



Análise Quantitativa de Dados em Marketing

Mestrado em Marketing



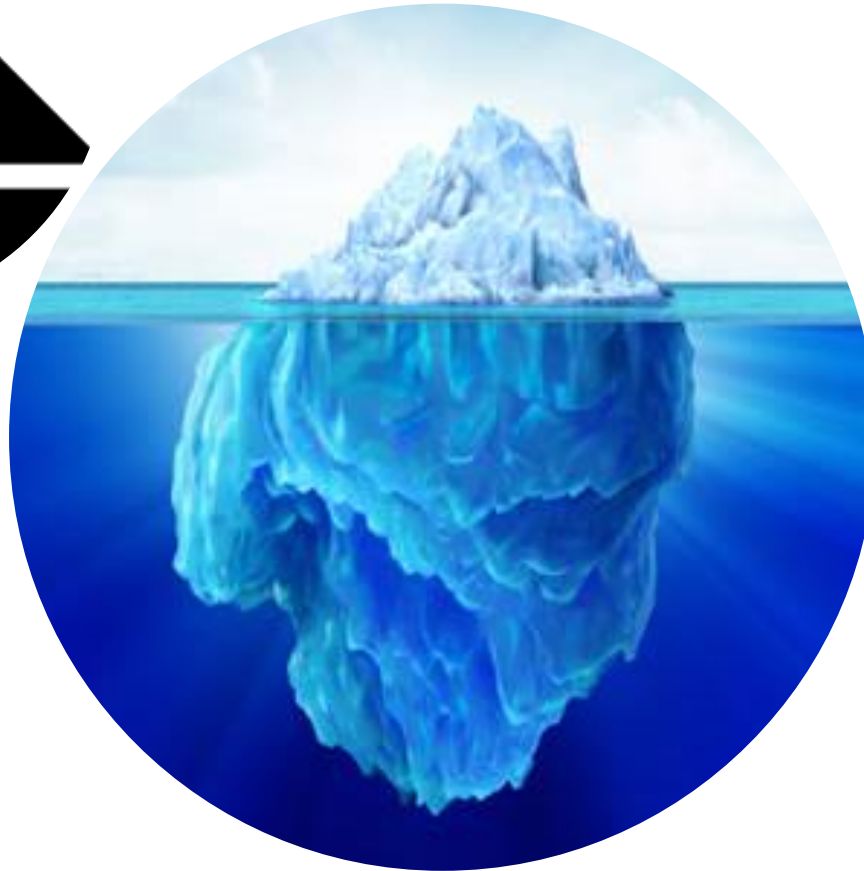
Ana Brochado
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Aspetos Fundamentais da Análise Quantitativa de Dados em Marketing

Introdução ao SPSS e ao Smart-PLS

Estudos de Mercado e Análise Quantitativa de Dados

Tomada de decisão (Marketeer)



Análise de dados MKT



Brand Awareness



Brand Equity

Most Valuable & Strongest Apparel Brands 2025

Brand Finance

Most Valuable Apparel Brands 2025			Strongest Apparel Brands 2025		
#1	Chanel	\$37.9 bn	#1	Nike	94.7
#2	Louis Vuitton	\$32.9 bn	#2	Levi's	94.2
#3	Nike	\$29.4 bn	#3	Dior	93.5
#4	Hermès	\$19.9 bn	#4	Adidas	93.4
#5	Rolex	\$18.8 bn	#5	Rolex	89.9
#6	Adidas	\$18.5 bn	#6	Chanel	89.6
#7	Zara	\$18.1 bn	#7	Gucci	89.5
#8	Dior	\$17.3 bn	#8	Hermès	89.4
#9	Cartier	\$15.7 bn	#9	Louis Vuitton	87.7
#10	Gucci	\$11.4 bn	#10	Tiffany & Co.	85.5

Source: Brand Finance Apparel 50 2025

brandirectory.com/apparel

Brand Personality

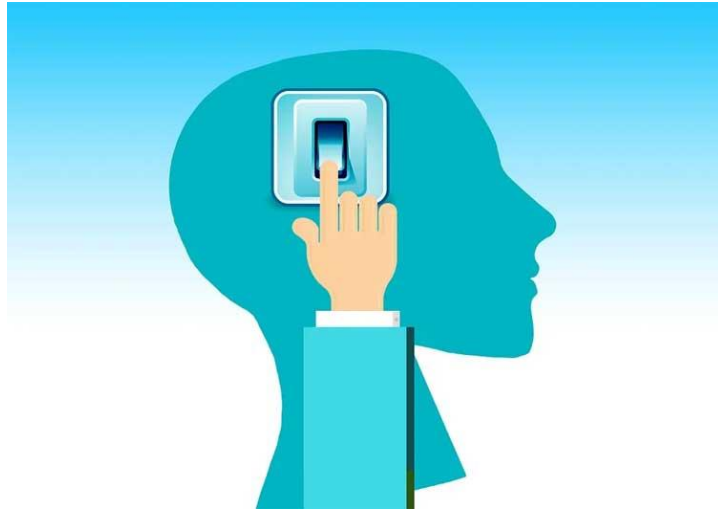
A mindset	A feeling	An issue
Apple	Harley-Davidson, Disney	Volvo
Creativity	Freedom, Magic	Safety
A personality trait	A ritual	A cause or social purpose
Innocent	KitKat	Patagonia
Chatty	Break-time	Save the planet

Brand Image





Brand Awareness



Indique 3 marcas de cerveja _____

Estudos de Notoriedade (conceitos)

Notoriedade Top of Mind

Notoriedade Espontânea

Notoriedade Assistida

Análise univariada
Tabelas de frequências

Brand equity in the Portuguese vinho verde “green wine” market

Brand Equity

Ana Brochado, Fernando Oliveira

International Journal of Wine Business Research

ISSN: 1751-1062

Article publication date: 12 March 2018

DOWNLOADS



Análise multivariada (Smart-PLS)

Permissions

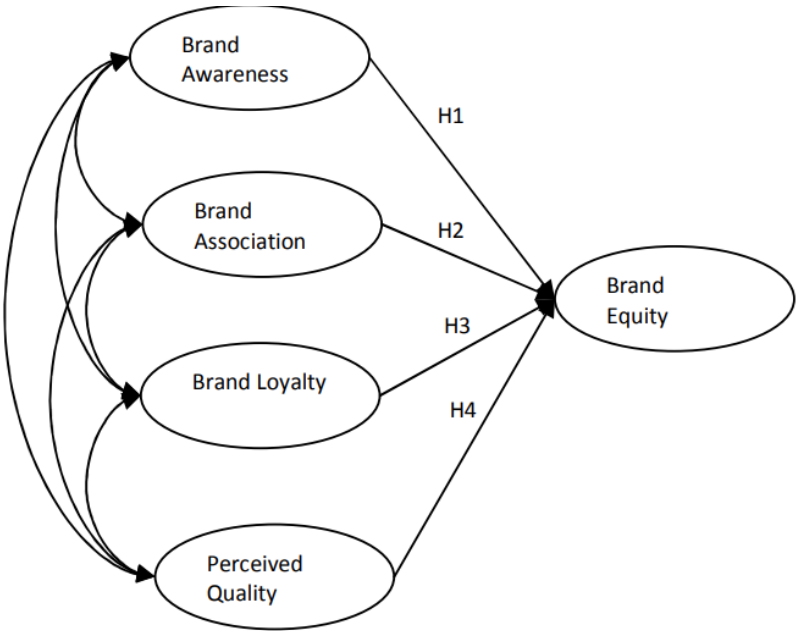


Figure 1: Conceptual model

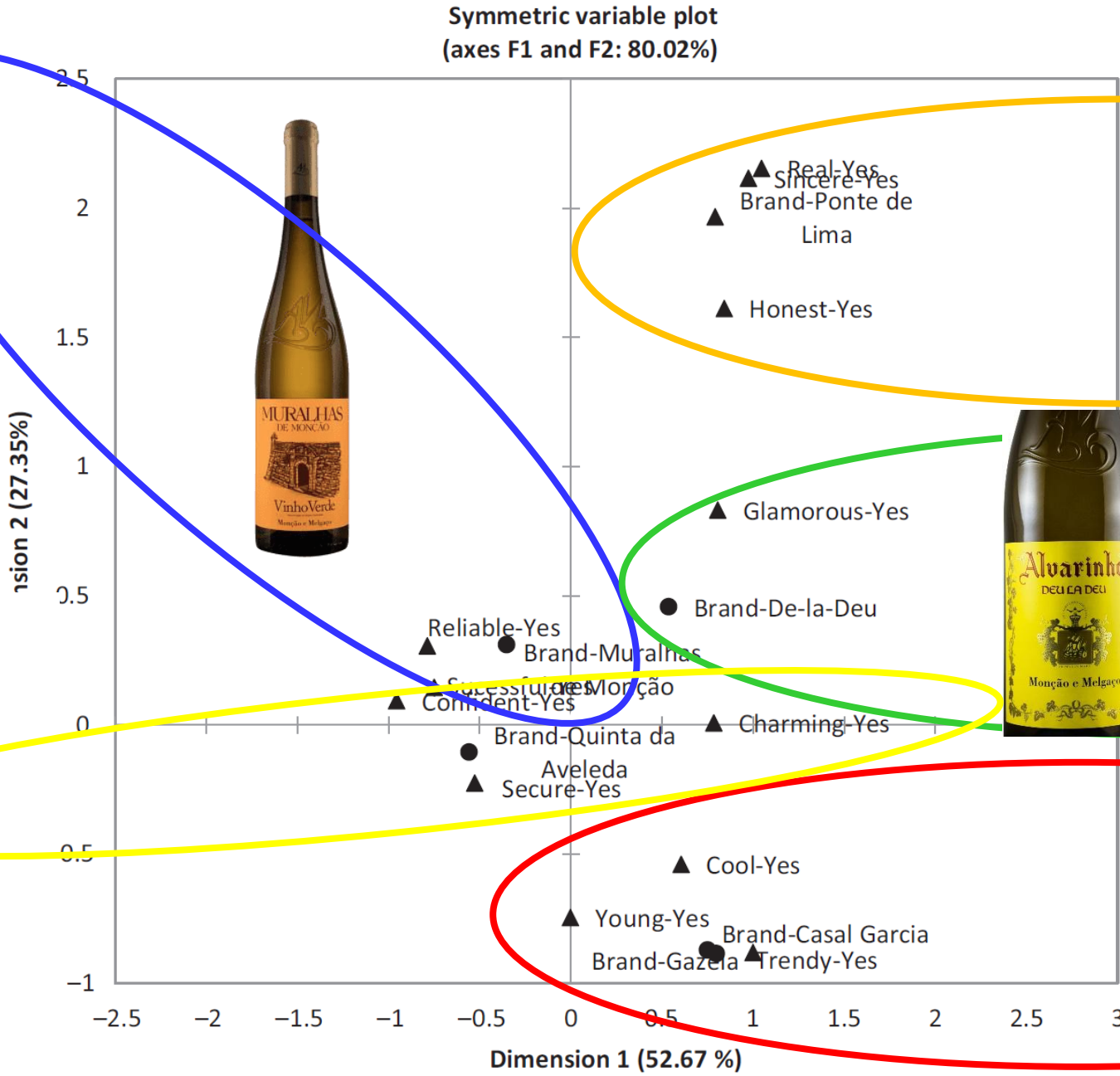


Table 3: Model estimates

Hypotheses	Coefficient	P-value	Conclusion
H1 Awareness → Brand Equity (+)	-0.090	0.453	Not supported
H2 Brand Associations → Brand Equity (+)	0.183	0.013	Supported
H3 Loyalty → Brand Equity (+)	0.580	0.000	Supported
H4 Perceived Quality → Brand Equity (+)	0.260	0.000	Supported

Brand Personality

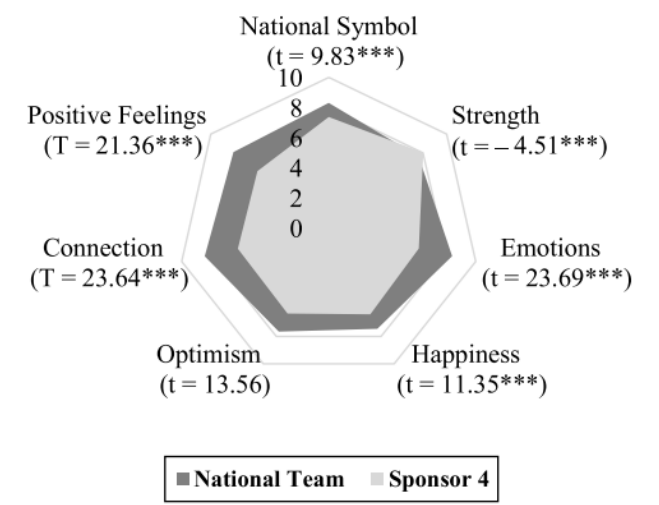
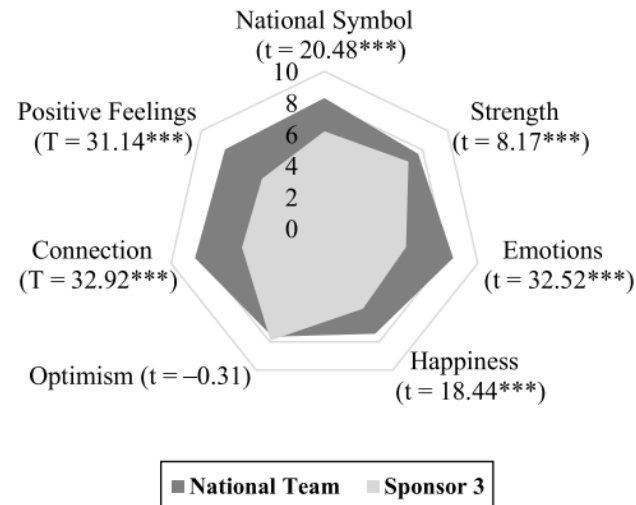
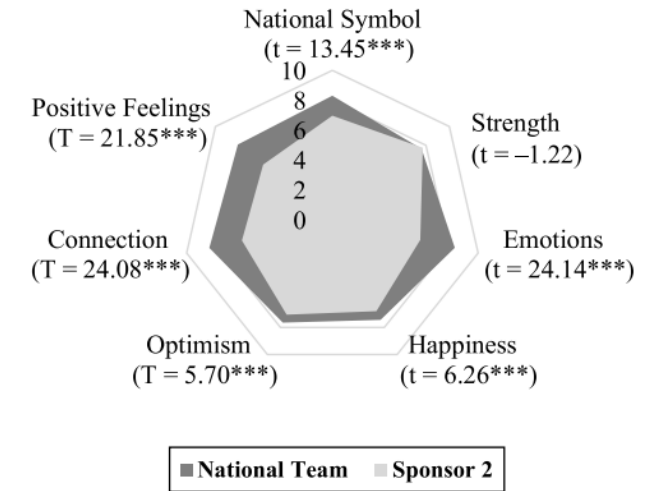
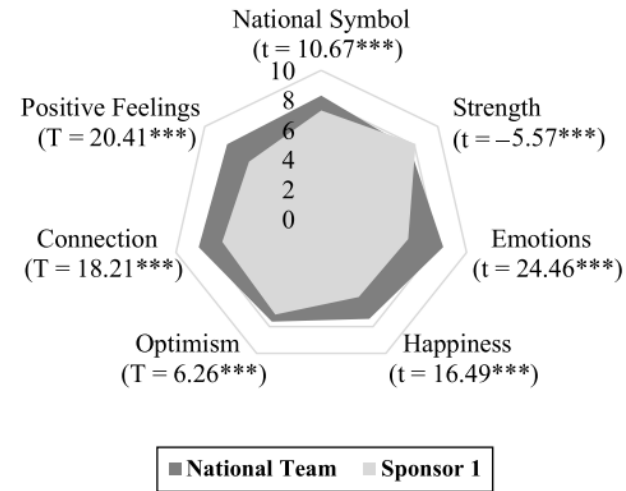
Análise multivariada
(análise de correspondências múltiplas)



Brand Image

Análise bi-variada, Teste de hipóteses, amostras emparelhadas

Figure 2 National team-sponsor image congruence maps by item



Notes: ***, ** and * = statistically significant at the 1, 5 and 10 per cent level, respectively

Table II National team image and sponsors image – descriptive statistics and one-way analysis of variance results

Item	National team Mean	Gender F	Age group F	Schooling years F	Sponsor 1 Mean	Sponsor 2 Mean	Sponsor 3 Mean	Sponsor 4 Mean
National symbol	8.30	7.39***	1.69	25.84***	7.37	7.38	6.46	7.55
Strength	7.62	7.93***	0.91	18.97***	8.16	8.15	7.24	8.22
Emotions	8.40	1.58	1.26	4.66**	6.06	6.40	5.58	6.72
Happiness	7.43	0.00	5.59***	22.73***	5.80	7.14	6.35	7.06
Optimism	7.63	12.36***	1.81	11.81***	7.11	7.74	6.20	7.90
Connection	8.44	13.01***	1.52	5.01***	6.98	6.65	5.66	6.76
Positive feelings	8.08	5.07**	0.50	9.43***	6.38	6.59	5.11	6.67

Notes: ***, ** and * = statistically significant at the 1, 5 and 10% level, respectively

Brand Image

Análise bi-variada, Teste de hipóteses, amostras independentes

Brand Image

Análise multivariada, análise de regressão

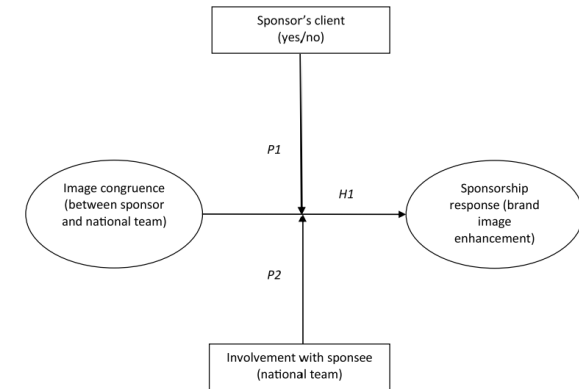
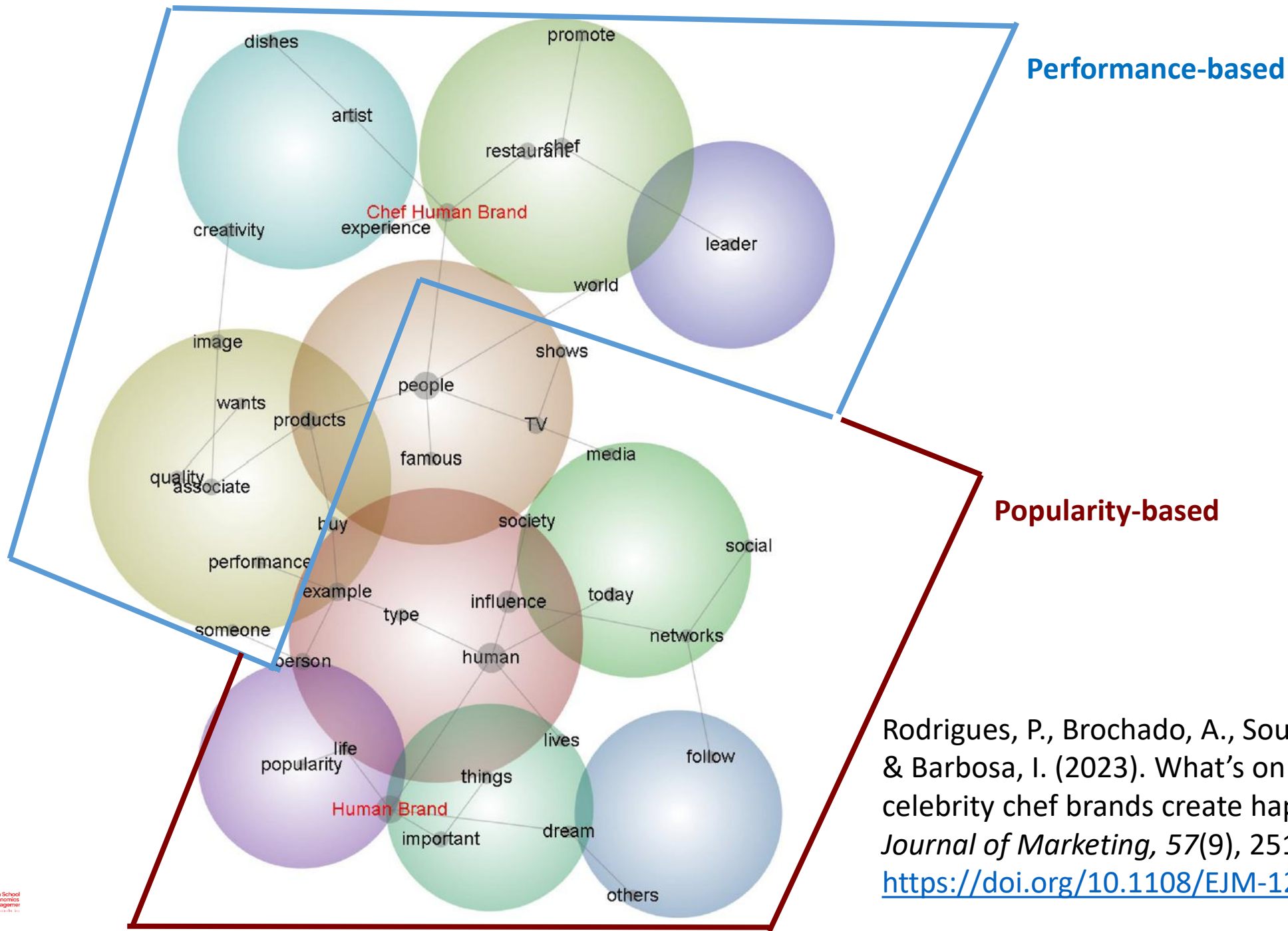


Table VI Comprehensive model (all variables)

Variables	Sponsor 1		Sponsor 2		Sponsor 3		Sponsor 4	
	B	Standard error	B	Standard error	B	Standard error	B	Standard error
Independent	4.50	0.55***	3.99	0.43***	3.56	0.41***	4.31	0.44***
Involvement with sponsee	0.53	0.06***	0.53	0.05***	0.65	0.05***	0.56	0.05***
Sponsor client (1 = yes)	0.04	0.42	0.97	0.26***	0.66	0.34**	0.36	0.16**
Sponsee–sponsor image congruence (ABS)	−0.56	0.17***	−0.27	0.14**	−0.51	0.12***	−0.50	0.15***
Sponsor client × sponsee–sponsor congruence (ABS)	−0.15	0.14	−0.01	0.09	−0.09	0.12	−0.07	0.09
Involvement with sponsee × sponsee–sponsor image congruence (ABS)	−0.06	0.02***	−0.07	0.02***	−0.05	0.02**	−0.05	0.02***
	$F = 128.50^{***}$		$F = 229.38^{***}$		$F = 183.73^{***};$		$F = 256.03^{***}$	
	$\text{Adj } R^2 = 0.443$		$\text{Adj } R^2 = 0.528$		$\text{Adj } R^2 = 0.533$		$\text{Adj } R^2 = 0.489$	

Notes: ***, **, and * = statistically significant at the 1, 5 and 10% level, respectively; $\text{Adj } R^2$ = adjusted coefficient of determination



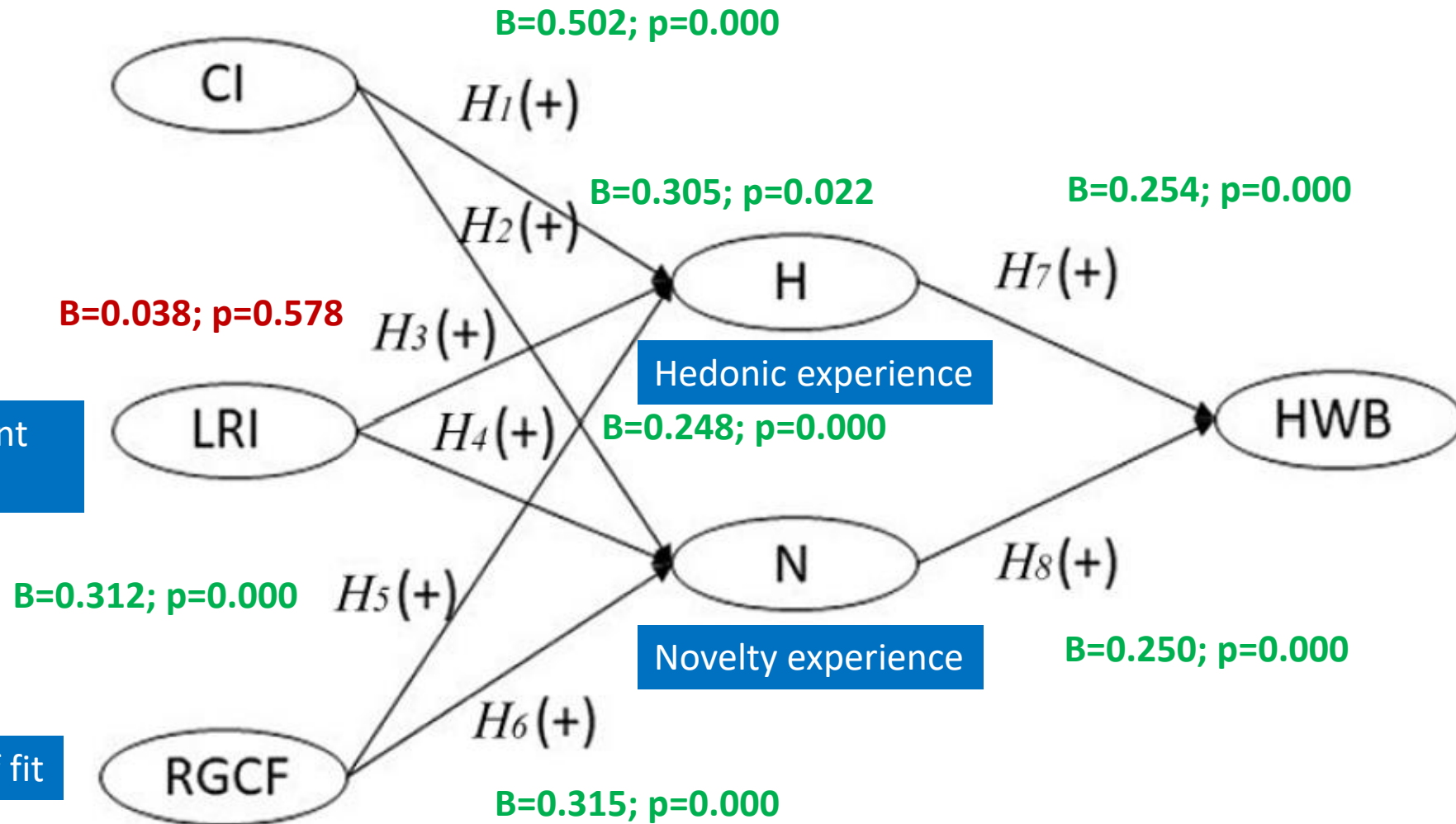
Rodrigues, P., Brochado, A., Sousa, A., Pinto Borges, A., & Barbosa, I. (2023). What's on the menu? How celebrity chef brands create happiness. *European Journal of Marketing*, 57(9), 2513–2543.

<https://doi.org/10.1108/EJM-12-2021-0988>

Chef image

Luxury restaurant image

Restaurant-chef fit



Happiness and wellbeing

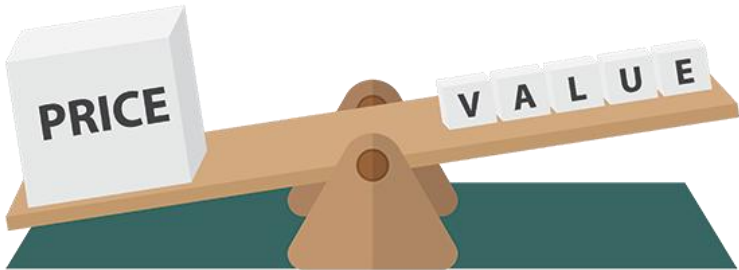
Rodrigues, P., Brochado, A., Sousa, A., Pinto Borges, A., & Barbosa, I. (2023). What's on the menu? How celebrity chef brands create happiness. *European Journal of Marketing*, 57(9), 2513–2543. <https://doi.org/10.1108/EJM-12-2021-0988>



Magic Prices



Price & Brand Selection



BUY TICKETS - 1 - 2 - 3 » **SECTOR SELECTION** - 4 - SHOPPING CART - CONCLUSION

CONCERTO SINFÓNICO - 24 JUN. 2023 | TEATRO NACIONAL DE SÃO CARLOS | SALA PRINCIPAL | SATURDAY | 24 JUN 2023 | 21.00

PALCO

VIEW HALL 360

PREVIOUS

SECTOR	PRICE	FREE
Stalls	30.00€	Free
3rd Left Balcony	20.00€	Full
3rd Left Balcony	25.00€	Free
3rd Right Balcony	20.00€	Full
3rd Right Balcony	25.00€	Free
4th Left Balcony	20.00€	Full
4th Left Balcony	25.00€	Free
4th Right Balcony	20.00€	Full
4th Right Balcony	25.00€	Free
Left Cabins	30.00€	Free
Right Cabins	25.00€	Full
Right Cabins	30.00€	Free
1st Left Cabins	25.00€	Free
1st Left Cabins	30.00€	Free
1st Right Cabins	25.00€	Full
1st Right Cabins	50.00€	Free
2nd Left Cabins	25.00€	Free
2nd Right Cabins	25.00€	Free
3rd Left Cabins	20.00€	Full
3rd Left Cabins	25.00€	Free
3rd Right Cabins	20.00€	Full
3rd Right Cabins	25.00€	Free
4th Left Cabins	20.00€	Free
4th Right Cabins	20.00€	Free



Pricing Decisions

Superior Room

35 m² / 377 sq. ft. Up to 2 guests

Spacious Marble bathroom

When you first dreamt of a romantic getaway in the historic heart of Paris, this was the luxury room you had in mind. Marble fireplace, elaborate mirrors, sumptuous bathroom, langorous light peeking through elegant...

From € 1,800 / Night

See more details → Book

Suite Impériale

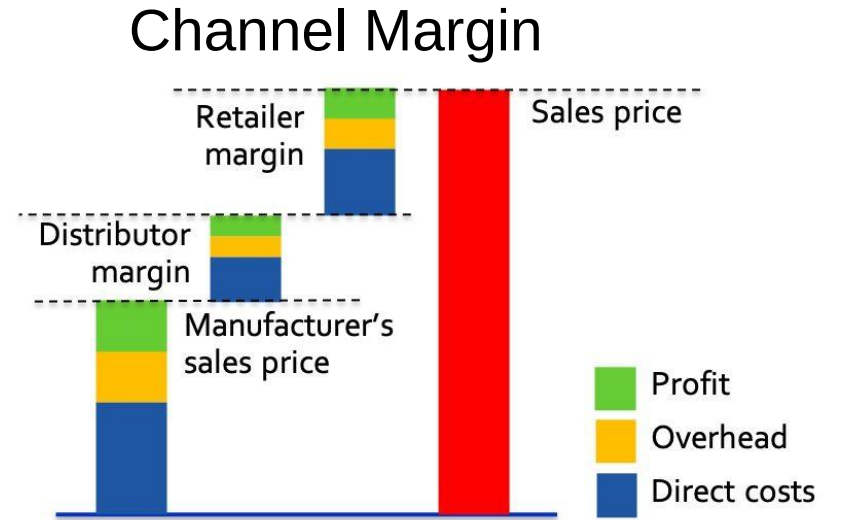
218 m² / 2347 sq. ft. Up to 3 guests

Vendôme Square view High ceilings Private kitchen Private dining room 2 bedrooms Separate living room

Reviving the full splendor of Versailles in central Paris, the Suite Impériale is the jewel in our crown. Its décor has everything to enchant fans of history and fine living alike: an extraordinary space, bas-reliefs, listed woodwork, and...

From € 40,000 / Night

Select a date Filters



Store Location



Retail Coverage



Type of Distribution





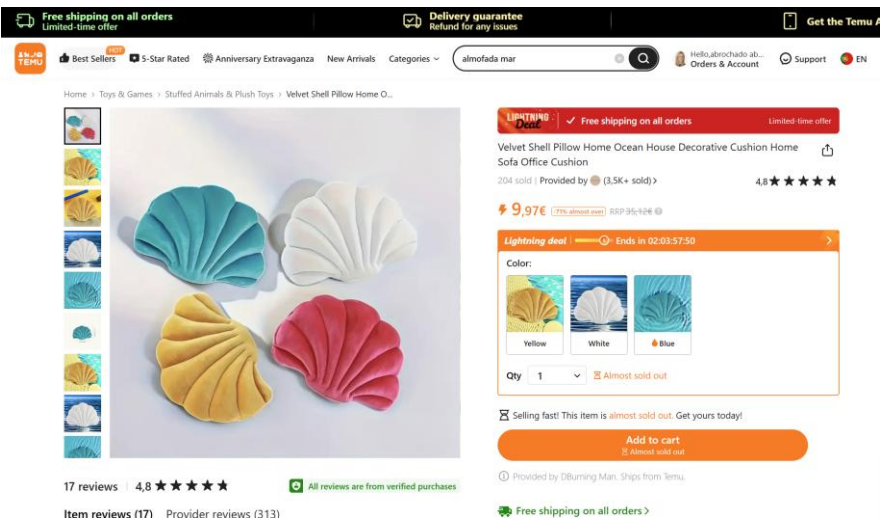
Message Content



Promotion Mix



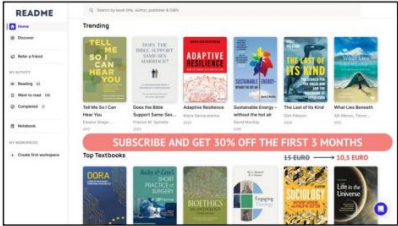
Time Scarcity



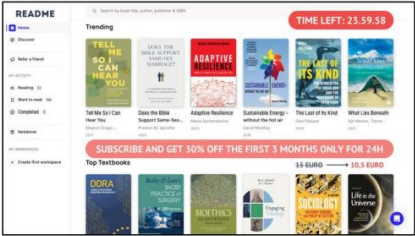
Sales Promotion Effectiveness



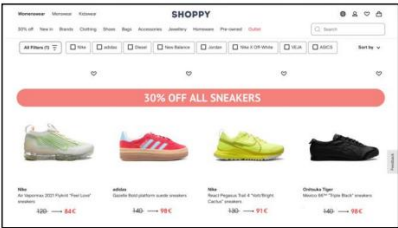
Figure 2. Product categories and stimulus material



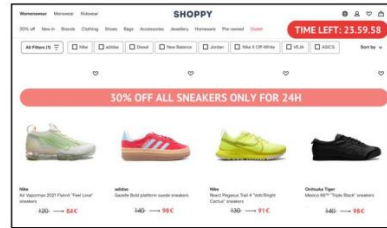
Product 1 (Control)



Product 1 (TS)



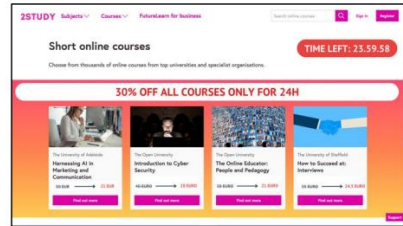
Product 2 (Control)



Product 2 (TS)



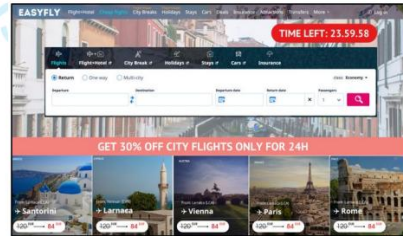
Product 3 (Control)



Product 3 (TS)

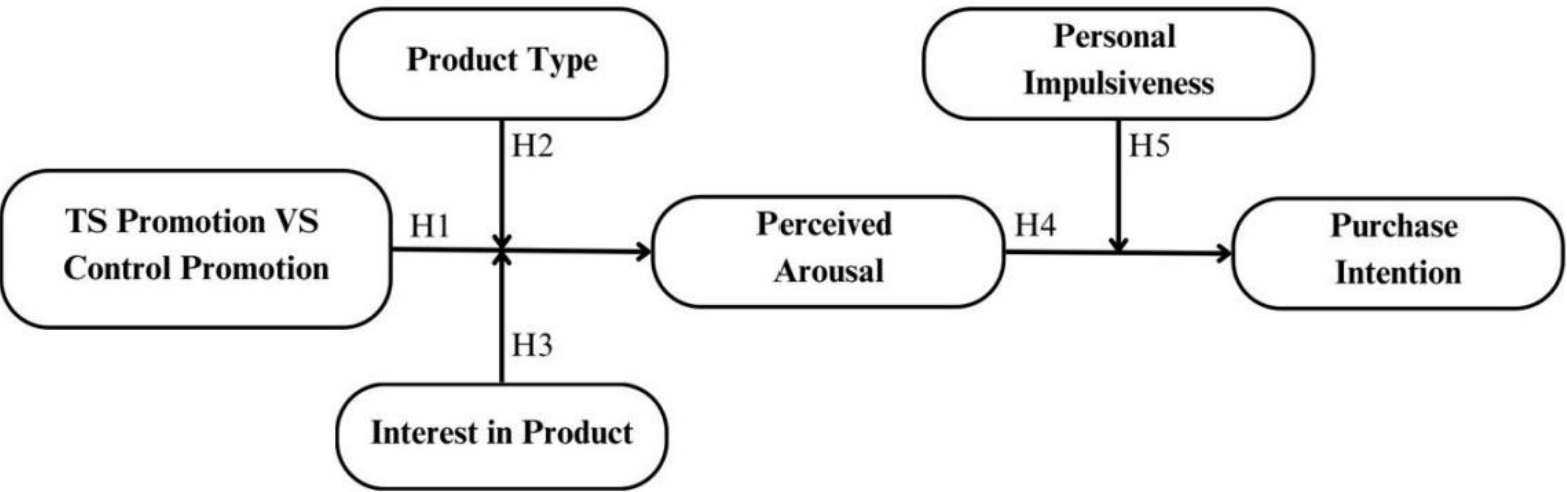


Product 4 (Control)



Product 4 (TS)

Time Scarcity



Análise bivariada (teste de hipóteses) e multivariada (MANOVA e análise de regressão)

Brochado, A., & Shynkarenko, A. (2026). Breaking the clock: Rethinking time-scarcity promotions for Gen Z online consumers. *Young Consumers: Insight and Ideas for Responsible Marketers*, 27(1), 67–86. <https://doi.org/10.1108/YC-01-2025-2379>

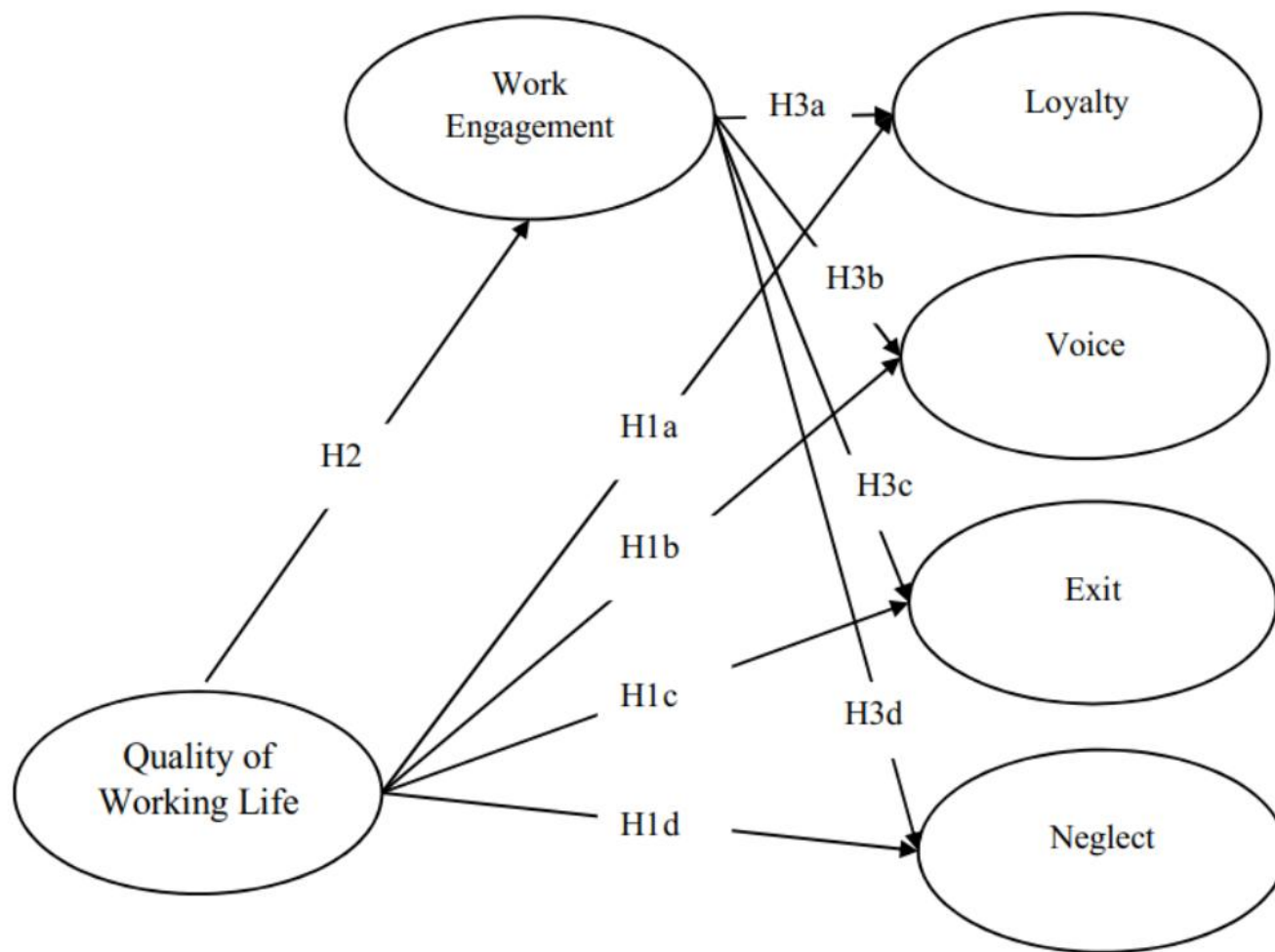


Internal Marketing



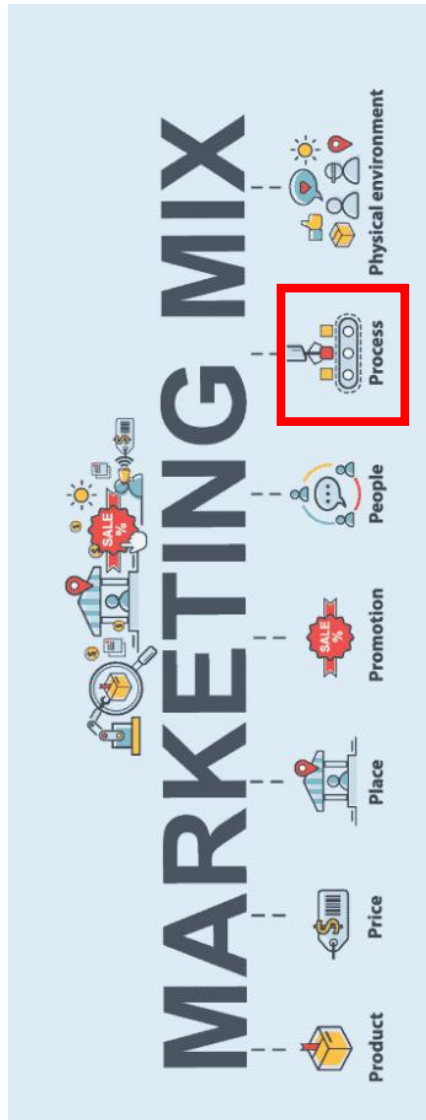
Mystery Client





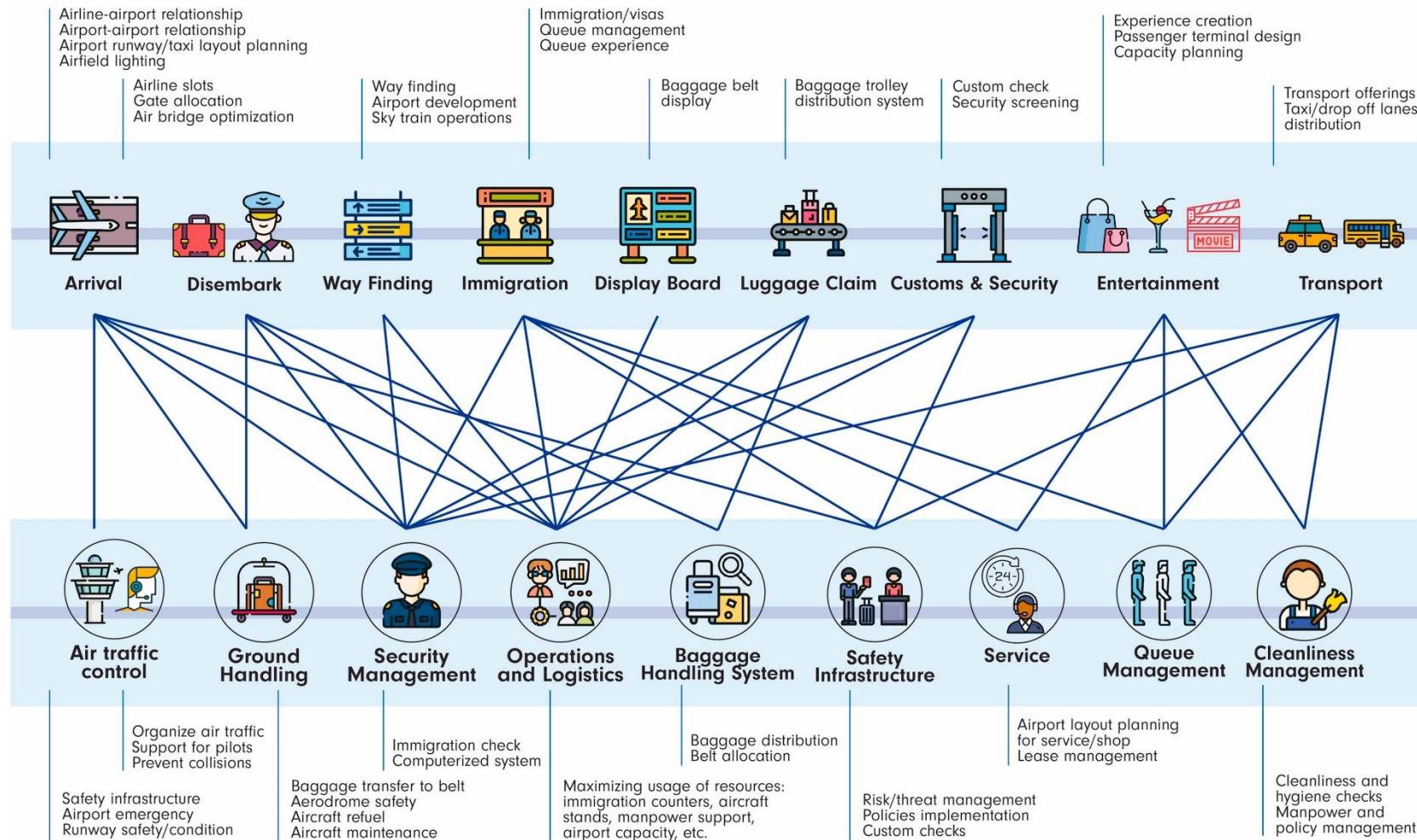
Análise multivariada, equações estruturais
(PLS-PM)

Wahlberg, T. A., Ramalho, N., & Brochado, A. (2017). Quality of working life and engagement in hostels. *Tourism Review*, 72(4), 411–428. <https://doi.org/10.1108/TR-03-2017-0050>



Customer Journey Maps

Arriving Passenger User Journey



Icons

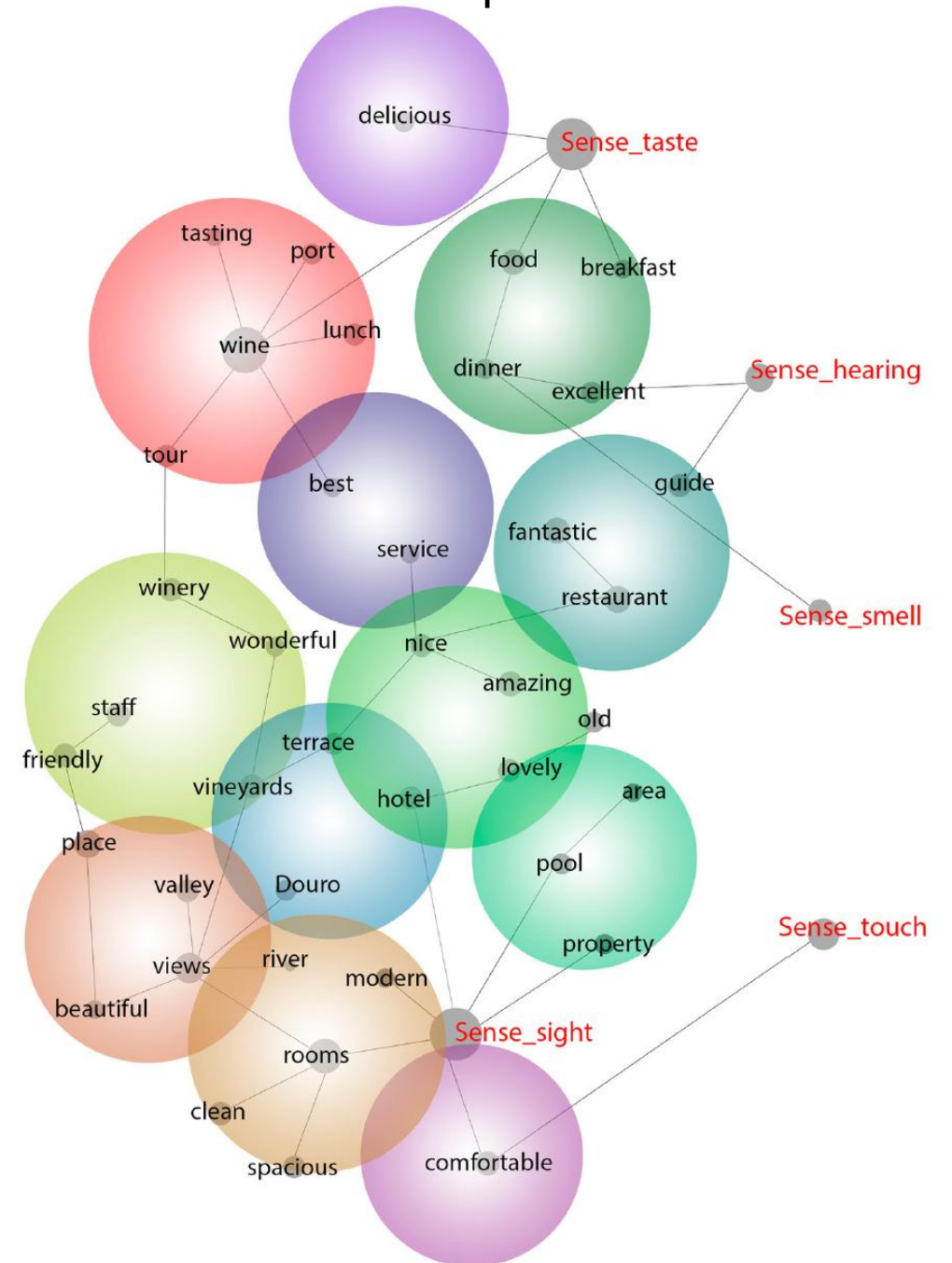
- ★ Moment of Truth
- ♥ Wow Factor
- ✈ Branded Communic...
- ⌚ Time Sensitive
- 📁 Legal Aspect
- ⚠ Improvement Opport...
- 😡 Pain Point

Support

Fonte: <https://doi.org/10.1016/j.jairtraman.2020.101919>



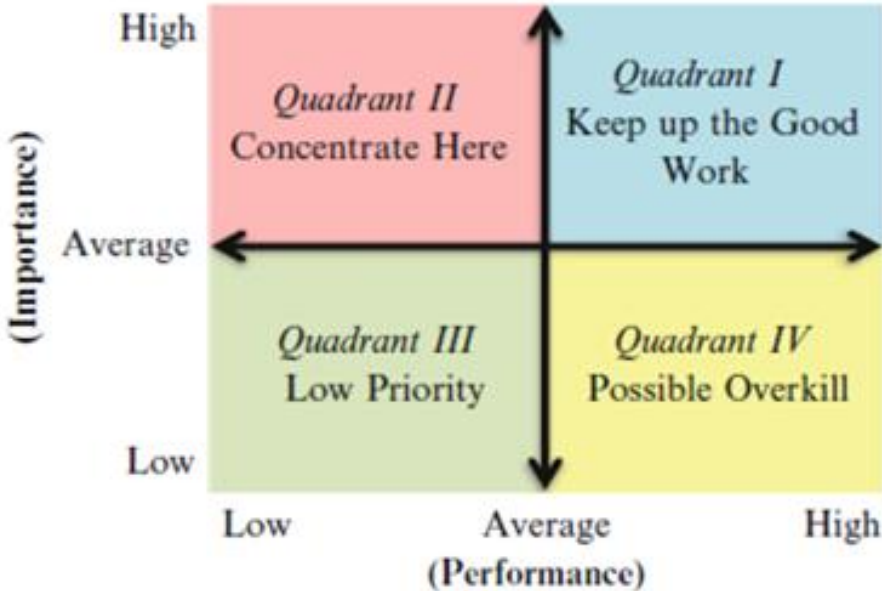
Sensorial Experience



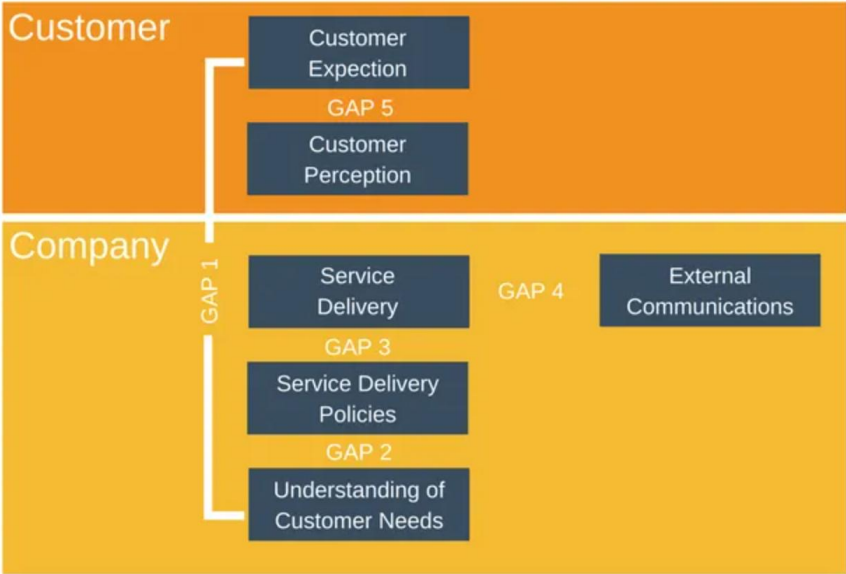
Brochado, A.; Stoleriu, O. & Lupu. C. (2021) Wine tourism: a multisensory experience, Current Issues in Tourism, 24:5, 597-615, DOI: [10.1080/13683500.2019.1649373](https://doi.org/10.1080/13683500.2019.1649373)

Service Quality

CUSTOMER SERVICE



Gap Model of Service Quality



Análise multivariada, Análise Componentes Principais

Items	M	SD	F1	F2	F3	F4	F5	F6
This hostel has the right environment to meet new people	6.31	0.95	0.85					
I generally liked the people I met here during my stay	6.38	0.95	0.60					
I had fun at this hostel	6.55	1.02	0.64					
There is a large communal room/space	6.32	0.90	0.72					
This hostel is to attractions, bars and restaurants	6.05	1.15		0.77				
This hostel is close to transportation: metro, bus, tram	6.30	0.95		0.69				
This hostel is close to the city center	6.09	1.04		0.74				
This hostel promotes group activities (pub-crawl, city tours)	5.73	1.06		0.75				
The staff was friendly and polite	6.50	0.70			0.62			
The staff knows Lisbon well and are helpful	6.53	0.66			0.64			
The staff made my stay a better experience here	6.39	0.83			0.83			
The staff provides an efficient service	6.45	0.76			0.89			
The rooms/dorms are clean	6.27	0.86				0.89		
The bathrooms are clean	6.18	0.94				0.64		
The kitchen is clean	6.18	0.92				0.74		
The social area/communal room is clean	6.18	0.88				0.87		
The hostel is located in a safe neighborhood	5.79	1.12					0.90	
There is a 24-hour front desk	6.63	0.92					0.69	
I felt safe in the hostel	6.24	0.86					0.79	
The hostel has private showers and toilets	5.86	1.41					0.59	
The hostel provides good Internet and computer facilities	6.31	1.05						0.70
The hostel provides a comfortable ambiance	6.41	0.81						0.65
The kitchen is well equipped for cooking	6.29	0.93						0.69
The hostel has an appealing decorative design	6.47	0.91						0.89
The interior design of the rooms is good	6.38	0.94						0.86
Eigenvalues			9.22	2.59	1.68	1.52	1.44	1.37
Variance explained (%)			26.35	7.41	4.79	4.35	4.12	3.92

Notes: M = mean; SD = standard deviation; F1 = atmosphere; F2 = location and city connection; F3 = staff; F4 = cleanliness; F5 = security; F6 = facilities

Brochado, A., Rita, P., & Gameiro, C. (2015). Exploring backpackers' perceptions of the hostel service quality. *International Journal of Contemporary Hospitality Management*, 27(8), 1839–1855.

<https://doi.org/10.1108/IJCHM-03-2014-0145>

Service Quality and Service Experience [Social Media Marketing Research]

10/10

"one of the best airports in Europe"

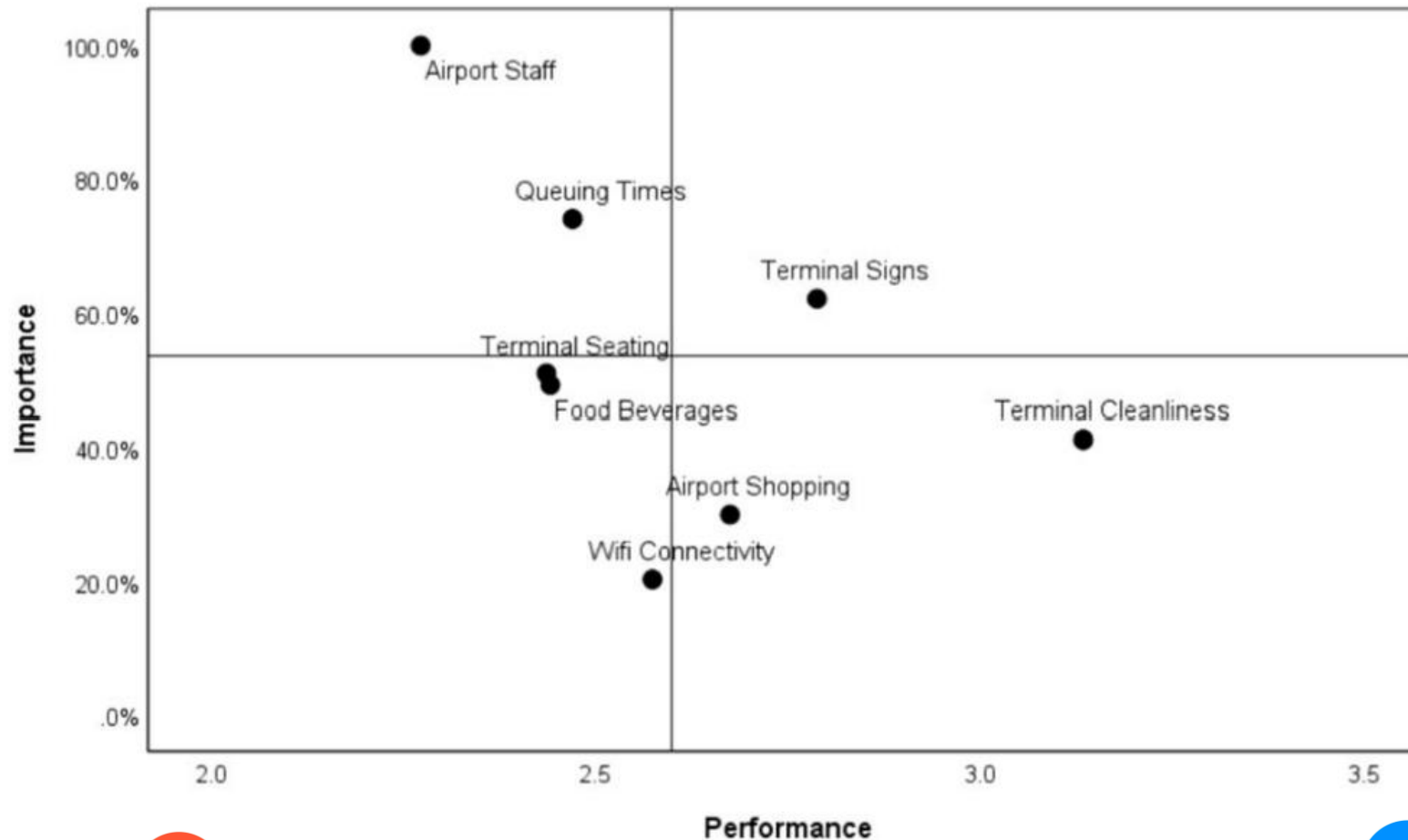
14 reviews  Carlos Brigolas (Portugal) 9th September 2017

 **Verified Review** | Munich Airport is one of the best airports in Europe. Time after time I come to this airport and it all works even for the passengers in economy class. They have electric power, USB connections on the waiting chairs. All is clean, functional modern, it makes you feel well and relax for a few minutes of your life. The shops in any of the terminals are perfectly located, the cash machines, all in the right place. Is not that I don't try to find imperfections, I fortunately have a critical eye, but there is not that much to find in Munich airport. The train system runs every few minutes, even the passport control officers smile and are happy, to be honest I will be happy also to work in place like this. The public bathroom rooms on the corridors are clean. The train was also very clean, windows, all.

Experience At Airport	Arrival Only
Date Visit	September 2017
Type Of Traveller	Business
Queuing Times	★★★★★
Terminal Cleanliness	★★★★★
Terminal Seating	★★★★★
Terminal Signs	★★★★★
Food Beverages	★★★★★
Airport Shopping	★★★★★
Wifi Connectivity	★★★★★
Airport Staff	★★★★★
Recommended	

- 5 Stars ★★★★★
- 4 Stars ★★★★★
- 3 Stars ★★★★★
- 2 Stars ★★★★★
- 1 Star ★★★★★





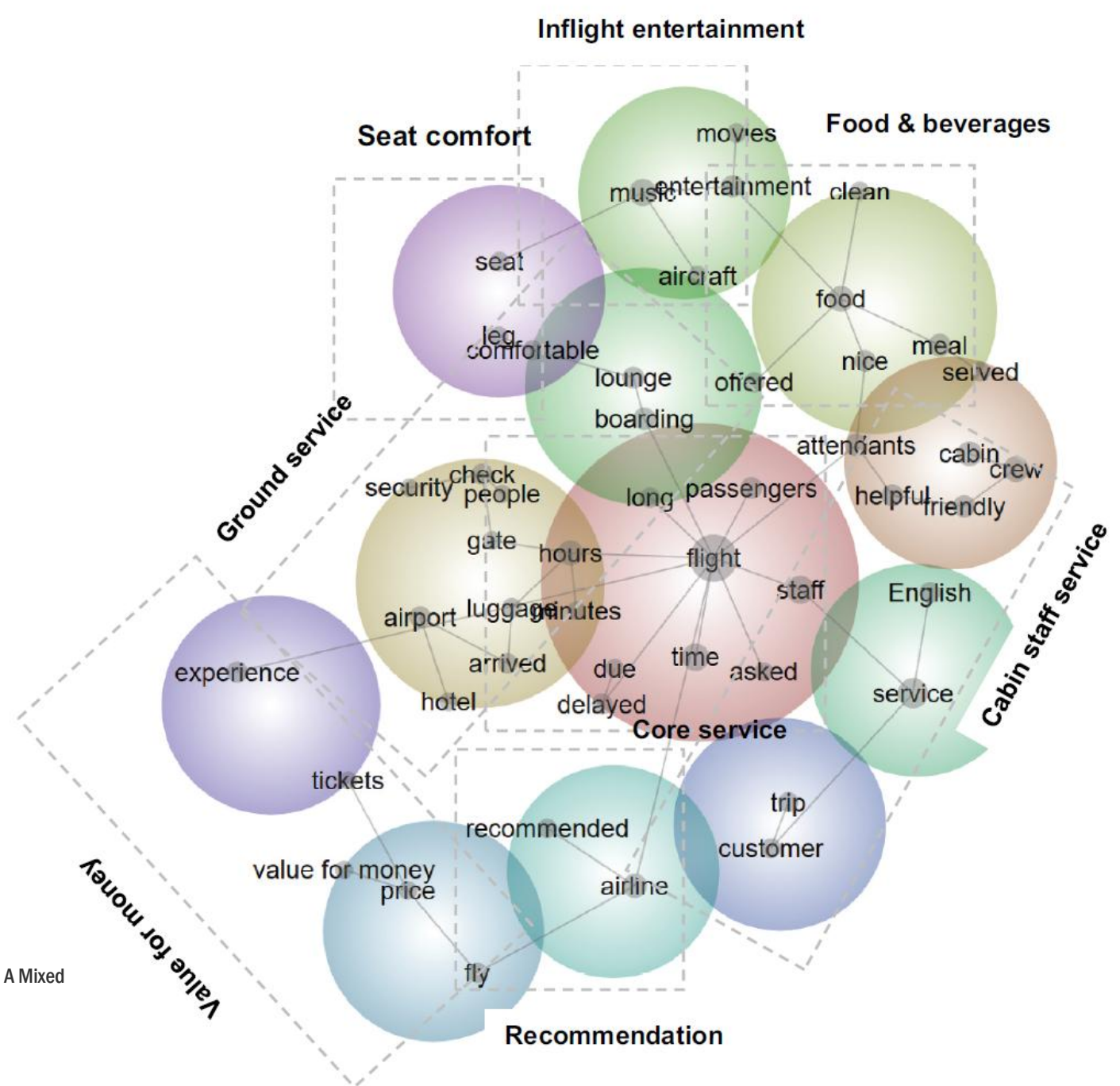
Análise multivariada
(Importance)

Análise bi-variada (IPA Map)



Brochado, A., Veríssimo, J. M. C., & Lupu, C. (2024). Airport experience assessment based on Skytrax online ratings and importance-performance analysis: A segmentation approach. *Journal of Marketing Analytics*. Advance online publication. <https://doi.org/10.1057/s41270-024-00326-x>

Service Quality and Service Experience [Social Media Marketing Research]



Brochado, A., Duarte, M., & Mengyuan, Z. (2022). Passengers' Perceptions of Chinese Airlines' Service Quality: A Mixed Methods Analysis of User-generated Content. *Journal of China Tourism Research*, 19(3), 677–699.
<https://doi.org/10.1080/19388160.2022.2122647>

Table 2. Descriptive statistics.

Variable	Descrip-tive Statistics	Type of Traveler					ANOVA (F)	Chi-squared (χ^2)
		All	Solo	Couple	Family	Business		
Overall rating	M	6.86	6.99	6.17	6.93	7.08	$F = 5.47$	***
	SD	3.07	2.99	3.29	3.10	2.97		
Seat comfort	M	3.69	3.70	3.46	3.75	3.81	$F = 10.74$	***
	SD	1.27	1.25	1.37	1.26	1.22		
Cabin staff service	M	4.02	4.12	3.63	4.03	4.09	$F = 4.53$	***
	SD	1.43	1.36	1.56	1.40	1.43		
Food and beverages	M	3.50	3.55	3.25	3.54	3.55	$F = 5.30$	***
	SD	1.39	1.35	1.46	1.35	1.41		
Inflight entertainment	M	3.37	3.45	3.13	3.44	3.33	$F = 11.22$	***
	SD	1.32	1.27	1.42	1.31	1.35		
Ground service	M	3.58	3.69	3.16	3.57	3.66	$F = 4.83$	***
	SD	1.51	1.48	1.60	1.53	1.43		
Value for money	M	3.94	4.02	3.71	3.87	3.99	$F = 7.27$	***
	SD	1.37	1.30	1.51	1.41	1.35		
Recommend (a)	N	1,498	719	218	231	330	$\chi^2 = 22.00$	***
	%	73.60	75.70	63.60	74.50	76.40		

^AAssessed on a binary scale (1 = 'Recommended'; 0 = 'Not recommended'); F = F statistic; χ^2 = Chi-squared statistic; *, **, and *** statistically significant at the 5%, 1%, and 0.1% level, respectively.

Análise bivariada, teste de hipóteses, amostras independentes

Table 3. Multiple linear regression.

	Overall		Solo		Couple		Family		Business	
	<i>B</i>		<i>B</i>		<i>B</i>		<i>B</i>		<i>B</i>	
	<i>(t)</i>		<i>(t)</i>		<i>(t)</i>		<i>(t)</i>		<i>(t)</i>	
(Constant)	−0.190	***	−0.210	***	−0.178	***	−0.178	***	−0.169	***
	(−25.857)		(−19.046)		(−10.458)		(−9.561)		(−10.374)	
Seat comfort	0.028	***	0.020	***	0.043	***	0.032	***	0.021	**
	(9.158)		(4.673)		(5.638)		(3.876)		(3.144)	
Cabin staff service	0.048	***	0.045	***	0.036	*	0.052	***	0.060	***
	(15.497)		(10.322)		(4.527)		(6.511)		(8.639)	
Food and beverages	0.024	***	0.027	***	0.032	***	0.016	*	0.016	*
	(7.975)		(6.362)		(4.107)		(2.289)		(2.361)	
Inflight entertainment	0.016	***	0.022	***	0.014	***	0.015	*	0.012	
	(5.597)		(5.363)		(2.167)		(2.354)		(1.93)	
Ground service	0.043	***	0.045	***	0.051	***	0.048	***	0.029	***
	(16.594)		(11.914)		(7.784)		(6.793)		(5.145)	
Value for money	0.073	***	0.077	***	0.056	***	0.073	***	0.088	***
	(23.965)		(17.492)		(7.597)		(8.398)		(12.766)	
ANOVA <i>F</i>	2871.490	***	1365.15	***	472.88	***	468.166	***	579.98	***
<i>R</i> -squared	89%		90%		89%		90%		89%	

B = beta coefficient; *t* = test statistic; *, **, and *** statistically significant at the 5%, 1%, and 0.1% level.

Análise multivariada, regressão múltipla

Table 4. Logistic regression coefficients.

	Overall		Solo		Couple		Family		Business	
	<i>exp(B)</i>		<i>exp(B)</i>		<i>exp(B)</i>		<i>exp(B)</i>		<i>exp(B)</i>	
	<i>(Wald)</i>		<i>(Wald)</i>		<i>(Wald)</i>		<i>(Wald)</i>		<i>(Wald)</i>	
Constant	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***
	(212.002)		(97.583)		(36.208)		(27.726)		(36.592)	
Seat comfort	1.678	***	1.412		2.839	***	2.110		1.142	
	(10.96)		(1.934)		(7.598)		(2.168)		(0.122)	
Cabin staff service	2.189	***	2.190	***	1.486		2.304	*	2.815	***
	(32.468)		(14.732)		(1.537)		(3.77)		(10.536)	
Food and beverages	1.831	***	2.120	***	1.755		1.760		1.603	
	(14.707)		(9.41)		(2.108)		(1.821)		(1.929)	
Inflight entertainment	0.736		0.750		0.827		0.996		0.679	
	(3.818)		(1.442)		(0.244)		(0.001)		(1.108)	
Ground service	2.506	***	2.794	***	2.920	**	1.894	***	2.171	***
	(50.05)		(27.662)		(9.891)		(2.992)		(7.227)	
Value for money	5.663	***	5.690	***	5.626	***	5.309		7.371	***
	(84.202)		(39.319)		(15.257)		(9.938)		(16.006)	
% correct classifications	97%		96.7%		96%		98%		97%	
Nagelkerke <i>R</i> -squared	91%		91%		93%		92%		91%	

Exp(B) = odds ratio; Wald = Wald chi-squared test.

Análise multivariada, regressão logística

Consumer Behavior



Market Segmentation



Análise Multivariada, Cluster Analysis

