

SENTEMO: A MULTILINGUAL ADAPTIVE PLATFORM FOR ASPECT-BASED SENTIMENT AND EMOTION ANALYSIS

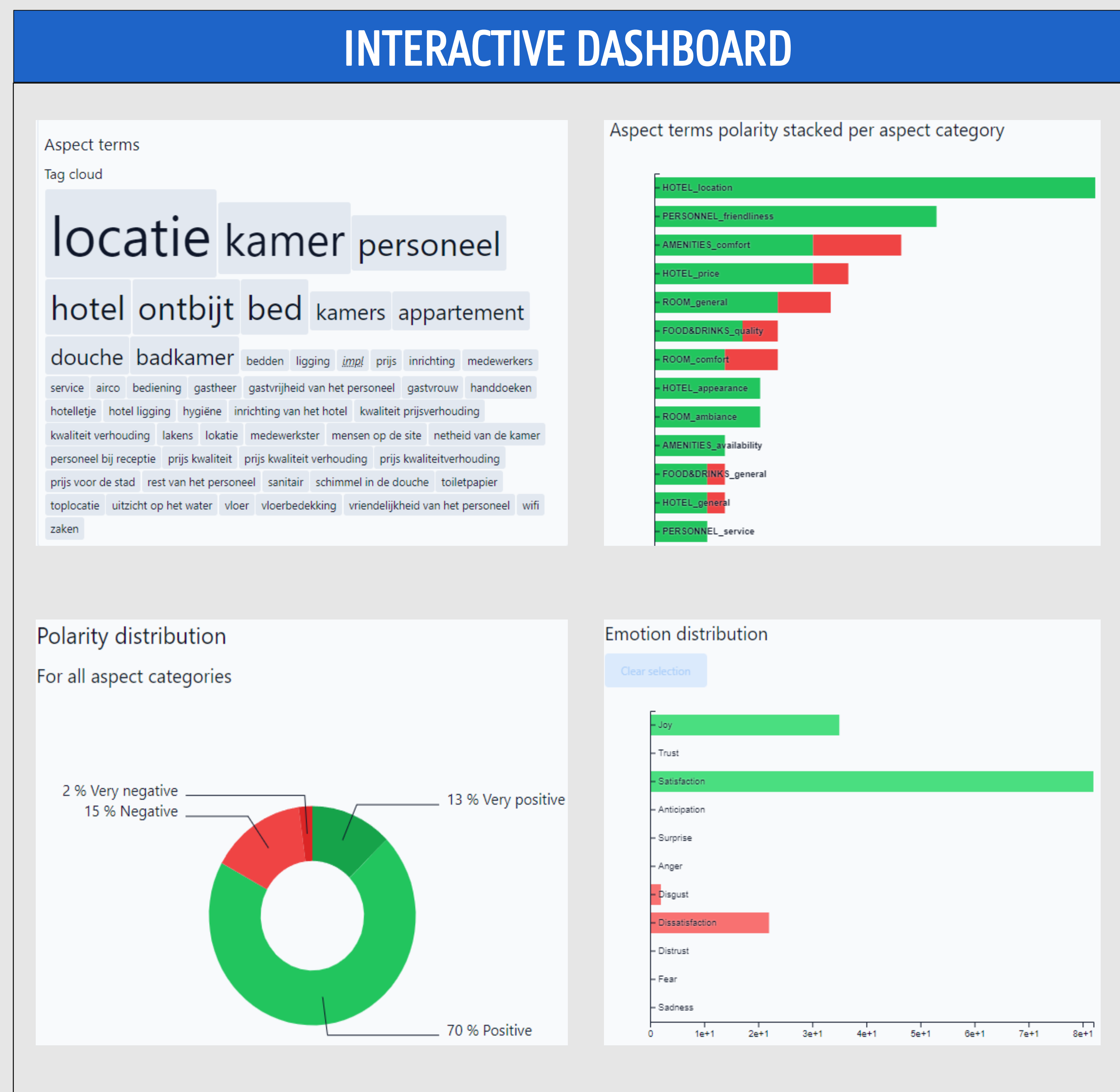


Aspect-based Sentiment Analysis (ABSA)		
ONTBIJT	FOOD&DRINKS_General	Positive
KAMER	ROOM_Comfort	Negative
KAMER	ROOM_Cleanliness	Positive
HOTEL	HOTEL_General	Positive
LIGGING	HOTEL_Location	Very Positive
IMPLICIT	HOTEL_General	Positive

EXPERIMENTAL SET-UP – 4 SUB-TASKS			
1) Aspect Term Extraction	3) Polarity Classification		
<ul style="list-style-type: none"> Feature based Conditional Random Field IOB-Labeling 	<ul style="list-style-type: none"> RoBERT Word Embeddings SVM Very positive, positive, neutral, negative, very negative 		
2) Aspect Category Classification	4) Emotion Classification		
<ul style="list-style-type: none"> Feature based SVM Different categories for each domain 	<ul style="list-style-type: none"> RoBERT Word Embeddings SVM Anger, disgust, dissatisfaction, distrust, joy, sadness, satisfaction, surprise, trust 		

Aspect-based Emotion Analysis (ABEA)	
ONTBIJT	Joy
KAMER	Dissatisfaction
KAMER	Satisfaction
HOTEL	Satisfaction
LIGGING	Satisfaction
IMPLICIT	Trust

EXPERIMENTAL RESULTS												
Aspect Term Extraction				Polarity Classification								
Domein	Precision	Recall	F1	Domein	Precision	Recall	F1					
FMCG-Retail	90,9	92,3	91,4	FMCG-Retail	82,0	81,7	80,9					
Airline	92,2	92,8	92,4	Airline	84,3	84,7	82,8					
Hotel	92,3	93,0	92,6	Hotel	85,4	86,1	85,1					
Hospital	93,0	93,8	93,4	Hospital	91,0	90,2	89,5					
Telecom	92,5	93,5	92,5	Telecom	77,8	77,5	75,7					
General	94,0	95,0	94,3	General	85,8	85,4	84,7					
Aspect Category Classification				Emotion Classification								
Domein	Precision	Recall	F1	Domein	Precision	Recall	F1					
FMCG-Retail	81,5	79,2	79,8	FMCG-Retail	65,3	68,6	61,2					
Airline	66,3	64,8	64,8	Airline	65,7	67,9	62,6					
Hotel	77,7	77,1	77,0	Hotel	70,8	76,1	71,5					
Hospital	73,3	72,3	72,2	Hospital	79,1	88,8	83,6					
Telecom	78,9	76,7	76,9	Telecom	67,7	75,4	69,2					
General	87,1	86,3	86,6	General	70,2	69,9	63,7					



5 domains + 1 general domain <ul style="list-style-type: none"> Airline FMCG-Retail Hospital Hotel Telecom 	4 languages <ul style="list-style-type: none"> Dutch English French German 	Future Work <ul style="list-style-type: none"> Manually annotate wrong predictions Retrain models based on new data <p>➔ Fully customizable and adaptable</p>
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