

Ziyuan Zhang*

Content Analysis of Language-Sensitive Recruitment Influenced by Corporate Language Policy Using Topic Modeling

Abstract

Language-sensitive recruitment is a language management tool frequently used by corporate organizations. However, its relationship with corporate policy is lacking; hence, this study aims to consider language-sensitive job advertisements from a computational text analysis perspective and explore the match (or mismatch) between language-sensitive recruitment (English, Japanese, or bilingual) and corporate language policy. This study uses corpus methods combined with topic modeling and text analysis to investigate the influence of corporate language policy on the textual practice of language-sensitive recruitment in a Japanese multinational corporation (MNC). This study finds a considerable discrepancy between recruitment needs and corporate language policy. It also finds that bilinguals still play a key role in crossing language boundaries 10 years post-mandate of the English language policy in this Japanese MNC. The study contributes to business language by exploring an additional scenario for linking language competency with actual recruitment needs. Thus, this study sheds light on the implementation of language-sensitive recruitment in a multilingual corporate context, affecting the communication patterns and recruitment tactics.

Keywords

language management; language-sensitive recruitment; computer-assisted text analysis; topic modeling; bilingual job advertisements

1. Introduction

Language management is a practice-oriented approach to language, focusing on the management of language users (Sanden 2015). Recent research within language management finds that English-only policies may lead to ‘selective recruitment’, also known as language-sensitive recruitment, which refers to ‘practices in which a certain proficiency in the corporate language is used as a precondition for employment’ (Peltokorpi/Vaara 2014). Language-sensitive recruitment appears to be a frequently used language management tool, which may appear relatively easy to implement in practice (Lester 1994; Brandt/Chancellor 2011). However, it is a time-consuming solution with higher recruiting and compensation costs (Grin et al. 2011; Peltokorpi/Vaara 2014). Despite this significant research, an analysis of the complex relationship between language-sensitive recruitment and corporate language policy is lacking. Research is also needed to better understand the role of language management in large international corporations. This study aims to fill the research gap by examining the influence of corporate language policy on the practice of language-sensitive recruitment. More specifically, the study aims to address the following research questions:

1. How is corporate language policy implemented in language-sensitive recruitment?
2. What are the recruitment needs for bilinguals in job advertisements?

This study focuses on Rakuten, one of the world’s largest internet companies with businesses based in 30 countries and regions. The company’s headquarters in Tokyo employs over 10,000 employees, 80% of whom are Japanese. This multinational corporation (MNC) decided to

* Ziyuan Zhang
Department of Professional and Intercultural Communication
Norwegian School of Economics
E-mail: ziyuan.zhang@nhh.no

change its corporate language from Japanese to English in 2010. This policy, referred to as ‘Englishnization’, was seen by CEO and Chairman Hiroshi Mikitani as a means to dismantle cultural and linguistic barriers (Neeley 2011). The CEO proposed the Test of English for International Communication (TOEIC) listening and reading test to improve employees’ English language proficiency, prepare them for global competition, and enable them to meet the English language proficiency requirements of the workplace.

This study uses quantitative and qualitative methods to investigate this case of language policy at both macro and micro levels of language management. In particular, the study is based on a corpus of online bilingual job advertisements from 2019. It uses corpus methods combined with topic modeling and text analysis to investigate the implementation of a corporate language policy ten years after its mandate. This study considers language-sensitive job advertisements from a computational text analysis perspective and explores the match (or mismatch) between language-sensitive recruitment (English, Japanese, or bilingual) and corporate language policy.

This article continues with related literature; it considers language management and language-sensitivity recruitment. Subsequently, it presents methodological and data procedures and findings, and then presents the discussion and conclusion in the last section.

2. Theoretical considerations

2.1 Language Management

Recently, language management has received considerable attention in international business studies. A business strategy tool or language-sensitive approach implies that language management relates to the strategic use of language by management to deliberately control the linguistic-communicative arena of a firm or business unit based on the assumption that it will benefit the company (Sanden 2015). Language needs to be considered a key element in strategically managing a multinational company (Sanden 2015; Marschan-Piekkari et al. 1999b).

Corporate language policy is a type of language management for a company or business organization (Sanden 2015). Many studies, such as that of Lønsmann (2011), Neeley (2017), and Piekkari (2006), posit that using English as a corporate language medium may attract global talent. Lønsmann (2011) claims that the lack of a language policy document has led to different definitions and expectations among employees who experience a discrepancy between their interpretations and the company’s reality. In the case of Rakuten, Englishnization is a strict corporate language policy from Neeley’s perspective; it was required for every employee irrespective of rank, job role, or tenure at the company (Neeley 2017). Current Rakuten employees would face the consequences if they failed to obtain an ideal score on the TOEIC (Neeley 2017). For instance, if an employee fails the test within 2 years, then they might be demoted.

However, the policy is not based on a formal language policy document that explains the Englishnization policy that includes guidelines and recommendations for appropriate language use. Instead, it is based on a mandate from the CEO’s regulatory documents (Neeley 2011). Based on the previous literature, the implementation of Englishnization is divided into three phases. First, after the program was launched in 2010, Rakuten employees had two years to obtain a score above 650 in the TOEIC or face demotion (Neeley 2017). Second, the proficiency bar rose gradually to reach a score of 800 and the points became the mandatory requirement for all new hires (Neeley 2017). The 800-point phase is still underway and emphasizes speaking. Finally, the implementation will focus on global understanding.

2.2 Language-Sensitive Recruitment

A job advertisement is one way to attract the desired applicants to an organization (Blackman 2006). Organizations create job advertisements as a routine activity in the recruitment process (Rafaeli/Oliver 1998). Job advertisements are potential sites where ideology is naturalized (Fairclough 2013). Walters/Fage-Butler (2014) illustrate how the genre of the job advertisement

has developed over time, as well as indicate the features of the genre that characterize the richer job advertisements written today. Backhaus (2004) assesses the importance of word choice in producing recruitment materials. The author advocates that ‘the task of business communicators is to find the appropriate words to pique the curiosity of the desired potential workers and encourage them to continue through the application process’ (Backhaus 2004: 116). Lester (1994: 43) has proposed that ‘the easiest and cheapest way to approach the language problem’ is to hire people with sufficient language skills.

In the business world, a foreign language capability is strictly an ancillary skill (Inman 1980). MNCs can remove language barriers by recruiting employees with the required language proficiency (Reeves/Wright 1996). However, language-sensitive recruitment is not always an appropriate choice and may face many challenges. One challenge is to find qualified candidates due to a shortage of potential employees with sufficient English skills in the local labor market, for example, in Japan (Peltokorpi 2010) and South Korea (Park et al. 1996). If native citizens with insufficient skills are employed while there is a language requirement, they may not perform effectively (Peltokorpi/Vaara 2014). Another challenge is the higher recruitment and compensation costs (Grin et al. 2011; Peltokorpi/Vaara 2014).

Bilinguals in the context of this study, also known as ‘language intermediates’, ‘language brokers’, or ‘bridge individuals’, refer to the employees who become communication channels for people who have difficulty understanding each other (Harzing et al. 2011). Brannen (2004) defines language skills as an individual’s ability to manipulate the linguistic and semantic signals, that together constitute a particular language, to transfer meaning in that language. Barner-Rasmussen et al. (2014) argue that language skills can, in principle, refer to the language of a country, a corporate language, a professional or functional language, a regional lingua franca, and/or ‘company speak’ (Vecchi 2014). Language intermediates are obliged to assist other employees who have insufficient language competency as ‘language nodes’ (Harzing et al. 2011; Marschan-Piekkari et al. 1999a), ‘parallel information networks’ (Harzing et al. 2011) or an emergent language management tool (Sanden, 2015). Takino (2016) states that Japanese Business English as a lingua franca (BELF) users use Japanese as a system in their business community or as an effective strategy, to deal with the challenges in the use of English as a lingua franca in global business. After the lingua franca mandate emerged and people’s language fluency evolved, the demand for bilinguals lessened and then became nearly nonexistent because they were no longer unique (Neeley 2017). However, Neeley (2017) fails to capture sufficient data to focus on this group because she believes demands for bilinguals reduced dramatically, and they represent a miniscule portion of the total employee population.

3. Methodology: Computer-Assisted Text Analysis

Computer-assisted text analysis techniques fall into three main categories: lexical-based (Monroe et al. 2008; Lee/Martin 2015), text classification (Chuang et al. 2012; DiMaggio 2015), and natural language processing (Nelson 2020). Content analysis uses variables to represent the counts (or proportions) of keywords encountered within or across the records of text (Sodhi/Son 2010), and it can be effectively complemented with topic modeling techniques (Nelson 2020). Topic modeling is a generative model for a document: a topic is modeled as a probability distribution over words, and a document as a distribution over topics (Blei et al. 2003; Griffiths/Steves 2004; Hofmann 1999; Concannon et al. 2018). The latent Dirichlet allocation (LDA) is the most common form of topic modeling that automatically discovers topics within a large collection of text. The model seeks to automatically discover thematically coherent topics, extracted from a large collection of texts based on word co-occurrence (Brookes/McEnery 2019). Topic modeling has been applied to study various themes in different text types, such as political science (Grimmer/Stewart 2013), academic English papers (Murakami et al. 2017), and online forums (Törnberg/Törnberg 2016). Isoaho et al. (2019) argue that content, thematic, and vocabulary analyses can be combined with topic modeling through embedded design, as a predominant method that guides the analysis and

an auxiliary methods, to enhance this process (Creswell and Creswell, 2017). Törnberg/Törnberg (2016) combine critical discourse analysis with topic modeling to automatically and inductively structure the text to find recurrent patterns and then analyze the resulting topics to discern what they are about, by focusing both on the terms most closely associated with each topic and the related documents. The objective of the combination approach is not to merge text analysis and topic modeling into a single synthesis but to use them as complementing steps in the analysis. Content analysis can utilize topic modeling at the exploratory stage, deep reading at the pattern refinement stage, and supervised machine learning approaches at the pattern confirmation stage to provide a robust, rigorous, and reproducible methodological framework (Nelson 2020).

This study's analytical procedure broadly mirrors the approach, including corpus construction, pattern detection using human-centered computational exploratory analysis, and pattern refinement using guided deep reading. Applying the framework to advertisements, the study can identify the important content words in the corpus, reduce complicated text to informative groups of words, and interpret text without the burden of reading the full text.

4. Data and Procedure

This study collected online bilingual job advertisements in 2019 from a Japanese multinational company in its tenth year of the mandate. The study used web crawler to obtain 1,109 advertisements (1,053,178 words) posted to Rakuten's talent section available at (<https://japan-job-en.rakuten.careers/search-jobs>) on November 12, 2019. In total, 683 (61.5%) of these advertisements are bilingual, 129 (11.6%) are in Japanese, and 297 (26.9%) are only in English. The bilingual advertisements can be displayed in the English or Japanese versions, and users can change the display language by clicking the upper right button (Fig. 1).



Figure 1: English and Japanese versions of a bilingual advertisement.

The analysis consisted of three steps. First, the study assessed frequency and occurrence by using the eight most relevant language requirement terms: TOEIC, English, Japanese, English and Japanese, 英語(English), 日本語(Japanese), 英語(English) and 日本語(Japanese), and Japanese Language Proficiency Test (JLPT). This study compared specific language requirement words used for the English and Japanese versions of bilingual advertisements to further explore the differences in the language requirement for bilingual positions. Second, the study extracted all the

sentences, including English and Japanese requirements, from 150 bilingual advertisements. Five main topics were extracted from LDA using the subjective analysis of iterative results.

This study also analyzed 60 job advertisements only in Japanese without any language requirement keywords, which accounts for 50% of the total Japanese-only advertisements. It aimed to dissect texts about misalignment between corporate language and functional skill requirement.

The study used pyLDAvis as the visualization tool (refer to Figs. 3 and 4). The circle area in the left panel represents the importance of each topic over the entire corpus. The distance between the centers of the circles indicates the similarity between topics. For each topic, one should click a circle in the left panel to select a topic; the bar chart on the right side displays the top 30 most relevant terms for the selected topic. When a given term is highlighted, the default areas of circles change to the circles for the term. The red bars indicate the frequency of a term in a given topic, and the blue bars indicate the term's frequency in the entire corpus. Sievert/Shirley (2014) define the relevance for ranking terms within topics. The relevance metric λ determines the weight given to the probability of term w under topic k relative to its lift (Sievert/Shirley 2014). One can change the value of λ to modify the term rankings – small values of λ highlight potentially rare but exclusive terms for the selected topic, and large values of λ (near 1) highlight frequent but not necessarily exclusive terms for the selected topic (Sievert/Shirley, 2014). By default, the terms related to a topic are ranked in decreasing order, according to their topic-specific probability ($\lambda = 1$) and the suggested 'optimal' value of λ is 0.6 (Sievert/Shirley 2014). Changing λ from 1 to 0 allows adjustment of the ranking of the terms based on more relevant terms for the specific topic.

5. Findings

In the following analysis, this article provides insights into how language-sensitive recruitment is implemented in the Rakuten corporation; it explores the construction of candidates in the job advertisements.

5.1 Notion of Corporate Language Policy

The use of the 'official language', 'English', and 'TOEIC' in both Japanese and English in job advertisements reveals that the language-sensitive recruitment of Rakuten considers language policy from three overarching perspectives. First, only 14 job advertisements in Japanese mention language policy as '社内英語公用語化 (the introduction of the company's official language as English)', reflected in the following job description as a supplementary condition of employment, which relates to the employment type: regular employee or contract employee.

The two types of texts below reveal that the TOEIC score is mentioned as a recommendation rather than a mandatory requirement for regular employees. Potential candidates could achieve it after entering the company or taking the TOEIC test during the selection process, and there are no TOEIC requirements for contract employees.

社内英語公用語化に伴い、TOEIC800 点が正社員としての採用推奨要件ですが、TOEIC800 点がなくとも正社員で採用することもございます。正社員採用の場合、入社後にTOEIC800 点を目指して頂きます。契約社員採用の場合、TOEIC のスコアは必要ございません。応募時点で 800 点以上の TOEIC スコアを証明するエビデンスをお持ちでない方については、選考過程で弊社主催 の TOEIC IP テスト（無料）を受験頂きます。

After the introduction of English as the company's official language, the company required TOEIC score of 800 points from its regular employees. Nonetheless, employees would still be hired even if their TOEIC of 800 points are not available. Regarding the employment of regular employees, you will be expected to aim for a TOEIC score of 800 after joining the company. TOEIC scores are not required for contract employees. If you do not have evidence to prove a TOEIC score of 800 or higher at the time of application, you will be required to take the TOEIC IP test sponsored by the company during the selection process. (Translated from Japanese)

【雇用形態】正社員／契約社員【雇用形態の補足（TOEIC スコアについて）】社内英語公用語化に伴い、TOEIC800 点が正社員としての採用要件となります。スコアが 800 点以上の場合は正社員としての採用が可能となります。TOEIC800 未満の場合は契約社員として採用となります。応募時点で 800 点以上の TOEIC スコアを証明するエビデンスをお持ちでない方については、選考過程で弊社主催のTOEIC IP テスト（無料）を受験頂きます。

Employment type: Regular employees / Contract employees [Supplementary information on employment types (about TOEIC score)] With the introduction of the company's official language as English, the TOEIC score of 800 is a requirement for regular employees. If the score is over 800, you can be hired as a regular employee. If your TOEIC is less than 800, you will be hired as a contract employee. If you do not have evidence of a TOEIC score of 800 or higher at the time of application, please take the TOEIC IP test (free) sponsored by our company during the selection process. (Translated from Japanese)

Second, TOEIC is a key index for the lingua franca mandate in Rakuten and represents an 'entity' that implements corporate language policy – this is a dominant perspective. However, the requirement for the TOEIC score is not uniform in the 337 advertisements with the term 'TOEIC'. Most of the advertisements require an 800 score or more for new hires, whereas some have lower requirements for TOEIC, such as 'TOEIC over 800 (or same English level)', 'TOEIC score over 650', 'TOEIC over 600 (or related skill)', and 'TOEIC score of 800+ is required after entering', '(TOEIC 800+) or a desire to reach a similar level', 'TOEIC higher than 800 (acceptable to mark 800+ during job-interview process)', '(better) over TOEIC score 800', 'over 800 TOEIC score at present, or candidate who can score more than 800 within 2 years', and 'TOEIC score is not required'.

5.2 Prevalent Terminology

Table 1 presents the results of the analysis. The proficiency TOEIC score bar has become 800 for all new hires in Rakuten. However, only 18.81% of the 1,792 advertisements mentioned the term 'TOEIC'. The term 'English' was used in 292 advertisements, and this figure rose to 317 for the term '英語 (English)', an increase of 25. By contrast, the term 'Japanese' is mentioned in 317 advertisements, almost half of this figure (167) used the term '日本語 (Japanese)', as shown in the table.

Keywords	Frequency of Occurrence	Number of Advertisements with Words	Occurrence by % of 1792 Advertisements
TOEIC	511	337	18.81
English	387	292	16.29
Japanese	423	317	17.69
English and Japanese	810	207	11.55
英語 (English)	498	317	17.69
日本語 (Japanese)	210	167	9.32
英語 (English) and 日本語 (Japanese)	708	146	8.15
JLPT	6	6	0.33

Table 1: Language requirement keywords and their frequency of occurrence.

Table 2 presents the statistics for the three types of advertisements: the English version of bilingual advertisements, the Japanese version of bilingual advertisements, and advertisements only in Japanese. Interestingly, for bilingual jobs, the average number of words used in the Japanese version (403.70) is much greater than the English version's average number (265.71); linguistic differences may have played a role. However, the average number of words used in the Japanese-only advertisements (455.03) is more than the average number in the Japanese version of bilingual

jobs (403.70). This might reflect more information about Japanese-only advertisements compared to the Japanese version of bilingual advertisements.

Language	Num. of Ads	Statistics
English version of bilingual advertisements	683	Average number of words per advertisement: 265.70
		Number of advertisements with no language requirement keywords/phrases: 357
		Number of advertisements with language requirement keywords/phrases: 326
		Number of advertisements in Japanese: 20
Japanese version of bilingual advertisements	683	Average number of words per advertisement: 403.71
		Number of advertisements with no language requirement keywords/phrases: 393
		Number of advertisements with language requirement keywords/phrases: 290
Only Japanese	129	Average number of words per advertisement: 455.03
		Number of advertisements with no language requirement keywords/phrases: 60
		Number of advertisements with language requirement keywords/phrases: 69

Table 2: Overview of the breakdown for each language.

English Subsample

Language requirement keywords	Frequency of Occurrence	Number of Advertisements with Words	Occurrence by % of 683 Advertisements
TOEIC	173	119	17.42
English	271	205	30.01
Japanese	322	231	33.82
English and Japanese	593	149	21.82
英語 (English)	52	20	2.93
日本語 (Japanese)	19	7	1.02
英語 (English) and 日本語 (Japanese)	71	7	1.02
JLPT	2	2	0.29

Japanese Subsample

Language requirement keywords	Frequency of Occurrence	Number of Advertisements with Words	Occurrence by % of 683 Advertisements
TOEIC	253	148	21.67
English	25	16	2.34
Japanese	7	6	0.88
English and Japanese	32	6	0.88
英語 (English)	363	239	34.99
日本語 (Japanese)	171	141	20.64
英語 (English) and 日本語 (Japanese)	534	120	17.57
JLPT	1	1	0.15

Table 3: Language requirement keywords for bilingual subsamples.

5.3 High Demand for Bilinguals

The study extracted 150 job advertisement texts of bilingual (English and Japanese) requirements, which accounted for 25% of 683 bilingual advertisements. In the Japanese version of bilingual job advertisements, there were further explanations for TOEIC scores in 54 such advertisements. If candidates had the same level of English as the required TOEIC score (800), they could apply

for the position. By contrast, only the TOEIC score requirement was written without further explanation in the English version. The same requirement for the TOEIC score (800) could be described as different levels of English skills by using terms such as ‘proficient’, ‘fluent’, ‘business’, ‘proactive’, and ‘conversational’. Moreover, some bilingual advertisements in the English version had the requirement for Japanese skills using terms such as ‘proficient’, ‘fluency’, ‘business’, or ‘native’. By contrast, their Japanese versions do not mention any requirement for Japanese skills. The content explicitly shows a misalignment between the Japanese version and the English version.

By further analyzing the advertisements, the study found that the job category was widely distributed in both technical positions (e.g., ‘Software Engineer’, ‘Engineering’, ‘R&D scientist’, ‘Architect’, ‘System Engineer’, and ‘QA Engineer’) and business positions (e.g., ‘Marketing’, ‘Legal’, ‘Sales & Business Development’, ‘Business Planning & Strategy’, ‘Service Planner’, and ‘HR & Admin’; Figure 2). Surprisingly, the location has a narrow distribution in Japan, ranging from the Tokyo headquarters to Japanese subsidiaries, and Tokyo headquarters accounts for more than 80% (Fig. 2).

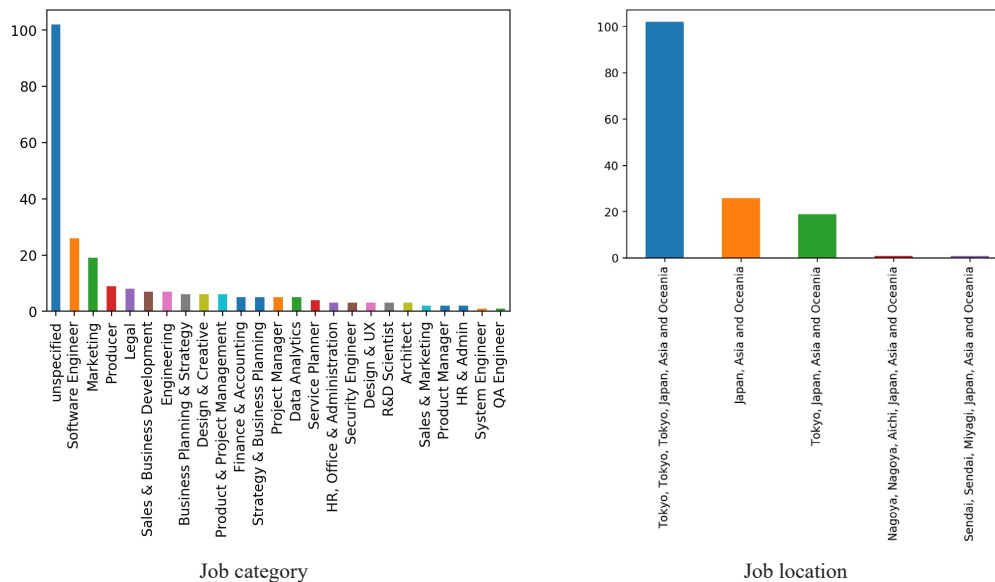


Figure 2: Bilingual advertisements.

The data show that bilingual employees who can speak English and Japanese are in high demand in different roles across different departments in the Japanese headquarters. As can be observed in Table 4, the LDA model presents five separate topics for bilingual requirements.

Num	Topic	Keywords ($\lambda = 1$)	Keywords ($\lambda = 0.2$)
1	Business level	English, Japanese, business, level, toEIC, communication, skills, native, skill, required	business, toEIC, English, Japanese, level, requirement, communication, proficient, speaking, required
2	Management skills	English, level, Japanese, ability, communication, business, native, skill, language, conversational	ability, management, intermediate, advanced, overseas, conversational, subsidiaries, web, conference, mtg
3	Speaking, reading and writing abilities	Japanese, level, business, English, written, skills, fluent, native, skill, spoken	reading, written, spoken, excellent, fluent, position, essential, welcome, subtitles, years
4	Customer-first mindset	Japanese, English, skills, communication, language, native, fluent, experience, excellent, comfortable	comfortable, looking, logic, customer, mindset, communicating, talented, Korean, recruiting, interpersonal
5	Working proficiency	Japanese, English, language, skills, proficiency, speaking, working, native, preferred, presentation	working, professional, role, proficiency, issues, convincing, presentation, discuss, language, preferred

Table 4: Five topics for bilingual requirements.

The screenshot of the pyLDAvis result is shown in Figure 3.

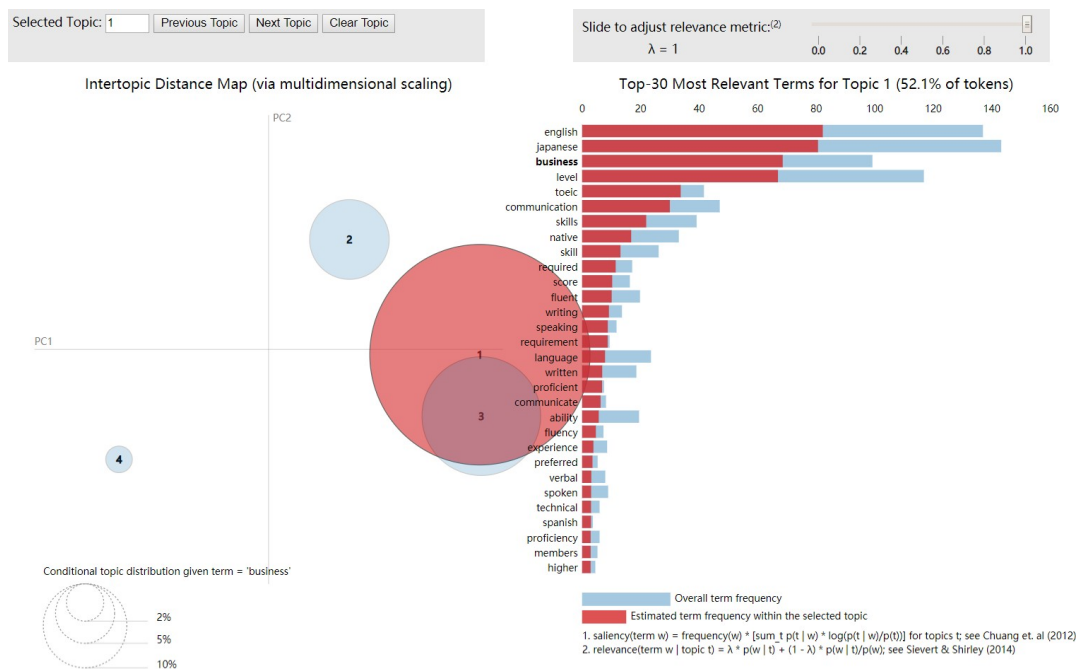


Figure 3: Visualized topic models for bilingual requirements.

For topic one (business level), the top 10 most relevant terms, given that $\lambda = 1$ (setting results in the ranking of terms in decreasing order by probability), are {'English', 'Japanese', 'business', 'level', 'toEIC', 'communication', 'skills', 'native', 'skill', 'required'}, and setting $\lambda = 0$ ranks terms solely by lift, which is the ratio of a term's probability within a topic to its marginal probability across the corpus. The top 10 most relevant terms given $\lambda = 0.2$ are {'business', 'toEIC', 'English', 'level', 'requirement', 'communication', 'proficient', 'speaking', 'required' and 'skills'}. The second set of terms is much more descriptive of the topic being discussed than the first. A set of topics (one and three) together, contains a topic category of bilingual requirements for recruitment. Topic one (business level) focuses on the business level, which is a necessary demand for English and Japanese, adding that TOEIC is required for English, but Japanese does not have a specific requirement for a standard test. Topic three (speaking, reading

and writing abilities) focuses on the description of specific important skills by using terms, such as reading, written, spoken, and verbal, which are suggestive of this requirement.

Hence, topics one and three are interpreted as being about the business level and speaking, and reading and writing abilities, respectively. The presence of these terms in the text suggests that at least a business level of English and Japanese in reading, writing, and speaking are necessary requirements for these 150 jobs.

Excellent communication skills (written, verbal and presentational) in English (Spoken Japanese is highly welcomed) with the ability to communicate issues effectively and comprehensively. (job_description 45)

Topic two (management skills) was interpreted as a bilingual ability with management experience and overseas subsidiaries. Systematically linking bilingual ability to terms such as ‘comfortable’, ‘logic’, ‘customer’, ‘mindset’, and ‘communicating’, topic four (customer-first mindset) indicates that candidates should have a customer-first mindset.

We are looking for someone with a customer-first mindset who is comfortable communicating his logic both in English and in Japanese. (job_description 58)

The keywords ‘working’, ‘email’, ‘presentation’, and ‘telephone’ that characterize topic five (working proficiency) suggest that good presentation skills and the ability to interact effectively in English and Japanese should be a capability. The discourse of job advertisements shows that the demand for these bilinguals does not reduce but still widely exists in Japan because they are still needed after ten years of the post-mandate era:

First, communication with some branch offices in Japan requires Japanese. This is well illustrated in this job advertisement:

Fluent communication using Japanese or English. Producers often need to discuss with members who work at other branch offices in Japan or in other countries. (job_description 64)

Then, one works with internal and external clients to identify their business issues and opportunities in Japan, as two job advertisements detail:

This position also requires the candidate to possess business-level or higher skills in Japanese and English, both written and spoken. (job_description 74)

No fear approach to new business development through cold calling and networking. (job_description 126)

Finally, Japanese is mainly used at work, and English is only as a regulation rule for some positions, such as consultant and producer, which is illustrated in these bilingual advertisements.

ビジネスレベルのコミュニケーション力（日本語中心、英語は当社規定に準ずる）(job_description 126, Japanese version)

Business-level communication skills (mainly Japanese, English conforms to our regulations) (job_description 126, English version)

ご入社後直ぐは英語の使用はございませんが追って発生します。全業務の2~3割 (job_description 321, Japanese version)

Immediately after joining the company, there is no use of English, but it will occur later in 20 to 30% of all operations (job_description 321, English version)

5.4 No Demand for English

The result also shows that English is not in demand, but can be used as a professional skill, such as business and Japanese language skills, for hiring contract employees in some advertisements from the Rakuten travel, e-commerce, and fintech departments. This study ran an LDA set to five topics on this subsample only in Japanese without any language requirement keywords (Table 5).

Num	Topic	Keywords ($\lambda = 1$)	Keywords ($\lambda = 0.6$)
1	Sales experience	楽天 (Rakuten), 経験 (experience), トラベル (travel), 様 (suffix), 営業 (sales), 施設 (facilities), 休暇 (holiday), 宿泊 (lodging), 提案 (proposal), web	楽天 (Rakuten), 経験 (experience), トラベル (travel), 営業 (sales), 様 (suffix), 施設 (facilities), 休暇 (holiday), 宿泊 (lodging), 提案 (proposal), web
2	Business skills	経験 (experience), 楽天 (Rakuten), 様 (suffix), 宿泊 (lodging), 事業 (business), 休暇 (holiday), トラベル (travel), 年 (year), 提案 (proposal), 業務 (work)	経験 (experience), 楽天 (Rakuten), 事業 (business), 業務 (work), 年 (year), 宿泊 (lodging), 目標 (goal), 以上 (above), 制度 (system), 提案 (proposal)
3	Travel business	経験 (experience), 楽天 (Rakuten), トラベル (travel), 施設 (facilities), 保険 (insurance), 月 (month), 休暇 (holiday), 宿泊 (lodging), web, 的 (modifier)	経験 (experience), トラベル (travel), 楽天 (Rakuten), 施設 (facilities), 保険 (insurance), 的 (modifier), 月 (month), 業務 (work), 休暇 (holiday), web
4	Experience requirement	経験 (experience), 楽天 (Rakuten), 年 (year), 様 (suffix), トラベル (travel), 保険 (insurance), 休暇 (holiday), 提案 (proposal), 営業 (sales), 以上 (above)	経験 (experience), 年 (year), 楽天 (Rakuten), サービス (service), 保険 (insurance), 様 (suffix), 提案 (proposal), 休暇 (holiday), トラベル (travel), 以上 (above)
5	Benefits	楽天 (Rakuten), 経験 (experience), トラベル (travel), 様 (suffix), 休暇 (holiday), 施設 (facilities), 集客 (attracting customers), 保険 (insurance), 宿泊 (lodging), 年 (year)	楽天 (Rakuten), 経験 (experience), トラベル (travel), 休暇 (holiday), 様 (suffix), 集客 (attracting customers), 保険 (insurance), 施設 (facilities), 年 (year), 的 (modifier)

Table 5: Japanese-only ads without keywords.

As observed in Figure 4 generated by pyLDavis, the five topics capturing Japanese-only texts present a hegemony in professional and Japanese language skills. For example, the keywords ‘経験 (experience)’ and ‘トラベル (travel)’ that characterize all topics show that professional experience is a primary demand in Rakuten Travel. An optimal value of $\lambda = 0.6$ is set to interpret the topics. Topic one (sales experience), two (business skills), three (travel business), and four (experience requirement) were interpreted as highlighting the importance of sales experience and work experience in travel business by linking to terms such as ‘営業 (sales)’, ‘事業 (business)’, ‘トラベル (travel)’, and ‘業務 (work)’. Topic five (benefits) includes content of employee benefits, bonus, paid time off, and insurance explicitly presented by terms such as ‘年 (year)’, ‘休暇 (holiday)’, and ‘保険 (insurance)’. The topics here focus on how the organization wishes to hire persons who possess ‘primary’ skills, rather than English to serve as their main occupation, which is well illustrated in this Japanese-only advertisement:

必須条件: seo 経験 (2年以上) / web 制作経験者歓迎条件: 広告代理店での勤務経験/
web サービス開発経験ui/ux

Minimum qualifications: SEO experience (2 years or more) / Web production experience Preferred qualifications: Work experience at an advertising agency / Web service development experience ui / ux (Translated from Japanese)

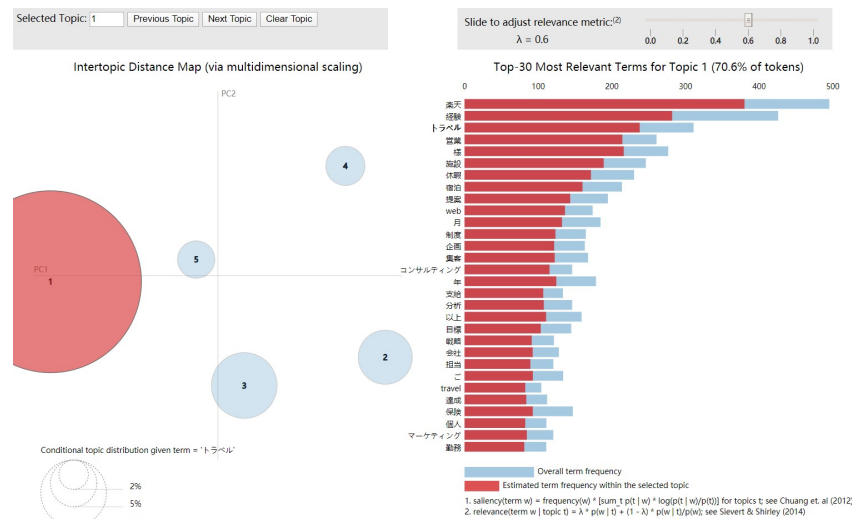


Figure 4: Visualized topic models for Japanese advertisements without language requirement keywords.

6. Discussion and Conclusion

The study aimed to consider language-sensitive job advertisements from a content analysis perspective and explore the match (or mismatch) between language-sensitive recruitment (English, Japanese, or bilingual) and corporate language policy and finally to examine the recruitment needs for bilinguals.

In response to the first research question ‘How is corporate language policy implemented in the language-sensitive recruitment?’, the study found a discrepancy between recruitment needs and corporate language policy. Rakuten’s English policy is strict: any employee contravening the policy would be demoted (Neeley 2017). To ensure the seriousness of the policy, the company requires an 800 TOEIC score for all recruits (Neeley 2017). However, only 337 (18.81%) of the 1,792 advertisements that mentioned the term ‘TOEIC’, 129 advertisements are written solely in Japanese. Japanese and English Rakuten job advertisements’ coverage of corporate language policy differs, contrary to the corporate language policy.

Furthermore, there is a misalignment between the corporate language policy and functional skill requirements in the job advertisements. As previously mentioned, Inman (1980) concludes that there is no demand for foreign language majors unless those individuals also possess another primary skill to serve as their main occupation. Conversely, Japanese-only advertisements present hegemony in professional skills and defy the corporate language policy.

Data reveals that hiring managers prefer potential candidates with a particular proficiency in Japanese and professional ability that satisfies business needs over English skills, corroborating the extant literature on language-sensitive recruitment (Grin et al. 2011; Brandt/Chancellor 2011; Peltokorpi/Vaara 2014). This study can also contribute to the ongoing discussion on the implementation of language-sensitive recruitment. Grin et al. (2011) conclude that English skills are associated with sizeable wage premiums, indicating higher recruitment costs. Another problem with language-sensitive recruitment is a shortage of potential employees with sufficient English skills in the Japanese labor market (Peltokorpi 2010). Hence, increasing recruitment and compensation budgets for employing candidates who possess the required language and professional skills could solve the mismatch between corporate policy and recruitment practice.

The present study can also contribute to the ongoing discussion on recruitment needs for bilinguals. As previously mentioned, Takino (2016) concludes that the Japanese language resource is often used to make English communication more effective in their bilingual business

communication. In contrast to Neeley's (2017) conclusion that negates the need for bilinguals because of employees' improvement in their English level, this study finds that bilinguals are still in high demand. Job advertisements lower the TOEIC score requirements for regular employees, and contract employees are not covered by the corporate language policy. Possible reasons are the shortage of potential employees with sufficient English skills in the Japanese labor market and Japanese still being a required language for business in Japan.

Moreover, the study shows that Japanese is still widely used at work, while English remains a regulation rule for certain professionals, such as consultants and producers. This study also shows that bilinguals act as communication channels to connect internal and external clients to identify their business issues and opportunities in Japan and play a key role in communicating with some branch offices, including domestic and overseas offices.

However, the limitations of the study point to areas for future research. The bilingual advertisements were collected only from a single company. Hence, one cannot generalize the findings to job advertisements in other companies and industries. Future comparative studies are needed to confirm or nuance these results. Furthermore, there needs to be continued research into bilingual advertisements to follow up on on-going changes.

In summary, this study sheds light on the implementation of language-sensitive recruitment in a multilingual corporate context, affecting communication patterns and recruitment tactics. The Rakuten context introduces an additional scenario for linking language competency with actual recruitment needs.

References

- Backhaus, Kristin B. 2004: An exploration of corporate recruitment descriptions on monster.com. In *The Journal of Business Communication* 41:2, 115–136.
- Barner-Rasmussen, Wilhelm/Ehrnrooth, Mats/Koveshnikov, Alexei/Mäkelä, Kristiina 2014: Cultural and language skills as resources for boundary spanning within the MNC. In *Journal of International Business Studies* 45(7), 886–905.
- Blackman, Anna 2006: Graduating students' response to recruitment advertisements. In *The Journal of Business Communication* 43(4), 367–388.
- Blei, David M./Ng, Andrew Y./Jordan, Michael I. 2003: Latent Dirichlet allocation. In *Journal of Machine Learning Research* 3:Jan, 993–1022.
- Brandt, Willy/Chancellor, Former German 2011: *Report on language management strategies and best practice in European SMES: The pimlico project*.
- Brannen, Mary Yoko 2004: When mickey loses face: Recontextualization, semantic fit, and the semiotics of foreignness. In *Academy of Management Review* 29(4), 593–616.
- Brookes, Gavin/McEnery, Tony 2019: The utility of topic modelling for discourse studies: A critical evaluation. In *Discourse Studies* 21(1), 3–21.
- Chuang, Jason/Ramage, Daniel/Manning, Christopher/Heer, Jeffrey 2012: Interpretation and trust: Designing model-driven visualizations for text analysis. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. Austin.
- Concannon, Shauna Julia/Balaam, Madeline/Simpson, Emma/Comber, Rob 2018: Applying computational analysis to textual data from the wild: A feminist perspective. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. ACM.
- Creswell, John W./Creswell, J. David 2017: *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. New York: Sage Publications.
- DiMaggio, Paul 2015: Adapting computational text analysis to social science (and vice versa). *Big Data & Society* 2(2), 1-5.
- Fairclough, Norman 2013: *Critical Discourse Analysis: The Critical Study of Language*. New York: Routledge.
- Griffiths, Thomas L./Steyvers, Mark 2004: Finding scientific topics. In *Proceedings of the National Academy of Sciences* 101, 5228-5235.
- Grimmer, Justin/Stewart, Brandon M. 2013: Text as data: The promise and pitfalls of automatic content analysis methods for political texts. In *Political Analysis* 21(3), 267–297.

- Grin, François/Sfreddo, Claudio/Vaillancourt, François 2011: *The Economics of the Multilingual Workplace*. New York: Routledge.
- Harzing, Anne-Wil/Köster, Kathrin/Magner, Ulrike 2011: Babel in business: The language barrier and its solutions in the HQ-subsidiary relationship. In *Journal of World Business* 46(3), 279–287.
- Hofmann, Thomas 1999: Probabilistic latent semantic indexing. In *Proceedings of the 22nd annual international ACM SIGIR conference on Research and development in information retrieval*, 50–57.
- Inman, Marianne 1980: Foreign languages and the US multinational corporation. In *The Modern Language Journal* 64(1), 64–74.
- Isoaho, Karoliina/Gritsenko, Daria/Mäkelä, Eetu 2019: Topic modeling and text analysis for qualitative policy research. In *Policy Studies Journal* 49(1), 300–324.
- Lee, Monica/Martin, John Levi 2015: Coding, counting and cultural cartography. In *American Journal of Cultural Sociology* 3(0), 1–33.
- Lester, Tom 1994: Pulling down the language barrier. In *International Management* 49(6), 42–45.
- Lønsmann, Dorte 2011: *English as a corporate language: language choice and language ideologies in an international company in Denmark*. PhD Thesis. Roskilde Universitet.
- Marschan-Piekkari, Rebecca/Welch, Denise/Welch, Lawrence 1999a: Adopting a common corporate language: IHRM implications. In *International Journal of Human Resource Management* 10(3), 377–390.
- Marschan-Piekkari, Rebecca/Welch, Denise/Welch, Lawrence 1999b: In the shadow: The impact of language on structure, power and communication in the multinational. In *International Business Review* 8(4), 421–440.
- Monroe, Burt L./Colaresi, Michael P./Quinn, Kevin M. 2008: Fightin' words: Lexical feature selection and evaluation for identifying the content of political conflict. In *Political Analysis* 16(4), 372–403.
- Murakami, Akira/Thompson, Paul/Hunston, Susan/Vajn, Dominik 2017: 'What is this corpus about?': Using topic modelling to explore a specialised corpus. In *Corpora* 12(2), 243–277.
- Neeley, Tsedal 2011: Language and globalization: 'Englishnization' at Rakuten. In *Harvard Business School Organizational Behavior Unit Case*, 412–002.
- Neeley, Tsedal 2017: *The Language of Global Success: How a Common Tongue Transforms Multinational Organizations*. Princeton: Princeton University Press.
- Nelson, Laura K. 2020: Computational grounded theory: A methodological framework. In *Sociological Methods & Research* 49(1), 3–42.
- Park, Hoon/Dai Hwang, Sun/Harrison, J. Kline 1996: Sources and consequences of communication problems in foreign subsidiaries: The case of united states firms in South Korea. In *International Business Review* 5(1), 79–98.
- Peltokorpi, Vesa 2010: Intercultural communication in foreign subsidiaries: The influence of expatriates' language and cultural competencies. In *Scandinavian Journal of Management* 26(2), 176–188.
- Peltokorpi, Vesa/Vaara, Eero 2014: Knowledge transfer in multinational corporations: Productive and counterproductive effects of language-sensitive recruitment. In *Journal of International Business Studies* 45(5), 600–622.
- Piekkari, Rebecca 2006: Language effects in multinational corporations: A review from an international human resource management perspective. In: Stahl, G. K. / Björkman, I. (Eds.) *Handbook of Research in International Human Resource Management*, 536–550.
- Rafaeli, Anat/Oliver, Amalya L. 1998: Employment ads: A configurational research agenda. In *Journal of Management Inquiry* 7(4), 342–358.
- Reeves, Nigel/Wright, Colin 1996: *Linguistic Auditing: A Guide to Identifying Foreign Language Communication Needs in Corporations* 9, Bristol: Multilingual Matters.
- Sanden, Guro Refsum 2015: *Language strategies in multinational corporations: A cross-sector study of financial service companies and manufacturing companies*. Frederiksberg: Copenhagen Business School (CBS).
- Sievert, Carson/Shirley, Kenneth 2014: Ldavis: A method for visualizing and interpreting topics. In *Proceedings of the Workshop on Interactive Language Learning, Visualization, and Interfaces*. Stroudsburg: Association for Computational Linguistics.
- Sodhi, MS/Son, Byung-Gak 2010: Content analysis of or job advertisements to infer required skills. In *Journal of the Operational Research Society* 61(9), 1315–1327.
- Takino, Miyuki 2016: *Negotiating the challenges of using English in business communication: listening narratives of Japanese BELF users*. PhD Thesis. University of Southampton.
- Törnberg, Anton/Törnberg, Petter 2016: Combining cda and topic modeling: Analyzing discursive connections between islamophobia and anti-feminism on an online forum. In *Discourse & Society* 27(4), 401–422.

- Vecchi, Dardo De 2014: Company-speak: An inside perspective on corporate language. In *Global Business and Organizational Excellence* 33(2), 64–74.
- Walters, Nina/Fage-Butler, Antoinette 2014: Danish job advertisements: Increasing in complexity. *Communication & Language at Work* 3(3), 38–52.