٠,٠	23	14 (7%)	S <drinks></drinks>
	fv			
excellent	fx	14	14 (7%)	<pre><positive></positive></pre>
choice	fx	15	14 (7%)	□ <food></food>
neturn	fx	17	14 (7%)	□□ <positiveattitud <="" p=""></positiveattitud>

為 Concept	ln l	Global	Docs √	<b>□</b> Type
0 📏 view	<i>f</i> x	20	13 (7%)	
1 once		18	13 (7%)	
2 problem	fx	17	13 (7%)	
3 clean	fx	12	12 (6%)	□ <positivefeeling< td=""></positivefeeling<>
4 Nong	fx	12	12 (6%)	□ <negative></negative>
5 price	fx	18	12 (6%)	□ <budget></budget>
6 more	,	17	12 (6%)	Contextual>
7 upgraded	fx	12	12 (6%)	□ <positive></positive>
8 table	fx	15	12 (6%)	□ <hotelamenities< td=""></hotelamenities<>
9 side	J^	13	12 (6%)	Contextual>
0 old		15	12 (6%)	□ <contextual></contextual>
1 returned		15	11 (6%)	□ <actiondone></actiondone>
	fx	12		□ <room></room>
2 floor	fx		11 (6%)	
3 welcome		15	11 (6%)	□ <positive></positive>
4 Nefficient	fx	11	11 (6%)	□ <positivecompe< td=""></positivecompe<>
5 🔪 door	fx	11	11 (6%)	□ <room></room>
6 🔪 day		12	11 (6%)	□ <time></time>
7 🔪 theatre	fx	12	11 (6%)	园 <location></location>
8 🧎 shower	fx	13	11 (6%)	RoomAmenitie   □  □  □  □  □  □  □  □  □  □  □  □
9 🦜 strand	fx	12	11 (6%)	
0 🧎 grill	fx	12	11 (6%)	
1  rate	fx	12	11 (6%)	ज्ञ <budget></budget>
2 🧙 disappointing	fx	14	11 (6%)	
3 🧙 luxurious	fx	11	11 (6%)	□ <positivefeeling< p=""></positivefeeling<>
4 🔪 i		14	10 (5%)	
5 🦠 gorgeous	fx	12	10 (5%)	- ✓ PositiveFeeling
6 N delivered	_	13	10 (5%)	□ <actiondone></actiondone>
7 N cheap		11	10 (5%)	- PositiveBudge
8 given		10	10 (5%)	□ <actiondone></actiondone>
9 N point		10	10 (5%)	园 <unknown></unknown>
0 N room service	fx	11	10 (5%)	□ <service></service>
1 seel	,	14	10 (5%)	园 <unknown></unknown>
2 arrival		10	10 (5%)	
3 sast	fx	11	10 (5%)	□ <positive></positive>
4 cakes	fx	12	10 (5%)	□ <food></food>
5 thames	fx	10	10 (5%)	□ <location></location>
6 butler	fx	14	10 (5%)	□ <personnel></personnel>
<u> </u>				- Positive>
7 worth	fx	12	10 (5%)	
8 expectations	6.	10	10 (5%)	Contextual>
9 🦠 name	fx	15	10 (5%)	Service>
0 🔪 style	£.	13	10 (5%)	Contextual>
1 🔪 guests	fx	12	10 (5%)	Customer>
2 🔪 beaufort bar		11	10 (5%)	□ <drinks></drinks>
3 🔪 thanks	fx	11	10 (5%)	- Positive>
4 🧎 thames foyer	fx	11	10 (5%)	
5 wish 6 provided		9	9 (5%)	
		9	9 (5%)	<b>园</b> <actiondone></actiondone>
7 🧙 for afternoon		9	9 (5%)	
8 🦜 trip		9	9 (5%)	<actionattempte< p=""></actionattempte<>
9 🧙 complimentary	fx	10	9 (5%)	
0 🧙 menu	fx	11	9 (5%)	□ <food></food>
1 Nevening		11	9 (5%)	<b>□</b> <time></time>
2 N family	fx	11	9 (5%)	
2 family 3 called		12	9 (5%)	
4 N recommend	fx	9	9 (5%)	园 <positive></positive>
5 🔊 covent garden	fx	9	9 (5%)	□ <hotelamenities< td=""></hotelamenities<>
6 book	,	9	9 (5%)	<actionattempte< p=""></actionattempte<>
7 front desk	fx	11	9 (5%)	□ <personnel></personnel>
	fx	9	9 (5%)	□ <positive></positive>
8 nearby	fx	12		Food>
9 scones 0 life	J^	9	9 (5%) 9 (5%)	<pre>Contextual&gt;</pre>