Impact of Sentiment Adjectives on Recruitment Language: A Corpus-Based Comparison of Chinese and Spanish Job Ads

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Abstract. Adjectives play a key role in shaping recruitment language by influencing how job requirements and company culture are perceived. This study applies a corpus-based critical discourse analysis (CDA) to examine the use of sentiment adjectives in Chinese and Spanish job advertisements. It analyzed 160 job ads from China's 51job.com and Spain's Indeed platform, focusing on STEM and non-STEM fields. Using tools like TreeTagger and Rost CM6, it conducted frequency and sentiment analysis to see how adjectives reflect work environments and potential biases. The results show a strong preference for positive adjectives in Chinese ads, while Spanish ads feature a more balanced mix of neutral and positive adjectives. Interviews with recent graduates further highlight how these language patterns affect their perceptions of job opportunities. This study provides useful insights for job seekers and employers on how to write and interpret recruitment ads effectively.

Keywords: Sentiment analysis, job advertisements, corpus study, adjective, China, Spain.

1. Introduction

Graduate employment has always been a key global issue regardless of the country, as employment rates directly impact economic stability and public well-being. Over the past few decades, the job market has seen an influx of highly skilled candidates alongside rapid technological advancements (Colbert, Yee, and George, 2016; Mundial, 1997; Sankoff and Labov, 1979), leading to an oversupply of labor. In this competitive market, unemployed graduates need to quickly identify suitable employers, making the ability to interpret recruitment advertisements crucial effectively. These ads inform potential candidates and shape their perceptions of the workplace and the relevance of the job role (Allen, Scotter, and Otondo, 2004; Roberson, Collins, and Oreg, 2005).

As a form of discourse, recruitment advertisements follow specific linguistic and ideological patterns that shape how information is presented and understood (Coulthard and Condlin, 2014; Fuller, 2018). In this concise discourse, adjectives, which describe or modify nouns, play a key role by highlighting the qualities of candidates and the nature of the workplace. This enhances the persuasive power of the text (Baker, 2020; Bartsch, 2005; Bolinger, 1967; Durán-Muñoz, 2019; Fairclough, 2001; Kamp, 2013; Pierini, 2009). Since adjectives cannot be categorized solely by form and often serve as elliptic attributive modifiers, their usage is frequently subjective. Adjectives can function both attributively and predicatively, be modified by intensifiers, and take comparative or superlative forms (Kamp, 2013; Quirk, Greenbaum, Leech, and Svartvik, 1985, p. 403; Szabó, 2001). Through sentiment analysis of adjectives, we can detect subjective expressions in texts—words and phrases that convey opinions, emotions, or attitudes—by assigning polarity (positive, negative, or neutral) and intensity, helping to identify the objective or subjective tendency of the document(Benamara, Cesarano, Picariello, Recupero, and Subrahmanian, 2007).

This study compares sentiment adjectives in STEM and non-STEM job ads in China and Spain to understand how these words influence job seekers' perceptions of the work environment. This research fills a gap by conducting a comparative analysis of sentiment adjectives in Chinese and Spanish job ads, focusing on STEM and non-STEM sectors. The study aims to answer two main

questions: (1) what are the differences in the use of sentiment adjectives between Chinese and Spanish job ads in STEM and non-STEM fields? (2) How do these differences reflect broader cultural and linguistic trends in recruitment practices in the two countries?

2. Methodology

2.1. Research Approach

This study adopts a pragmatist approach, combining qualitative and quantitative methods to understand the research problem comprehensively. Flexibility and multiple perspectives were employed by conducting interviews with recent university graduates in Spain and China, while quantitative methods were used to analyze a corpus of recruitment advertisements. Combining these two approaches enhances the reliability and validity of the research findings (Yin, 2015; Merriam and Tisdell, 2015).

2.2. Research population and sampling

Defining the research population is critical in ensuring the study's representativeness (Murphy, 2016). In linguistics, achieving social representativeness can be challenging, as the variability in language use across different communities needs to be considered (Buchstaller and Khattab, 2013) (Sankoff and Labov, 1979). This study defines the research population as the adjectives used in STEM and non-STEM job advertisements on Chinese and Spanish recruitment websites. The data was sourced from China's 51job.com and Spain's Indeed platform. 160 job advertisements were selected, with 80 ads from each country evenly split between STEM and non-STEM fields. This sampling strategy was chosen to provide a reliable basis for analyzing how sentiment adjectives are used in recruitment discourse, following the guidelines suggested by Murphy (2016).

2.3. Data collection instruments and approach

Before data collection, this study interviewed five female Spanish graduates and six female Chinese graduates (one of whom is a postgraduate student) to gain insights into their job-seeking experiences and perceptions of the employment landscape. The interviews were structured to capture their views on how recruitment ads influence their job search, thereby providing qualitative data that complements the corpus analysis. The recorded information, summarized in Table 1, was instrumental in understanding the challenges faced by these graduates (Yin, 2015).

Table 1. Interviews with Spanish and Chinese graduates (statistical time: last 6 months).

Classify	Spain	China
Majors belong steam	2	3
Majors belong non-steam	3	3
Graduate	5	5
Postgraduate	0	1
Times of sending resume(average)	13	20
Times of interview(average)	3	4

This study employed a corpus-based method to investigate the usage of adjective words in discourse on Chinese and Spanish recruitment websites. To accomplish this, the initial step involved establishing a database. The data were sourced from China's 51job.com and Spain's Indeed job site. The initial selection consisted of eighty Chinese recruitment advertisement texts and eighty Spanish recruitment texts, as outlined in Table 2. From those 160 advertising texts as the data obtained, it converted into ".txt" format. TreeTagger used all the plain English text data to tag different parts of speech. Likewise, all the Chinese plain texts were tagged by RostCM 6.0 (2010) to give part-of-speech tagging. Afterward, all the texts were analyzed by Laurence Anthony (2023) AntConc software 4.1.1. At the same time, RStudio software version 4.0.2 for Mac was utilized to calculate

the number of adjectives, while the RostCM 6.0 system was employed for sentiment analysis and presenting the findings.

Table 2. The number of China and Spain recruitment advertisements.

CLASS	SPAIN	CHINA
STEM	40	40
NON-STEM	40	40

3. Data analysis and Discussion

3.1. Frequency used words

160 recruitment advertisements were collected from China's 51job.com and Spain's Indeed platform, forming two distinct corpora for analysis. The collected texts were processed using AntConc software (version 4.1.1), facilitating the identification and extraction of adjectives, as illustrated in Figure 2. Following this, the frequency of adjectives was computed using RStudio (version 4.0.2), with the results detailed in Figure 1. For the Chinese non-STEM job advertisements, the corpus comprised 11,360 tokens, encompassing 201-word types, of which 195 were adjectives. In comparison, the Chinese STEM advertisements comprised 10,750 tokens with 140-word types and 136 adjectives. Similarly, the Spanish non-STEM corpus included 5,888 tokens with 1,452-word types, including 700 adjectives, while the Spanish STEM corpus contained 7,202 tokens, with 1,617 word types and 737 adjectives, as depicted in Figure 1.

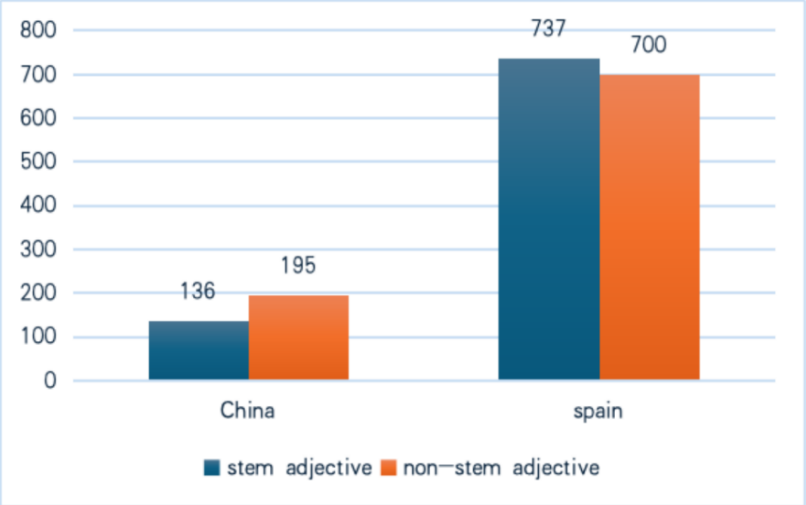

Figure 1. Token, Word Types, number of adjectives of China and Spain.

1	sp-stem-...	esolved_ VBN_ resolve_ to_ TO_ to_ appropriate_	JJ_	appropriate_ levels_ NNS_ level_ and_ CC_ and_ i
2	sp-stem-...	esolved_ VBN_ resolve_ to_ TO_ to_ appropriate_	JJ_	appropriate_ levels_ NNS_ level_ and_ CC_ and_ i
3	sp-stem-...	ical_ functions_ NNS_ function_ , , , appropriate_	JJ_	appropriate_ measures_ NNS_ measure_ from_ IN
4	sp-stem-...	ical_ functions_ NNS_ function_ , , , appropriate_	JJ_	appropriate_ measures_ NNS_ measure_ from_ IN
5	sp-stem-...	CC_ and_ develops_ VBZ_ develop_ appropriate_	JJ_	appropriate_ patient_ JJ_ patient_ care_ NN_ care_
6	sp-stem-...	Ensures_ VBZ_ ensure_ all_ DT_ all_ appropriate_	JJ_	appropriate_ patient_ JJ_ patient_ related_ JJ_ rela
7	sp-stem-...	rocedure_ regarding_ VBG_ regard_ appropriate_	JJ_	appropriate_ action_ NN_ action_ to_ TO_ to_ be_
8	sp-stem-...	NN_ therapy_ making_ VBG_ make_ appropriate_	JJ_	appropriate_ adjustments_ NNS_ adjustment_ an
9	sp-stem-...	ian_ NN_ physician_ and_ CC_ and_ appropriate_	JJ_	appropriate_ blood_ NN_ blood_ supplier_ NN_ s
10	sp-stem-...	lysis_ NN_ analysis_ and_ CC_ and_ appropriate_	JJ_	appropriate_ business_ NN_ business_ excellence
11	sp-stem-...	l_ CC_ and_ ensures_ VBZ_ ensure_ appropriate_	JJ_	appropriate_ daily_ JJ_ daily_ completion_ NN_ co
12	sp-stem-...	_ and_ completes_ VBZ_ complete_ appropriate_	JJ_	appropriate_ documentation_ NN_ documentatio
13	sp-stem-...	l_ CC_ and_ ensures_ VBZ_ ensure_ appropriate_	JJ_	appropriate_ follow_-through_ NNS_ follow_-thr

1	sp-non ...	ıent_ NN_ agreement_ with_ IN_ with_ strong_	JJ_	strong_ academic_ JJ_ academic_ results_ NNS_
2	sp-non ...	ıent_ NN_ agreement_ with_ IN_ with_ strong_	JJ_	strong_ academic_ JJ_ academic_ results_ NNS_
3	sp-non ...	ɔplement_ VB_ supplement_ a_ DT_ a_ strong_	JJ_	strong_ academic_ JJ_ academic_ background_
4	sp-non ...	aduate_ , , , with_ IN_ with_ a_ DT_ a_ strong_	JJ_	strong_ academic_ JJ_ academic_ record_ NN_ r
5	sp-non ...	l_ CC_ and_ influential_ JJ_ influential_ Strong_	JJ_	strong_ analytical_ JJ_ analytical_ skills_ NNS_ s
6	sp-non ...	N_ communication_ skills_ NNS_ skill_ Strong_	JJ_	strong_ analytical_ JJ_ analytical_ skills_ NNS_ s
7	sp-non ...	s_ NNS_ brand_ . SENT_ . </s_> <s_> Strong_	JJ_	strong_ analytical_ JJ_ analytical_ and_ CC_ and
8	sp-non ...	MD_ would_ be_ VB_ be_ an_ DT_ an_ strong_	JJ_	strong_ asset_ NN_ asset_ (((basic_ JJ_ basic_
9	sp-non ...	d_ MD_ would_ be_ VB_ be_ a_ DT_ a_ strong_	JJ_	strong_ asset_ NN_ asset_ . SENT_ . </s_> <s_
10	sp-non ...	NN_ playbook_ . SENT_ . </s_> <s_> Strong_	JJ_	strong_ communication_ NN_ communication_
11	sp-non ...	CC_ and_ assertive_ JJ_ assertive_ ; : ; Strong_	JJ_	strong_ communication_ NN_ communication_
12	sp-non ...	_ to_ demonstrate_ VB_ demonstrate_ strong_	JJ_	strong_ customer_ NN_ customer_ service_ NN
13	sp-non ...	_ to_ demonstrate_ VB_ demonstrate_ strong_	JJ_	strong_ customer_ NN_ customer_ service_ NN

Figure 2. Use of the Term ‘adjectives’ in English texts.

Figure 3 illustrates the distribution of adjectives within Chinese and Spanish recruitment advertisements. In the Chinese corpus, the STEM advertisements contained 136 adjectives, while the non-STEM advertisements included 195 adjectives. These figures represent approximately 1.1% of the 11,360 tokens and 1.9% of the 10,750 tokens. In contrast, the Spanish STEM advertisements revealed 737 adjectives, accounting for 10% of the 7,202 tokens, whereas the Spanish non-STEM advertisements contained 700 adjectives, representing 12% of the 5,888 tokens. This comparison highlights the variance in adjective usage between STEM and non-STEM fields across the two languages.

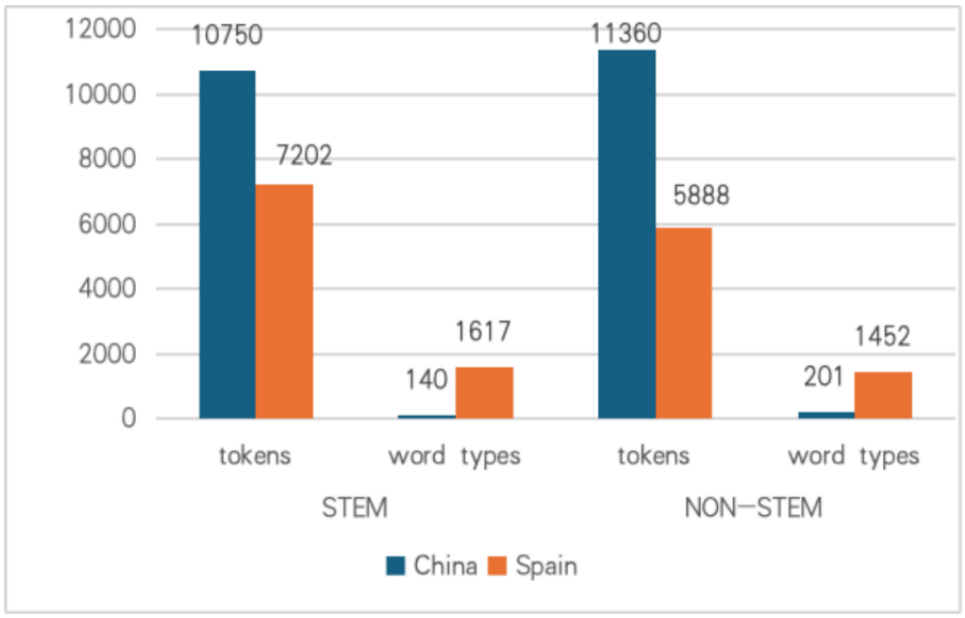

Figure 3. Adjectives in Chinese and Spanish recruitment advertising texts.

Chinese tokens are generally accepted to be approximately 1.6 times longer than their English counterparts (Petrov, La Malfa et al., 2024). After normalizing the data, it was observed that Chinese non-STEM texts (11,360 tokens) contain more tokens than Spanish non-STEM texts (9,420 tokens), whereas Chinese STEM texts (10,750 tokens) have slightly fewer tokens compared to Spanish STEM texts (11,523 tokens). This disparity is further reflected in adjectives, with Chinese non-STEM texts containing 195 adjectives compared to 700 in Spanish non-STEM texts, and Chinese STEM texts containing 136 adjectives compared to 737 in Spanish STEM texts. Despite the overall similarity in text length, Spanish recruitment advertisements employ nearly twice as many adjectives as their Chinese counterparts. This suggests that while the word token usage between STEM and non-STEM texts is relatively consistent across both languages, Spanish advertisements tend to use a significantly higher number of adjectives to describe job roles and responsibilities.

Table 3. List of adjectives frequency in the Chinese non-stem advertising.

Chinese	Eng Meaning of	pos	freq	rank
良好的	Good/advanced	adj	40	1
熟练	Skilled	adj	13	2
热爱	Passionate	adj	11	3
耐心	Patient	adj	6	4
不限	Unlimited	adj	6	5
熟练的	Skilled	adj	6	6
安全	Safe	an	5	7
优秀	Excellent	adj	5	8
扎实	Solid	adj	5	9
优秀的	Excellent	adj	5	10
良好	Good	adj	4	11
细致	Fine	adj	4	12
强烈	Strong	adj	4	13
精通	Proficient	adj	4	14
准确	Accurate	adj	4	15
踏实的	Diligent	adj	3	16
合同	contractual	adj	3	17
冲劲	Driven	adj	2	18
有效	Effective	adj	2	19
开朗	cheerful	adj	2	20
标准的	Standard	adj	2	21
严谨	Rigorous	adj	2	22
高效	Efficient	adj	2	23
细心的	Careful	adj	2	24
认真的	Conscientious	adj	2	25
重要	Important	adj	2	26
较好	Better	adj	2	27
很好的	Very good	adj	2	28
踏实	Diligent	adj	2	29
有责任心	Responsible	adj	2	30
整洁	Neat	adj	2	31
稳定	Stable	adj	1	32
先进	Advanced	adj	1	33
活泼	Lively	adj	1	34
诚恳	Sincere	adj	1	35
稳重	Stable	adj	1	36
努力的	Hardworking	adj	1	37
热情的	Enthusiastic	adj	1	38
优质的	High-quality	adj	1	39
能吃苦耐劳的	Hardworking	adj	1	40
简单	Simple	adj	1	41
敏感的	Sensitive	adj	1	42
敏捷的	Agile	adj	1	43
特效	Effective	adj	1	44
正直的	Integrity	adj	1	45
完美的	Perfect	adj	1	46
独到	Unique	adj	1	47
重大	Significant	adj	1	48
落实	Realized	adj	1	49
勤奋的	Hardworking	adj	1	50
公立	Public	adj	1	51
浓厚	Strong	adj	1	52

具体	Specific	adj	1	53
品行端正的	of good character	adj	1	54
合理的	Reasonable	adj	1	55
精准	precise	adj	1	56
严谨的	Rigorous	adj	1	57
发单	Billing	adj	1	58
快捷	Fast	adj	1	59
敏锐	Sharp	adj	1	60
有韧劲	Tough	adj	1	61
完整	Complete	adj	1	62
有趣	Interesting	adj	1	63
唯美	Beautiful.	adj	1	64
很好	Very good.	adj	1	65
卫生	Hygienic.	adj	1	66
干净	Clean	adj	1	67
舒适的	Cozy	adj	1	68
甜美	Sweet	adj	1	69
诚实	Honest	adj	1	70
详尽的	Detailed	adj	1	71
丰富的	Rich	adj	1	72
复杂	Complex	adj	1	73
有效的	Effective	adj	1	74
齐全	Complete	adj	1	75
文雅的	Elegant	adj	1	76

Following the analysis of the 80 Chinese texts using RostCM 6.0 and AntConc 4.4.1, the texts were tagged according to their parts of speech, including nouns, verbs, adjectives, and adverbs. The adjectives identified were then compiled into frequency tables, as shown in Table 3 for Chinese non-STEM ads and Table 4 for Chinese STEM ads. Table 3 displays 195 adjectives, ranked from highest to lowest frequency. After excluding duplicates, 76 unique adjectives were identified in the non-STEM texts. The most frequently occurring adjectives were '良好的' (good/advanced) at 40 instances, followed by '熟练' (skilled) at 13 instances, and '热爱' (passionate) at 11 instances. The least frequent adjectives, appearing only once, included terms such as '文雅的' (elegant), '齐全' (complete), and '有效的' (effective).

Similarly, Table 4 presents the 136 adjectives found in Chinese STEM texts, organized in descending order of frequency. A total of 57 unique adjectives were identified, with the top three being '良好的' (good/advanced) at 40 instances, '熟练' (skilled) at 17 instances, and '强烈' (strong) at six instances. In contrast, 41 adjectives appeared only once, indicating a more limited range of descriptive language in the STEM ads.

Table 4. List of adjectives frequency in the Chinese non-stem advertising.

type	Eng Meaning	pos	freq	rank
良好的	good	adj	36	1
熟练	Skilled	adj	17	2
强烈	Strong	adj	6	3
优秀	Excellent	adj	5	4
良好	Good	adj	5	5
细致	Meticulous	adj	5	6
踏实	Conscientious	adj	4	7
安全	Safe	adj	4	8
耐心	Patient	adj	3	9
严谨	rigorous	adj	2	10
不限	unlimited	adj	2	11

稳重	Stable	adj	2	12
合适	Suitable	adj	2	13
简单	Simple	adj	2	14
诚实	Honest	adj	2	15
扎实	Solid	adj	2	16
有价值的	Valuable	adj	1	17
准确	Accurate	adj	1	18
适当	Appropriate	adj	1	19
浓厚	Intense	adj	1	20
勤奋	Diligent	adj	1	21
精通	Proficient	adj	1	22
一般	average	adj	1	23
踏实的	down-to-earth	adj	1	24
完整	Complete	adj	1	25
合理的	Reasonable	adj	1	26
容易	Easy	adj	1	27
有责任心	Responsible	adj	1	28
较好	Better	adj	1	29
特殊	Special	adj	1	30
最小	Minimal	adj	1	31
恰当的	Appropriate	adj	1	32
具体	Specific	adj	1	33
落实	Realized	adj	1	34
成功	Successful	adj	1	35
敏感	Sensitive	adj	1	36
清晰	Clear	adj	1	37
有效的	Effective	adj	1	38
不良	Undesirable	adj	1	39
有效	Effective	adj	1	40
不同	Different	adj	1	41
流畅的	Fluid	adj	1	42
可行的	Feasible	adj	1	43
熟练的	Skilled	adj	1	44
敏捷	Agile	adj	1	45
灵活	Flexible	adj	1	46
热爱	Enthusiastic	adj	1	47
不大	not too	adj	1	48
能吃苦耐劳	Able to work hard and endure hardship	adj	1	49
全面的	Well-rounded	adj	1	50
严格的	Strict	adj	1	51
稳定	Stable	adj	1	52
固体	Solid	adj	1	53
年轻	Young	adj	1	54
强大的	Strong	adj	1	55
极大	Extremely	adj	1	56
舒适	Comfortable	adj	1	57

Table 5 provides a comprehensive overview of the 40 most frequently occurring adjectives among the 260 identified in Spanish recruitment advertisements. The analysis highlights that the top three adjectives with the highest frequencies are "patient" (42 occurrences), "English" (35 occurrences), and "appropriate" (30 occurrences). These adjectives are particularly prominent in job descriptions,

reflecting the attributes that employers prioritize in potential candidates. On the other end of the spectrum, the adjectives with the lowest frequencies—each appearing six times—include "analytical," "cross," "internal," "various," "multi," "proactive," and others. These less frequent adjectives suggest specific but less commonly emphasized qualities that employers may seek depending on the context of the job role. The disparity in frequency among these adjectives underscores the varied focus of recruitment language, with certain traits being more universally valued. In contrast, others are highlighted based on the unique demands of specific positions.

Table 5. List of adjectives frequency in the Spanish non-stem advertising.

type	pos	freq	rank
patient	adj	42	4
English	adj	35	5
appropriate	adj	30	6
other	adj	27	7
strong	adj	21	8
professional	adj	20	9
technical	adj	20	10
new	adj	19	11
fluent	adj	19	12
complete	adj	18	13
clinical	adj	17	14
high	adj	16	15
good	adj	13	16
global	adj	11	17
about	adj	11	18
future	adj	10	19
scientific	adj	10	20
Spanish	adj	10	21
equivalent	adj	9	22
such	adj	9	23
willing	adj	9	24
timely	adj	9	25
able	adj	9	26
mechanical	adj	8	27
commercial	adj	8	28
daily	adj	8	29
innovative	adj	7	30
advanced	adj	7	31
industrial	adj	7	32
civil	adj	7	33
recent	adj	7	34
similar	adj	7	35
more	adj	6	36
proactive	adj	6	37
multi	adj	6	38
various	adj	6	39
internal	adj	6	40
cross	adj	6	41
analytical	adj	6	42

Table 6 presents a detailed breakdown of the 40 most frequently used adjectives in Spanish STEM job advertisements. These 40 adjectives were selected from a total of 246 adjectives identified in the corpus. The top three adjectives with the highest frequencies were "English" (33 occurrences), "good" (27 occurrences), and "strong" (21 occurrences), indicating these traits are highly valued in STEM-related job roles. In contrast, the adjectives with the lowest frequency—each appearing six times—

include "global," "industrial," "academic," "material," "high," "financial," "strategic," "positive," "fast," and "human." These less frequent adjectives suggest specific qualities that are emphasized to a lesser extent but are considered important in particular contexts within the STEM fields.

Table 6. List of adjectives frequency in the Spanish Stem advertising.

type	pos	freq	rank
English	adj	33	1
good	adj	27	2
strong	adj	21	3
fluent	adj	17	4
relevant	adj	17	5
other	adj	16	6
spanish	adj	16	7
professional	adj	16	8
internal	adj	14	9
analytical	adj	14	10
excellent	adj	14	11
different	adj	13	12
responsible	adj	12	13
regulatory	adj	12	14
new	adj	11	15
external	adj	9	16
organizational	adj	9	17
international	adj	9	18
advanced	adj	9	19
corporate	adj	8	20
such	adj	8	21
previous	adj	8	22
legal	adj	8	23
startup	adj	8	24
local	adj	7	25
administrative	adj	7	26
able	adj	7	27
daily	adj	7	28
similar	adj	7	29
more	adj	6	30
human	adj	6	31
fast	adj	6	32
positive	adj	6	33
strategic	adj	6	34
financial	adj	6	35
high	adj	6	36
material	adj	6	37
academic	adj	6	38
industrial	adj	6	39
global	adj	6	40

The results indicate a pronounced emphasis on English proficiency in Spanish job advertisements, particularly within STEM fields. The most frequently used adjectives across STEM and non-STEM ads include "English" (33 occurrences in STEM, 35 in non-STEM), "good" (27 occurrences), "strong" (21 occurrences), "patient" (57 occurrences), and "appropriate" (30 occurrences). These findings

highlight the critical importance placed on language skills, along with attributes such as competency and resilience, in Spanish job markets.

In contrast, Chinese job advertisements consistently prioritize candidates with proficiency in specific skills, regardless of whether the position is STEM or non-STEM. The top three adjectives frequently used in these ads are "良好的" (good/advanced) with 40 occurrences, "熟练" (skilled) with 17 occurrences in STEM and 13 in non-STEM, and "强烈" (strong) with six occurrences. Additionally, "热爱" (passionate) appears 11 times in non-STEM ads, emphasizing the value placed on commitment and enthusiasm in the Chinese recruitment language.

Notably, Chinese and Spanish job advertisements for STEM positions share a common preference for the adjectives "strong" and "good," reflecting a mutual focus on candidates who demonstrate both technical competence and robust character.

3.2. Sentiment analysis

As explored by Kiritchenko, Zhu, and Mohammad (2014), texts inherently carry evaluative and emotional content, making them suitable for sentiment analysis. To analyze the sentiments conveyed in the recruitment advertisements, we utilized RostCM 6.0 software, which categorized the identified sentiments into positive, negative, and neutral categories.

Table7. Sentiment result of Chinese non-stem texts.

Category	Types	Percentage
Positive (5,+∞]	301 (66 adjs)	77.98%(92.1% adj)
Neutral [5,5]	54 (3 adjs)	13.99%(3.95% adj)
Negative (-∞,5)	31 (3 adjs)	8.03% (3.95% adj)

Table 7 provides a detailed breakdown of the sentiment analysis results, revealing that out of 368 words, 301 were identified as positive terms, representing 77.98% of the total text. Additionally, 54 neutral terms were identified, accounting for 13.99%, while 31 negative terms comprised 8.03% of the text. This indicates that nearly 80% of the content in the Chinese non-STEM recruitment texts reflects employers' positive and proactive stance, with only a small fraction (8%) conveying negative sentiments or placing excessive demands on prospective employees. Among the 76 unique adjectives identified, 66 (86.85%) were positive, 5 (6.58%) were neutral, and 3 (3.95%) were negative. The neutral adjectives included terms such as "简单的" (simple), "敏感的" (sensitive), and "优质的" (high-quality). The three negative adjectives, such as "复杂的" (complex), "有效的" (effective), and "吃苦耐劳" (hardworking), suggest that some positions might require dealing with challenging issues or imply certain hardships.

For example:

1. "能够应对复杂的问题" (able to handle complex problems) - "复杂的" (complex)
2. "有效的解决客户问题" (effectively solving customer issues) - "有效的" (effective)
3. "吃苦耐劳,有冲劲" (hardworking and driven) - "吃苦耐劳" (hardworking)

Table 8. Sentiment analysis results for the Chinese STEM texts.

Category	Types	Percentage
Positive (5,+∞]	271（50 adjs）	70.57% （87.72%adj）
Neutral [5,5]	72（4 adjs）	18.75%（7.02%adj）
Negative (-∞,5)	41（3 adjs）	10.68%（5.26%adj）

Table 8 presents the sentiment analysis results for the Chinese STEM texts, indicating that 271 out of the total terms (70.57%) were categorized as positive, 72 terms (18.75%) as neutral, and 41 terms (10.68%) as negative. Notably, over 10% of the STEM positions involved managing negative situations, compared to 8% for non-STEM positions in China. Among the 57 unique adjectives identified, 50 (87.72%) were positive, 4 (7.02%) were neutral, and 3 (5.26%) were negative. The

neutral adjectives included "不大" (not too), "极大的" (extremely), "优质的" (high-quality), and "合理的" (reasonable).

The presence of negative adjectives suggests that certain job roles may entail challenging conditions or responsibilities. For instance:

1."不良事件报告" (report undesirable issues) – "不良" (undesirable)

2."吃苦耐劳" (hardworking) – indicating a requirement for resilience and endurance.

3."最小化故障时间" (minimize downtime) – "最小化" (minimal), implying a focus on efficiency under potentially strenuous circumstances.

These examples reflect the expectations placed on candidates in Chinese STEM job advertisements, where both positive and negative aspects of job responsibilities are explicitly communicated.

Table 9. Sentiment result of Spanish non-stem texts.

Category	Types	Percentage
Positive (5,+∞]	268(156 adjectives)	55.59%(60% adj)
Neutral [5,5]	201(101 adjectives)	41.61%(38.8%adj)
Negative (-∞,5)	14(3 adjectives)	2.9%(1.2% adj)

As shown in Table 9, 268 of the identified terms were positive, accounting for 55.59% of the total, while 201 terms, or 41.61%, were neutral, and 14 terms, or 2.9%, were negative. Among the 260 unique adjectives analyzed, 156 (60.3%) were positive, 101 (38.9%) were neutral, and only 2 (0.8%) were negative. These findings suggest that English non-STEM public job advertisements generally avoid using strongly negative language, preferring instead to describe job requirements with neutral or positive terms.

Excerpt:

1. "You should have no more than 2 years of professional experience (internships/volunteer work/student jobs not included)" – This indicates a preference for less experienced candidates, but without negative connotations.

2. "No visible tattoos while you’re in Emirates cabin crew uniform" – A specific requirement presented neutrally, without disparagement.

3. "Knowledge of IVD regulatory requirements" – A neutral, factual statement of qualifications.

4. "The candidate is a recent graduate, no prior experience required" – Emphasizing inclusivity for fresh graduates without negatively framing their lack of experience.

These examples illustrate the emphasis on maintaining a neutral or positive tone in English non-STEM job advertisements, which may contribute to a more inviting and inclusive portrayal of job opportunities.

Table 10. Sentiment result of Spanish stem texts.

Category	Types	Percentage
Positive (5,+∞]	253(153 adjectives)	45.75% (62.2% adj)
Neutral [5,5]	286 (90 adjectives)	51.72%(36.6%adj)
Negative (-∞,5)	14(3 adjectives)	2.53%(1.2% adj)

Similarly, as shown in Table 10, out of the total 553 terms analyzed in Spanish STEM job advertisements, 253 were positive (45.76%), 286 were neutral (51.72%), and only 14 terms (2.53%) were negative. Among the 246 unique adjectives identified, 153 (62.2%) were positive, 90 (36.6%) were neutral, and just 3 (1.2%) were negative. Notably, the few negative adjectives observed were primarily associated with medical responsibilities, suggesting a specific context where such terms might be necessary. This scarcity of negative adjectives in STEM job advertisements indicates companies prefer to employ neutral or positive language when assessing employees' qualifications and abilities.

Excerpt:

1. "Regulatory requirements and quality practices" – A neutral phrase that outlines specific job responsibilities.

2. "Adverse reactions to physician and appropriate blood supplier" – A neutral yet cautionary statement, reflecting the seriousness of medical-related positions.

3. "Reported to be insufficient according to company policies and procedures" – A neutral phrasing that avoids directly negative connotations while still addressing shortcomings.

Based on these findings, it is evident that there is a strong preference for using neutral and positive adjectives in Spanish STEM job advertisements, with neutral terms being slightly more prevalent. Negative adjectives are rarely used, accounting for only 1.2% of the total adjectives. Additionally, STEM positions tend to favor neutral descriptors, whereas non-STEM positions show a higher inclination towards positive adjectives. This pattern contrasts with Chinese job advertisements, where positive adjectives dominate, especially in non-STEM positions, where over 77% of the adjectives used are positive. The use of neutral and negative adjectives in Chinese ads is relatively low, with their occurrence ranging between 10% and 18%.

3.4.3 Interview Feedback

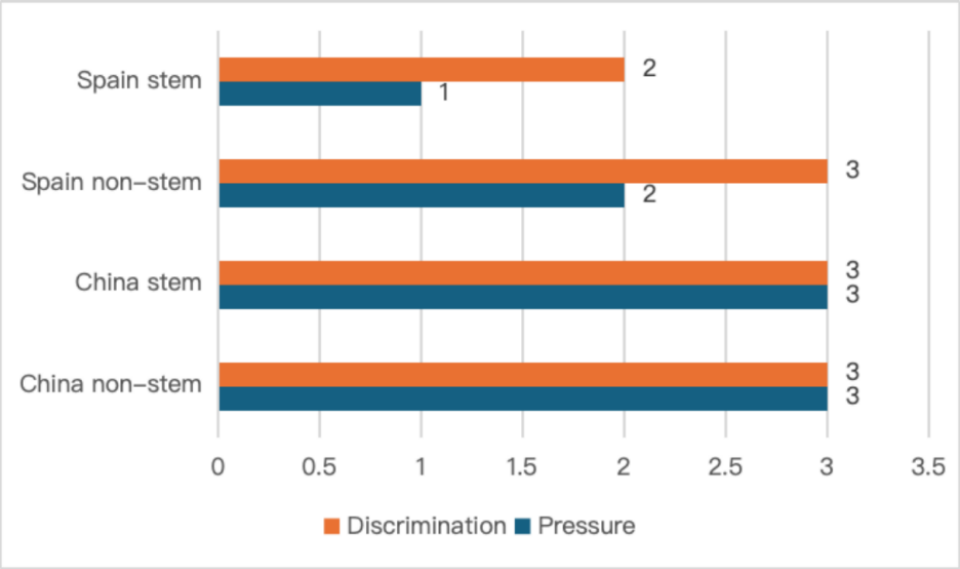

Figure 4. Statistics on discrimination and pressure among Spanish and Chinese students.

We gathered insightful information during the interviews with Spanish and Chinese graduate students, as illustrated in Figure 3. All participants (100%) unanimously agreed that companies evaluate the educational background of interviewees without prior notification. Among the Chinese female respondents, 100% reported experiencing gender discrimination as a default practice, with male graduates often being prioritized for job offers over their female counterparts. Additionally, all six Chinese students (100%) acknowledged feeling significant pressure during their job search, irrespective of whether they were pursuing STEM or non-STEM fields.

In contrast, Spanish female interviewees exhibited a different perspective. While some acknowledged the presence of gender discrimination, it was not something they had actively considered before the interviews. Specifically, 50% of Spanish STEM students (1 out of 2) and 67% of Spanish non-STEM students (2 out of 3) reported feeling pressure after completing their bachelor's degree, indicating a shared experience of stress among Spanish graduates. However, the perception of gender bias was less pronounced compared to their Chinese counterparts.

4. Conclusion

This study sheds light on the important role that sentiment adjectives play in shaping job seekers' perceptions in China and Spain. The findings reveal that Chinese recruitment advertisements tend to use more positive language, potentially creating unrealistic expectations among job seekers. In

contrast, Spanish ads utilize a more balanced mix of neutral and positive adjectives, offering a more grounded portrayal of job roles. The practical implications of this study are significant, as it provides insights into how companies can craft more effective recruitment messages and how job seekers can critically evaluate the language used in job ads.

Future research could expand the scope of this study by including other languages and industries and exploring the impact of adjective usage on actual hiring outcomes. Additionally, more in-depth qualitative research could be conducted to understand better the psychological effects of sentiment adjectives on job seekers' decision-making processes.

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