Field Experiment Proposal for Bic Camera Electronics Stores:
Exploring the Extent of English Customer Service Impact on Sales

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A. Executive summary

In light of increasing need for multilingual customer support for Japan's retail industry and taking advantage of the upcoming influx of international students into the country, we are proposing a plan for a field experiment to test the impact on sales of different forms of English customer service in Bic Camera's physical stores to gain actionable insights that would support future sales-related strategic decisions. We have selected the Kanto region to be the focus area for this experiment given its high concentration of international students and Japan's various demographic, cultural, and financial differences among its regions that might present a challenge in ensuring homogeneity within the sample.

The experiment will be conducted within September during Bic Camera's student sales when many international students arrive in Japan for the Fall semester. Specific store locations are chosen based on their proximity to universities in the region with high numbers of international students enrolled. By manipulating sales employees' English fluency and provision of an English product catalog, our experiment seeks to test the impact of these two variables on sales metrics like average total sales revenue and average percentage of successful sales among staff. We also propose a plan to analyze the result and test for significance of the manipulated variables' impact on sales metrics.

The results of this experiment will help managers at Bic Camera to not only confirm the noticeable impact of English customer service on sales within the international student customer segment, but also the extent of such impact. This will be crucial in driving different sales strategic decisions, especially those related to sales human resource and in-store informational material. Although the scope of this experiment is currently limited to the Kanto region and the target sample is international students, the experiment design can be replicated in other regions and towards different foreign customer segments to help the company develop highly customized strategies and policies that would help maximize sales and thus, strengthen its competitive position in the market in the long run.

B. Motivation

In recent years, with international travels becoming gradually easier, Japan has seen an influx of immigrants and tourists alike looking to experience Japan's unique culture and what it has to offer. This in turn drives many local businesses to introduce additional linguistic support in order to more easily communicate with foreign customers. Thus, store fronts such as Bic Camera would presumably be eager to introduce new customer service that is in tandem with the interests of foreigners. In-store experience that is geared towards foreign customers goes a long way in ensuring expected level of service and reduces language barrier-related frustration for customers looking to purchase products.

Within the foreign customer sector, we noted that international students is a growing market as the number of international students in Japan has been increasing since 2010, reaching its peak in 2019 with over 310,000 students (Japan Student Services Organization, 2022). The most recent COVID-19 pandemic along with Japan's travel restrictions has left this number slightly decreased in 2020 and 2021; however, as Japan is slowly lifting the restrictions, a large number of international students traveling to Japan is soon to be expected. Additionally, for international students as well as many foreigners living long-term in Japan, registering for a SIM card tends to be a must, which is often done simultaneously with purchasing a smartphone.

Taking advantage of this situation, we propose that Bic Camera - one of the most well-known electronics chain stores in Japan among foreigners - should conduct a field experiment to test the impact of different forms of English customer service in their physical stores on sales to gain insights that would drive sales-related strategic decisions.

C. Research purpose and objective

1. *Problem statement*

It is generally assumed that customer satisfaction and overall revenue will increase if the company decided to implement new language support options for the in-store experience. Specifically,

aside from the original Japanese customer service that most superstores are doing up to this point, because of the marginal increase in international visitors traffic, it would be prudent to introduce English customer support as it is the most prevalent language as of date. However, without having the proper context or specific sample data on how customers would behave in response to the new support, as to whether or not it made a significant improvement in sales is a different issue. In regards to this, the company would have little to no clue on how much to invest in new implementation projects without knowing about the possible outcomes it could bring while also estimating the tangible profitability.

Furthermore, our long-term goal is to develop sales strategies that can be applied to Bic Camera stores nationwide. However, given the various demographic, cultural, and financial differences across Japanese regions, this would require more than one experiment. Thus, our purpose for this particular experiment is to develop sales strategies regarding English customer support for the Kanto region, where 50.5% of Japan's international students are distributed (Japan Student Services Organization, 2022), before considering repeating it in other regions. This means the experiment will be conducted within the Kanto area and the insights gained from it will be used to develop strategies for the Bic Camera chain stores in the Kanto region.

2. Research objective

Having outlined the purpose of this experiment, the next step would be to identify the means of English customer support to be tested in this experiment. We are proposing the two following:

- Verbal English conversation between sales employees and customers, which would be dependent on the salesperson's English proficiency
- Product-related information in English, which would be delivered through an English catalog that contains the general information and specifications of the products.

Our research objective here will be to test the impact of verbal English conversation on sales through a significant difference in sales metrics across different levels of staff's English proficiency and of product related information in English through a significant difference between when the English catalog is provided and when it is not. More specifically, we are testing for these hypotheses:

- Hypothesis 1: There is a significant difference in sales metrics among different levels of English proficiency. More specifically, sales metrics of employees with higher English proficiency will be significantly higher than sales metrics of those with lower English proficiency.
- Hypothesis 2: When an English catalog is provided, sales metrics will be overall significantly higher than when it is not. (However, within different levels of staff's English fluency, this difference in sales metrics could vary and might not be significant across all levels.)

D. Research design

1. Research design

    a. Experiment settings (location, duration, etc.)

- Location: The experiment will be carried out in the prefectures of the Kanto region. Since Tokyo-based international students make up a sizable portion of total international students in Japan (approx. 85k out of 279k) (Japan Student Services Organization, 2022), the experiment will include (at least) 5 stores within the closest proximity to universities with the highest number of international students in Tokyo and 1 to 2 stores close to other top universities on the same list in other prefectures. For a specific list of stores chosen for the experiment, number of international students in Japan by prefecture, and top universities with the highest number of international students, see the Appendix section.
- Duration: The experiment will be carried out during the month of September, which is at the start of the Fall semester for most schools in Japan. This is the time period that we can expect many international students to come to Japan and shop for new electronics like smartphones,

laptops, etc. September is also within the timeframe of Bic Camera's biannual student sales, meaning we can expect enough international student customers visiting store locations to get a sufficient sample size.

     b. Participants and sample selection

- Participants of this experiment consist of 2 main groups: international student customers and Bic Camera's sales employees.

- International student customers will specifically include international students enrolled in higher education institutions and Japanese language institutes who shop at Bic Camera's stores in Kanto. This participant group will not be informed of the experiment and will have their identity (as an international student) checked through self-report (during conversation with the salesperson) and consequently by their student ID (when they check out and verify that they are eligible for the student discount).

- As for the sales employees, we attempt to keep the differences between each individual as little as possible, with the exception of their English proficiencies and whether or not they can use an English catalog when dealing with customers. We will limit our sales employees to full-time staff who have completed the new employee training process (assuming that Bic Camera trains their new employees) and have worked at Bic Camera for at least 6 months. Employees who are store managers, team leaders, or under training to be managers will be excluded. In other words, we are trying to only include full-time associate-level sales employees in this experiment. Employees will be informed of the experiment and asked for cooperation.

     c. Manipulated variables

- English proficiencies of sales employees: In order to observe the effect of this variable on sales performance towards international students, we are going to use a mock TOEFL (Test Of English as a Foreign Language) exam to separate the employees based on their score. The test will be hosted during what we would call 'mandatory employee training' and participants will not be informed of the test before this 'training' to make sure that the result accurately and objectively reflects their current proficiency. We will use the exam score and the conversion scale between TOEFL and the Common European Framework of Reference for Languages (CEFR) (details in the Appendix section) to separate employees into 3 groups as follow:
  - Group 1: Those who do not speak English and those who are at level A1 and A2 on the CEFR scale
  - Group 2: Those who are at level B1 and B2 on the CEFR scale
  - Group 3: Those who are at level C1 and C2 on the CEFR scale and native English speakers

- Provision of English catalog: The English catalog will be designed and structured the same as Bic Camera's catalog that contains products' specifications, prices, and other information. This catalog will be randomly distributed among employees of each group so that within one group, there will be roughly the same number of employees who use the English catalog as the number of those who don't. Managers and team leaders will be in charge of distributing the catalog.

     d. Experiment procedures

- The experiment procedures for this experiment will be overall similar to the usual sales procedures between customers and Bic Camera's sales employees.

- Since we are not informing customers of this experiment and only checking for their student IDs during check out, we will ask our employees to carefully and unobtrusively ask if the customer is an international student when discussing with them.

- In order to make sure that each employee of the same store gets to serve a similar number of customers, we will have the sales team leaders and managers (who are not participants of the experiment) to randomly assign customers to employees.

2. ***Outcomes and measure***
   a. *Outcome metrics*
- To test the effect of English proficiencies on sales performance, we will measure the following metrics across different groups over all the Kanto region and across different groups within each prefecture:
  - Average total sales revenue: This can be directly taken and calculated from the sales records.
  - Average percentage of successful sales: Depending on the availability of this metric in Bic Camera's sales records, we will either take the numbers directly from the stores' databases or measure it first-hand with the assistance of store managers and team leaders who are in charge of supervising the experiment at store locations.
- To test the effect of the English catalog on sales performance, we will measure the above metrics among those who use the English catalog and those who do not within each group of English proficiency level.
   b. *Effect testing*
- To test the effect of English proficiency on sales, we will run ANOVA tests to find out if there is a significant difference in the average total sales and average percentage of successful sales, respectively, across 3 different employee groups. If the tests return significant variance in means of the metric, we can conduct post-hoc analyses to find out which group(s) has significantly higher or lower mean(s) than other groups.
- To test the effect of the English catalog on sales, we will also run 3 independent sample tests within each group of employees (based on their English proficiency) to see if there is a significant difference in each of the 2 metrics between employees who use the catalog and those who do not. If the test proves that there is a significant difference in a group, we can conclude that among the employees with a certain level of English proficiency, the provision of an English catalog will affect their performance. Then, we can also run further tests to see if the sales metrics of those who use the catalog are significantly greater than the metrics of those who do not use it.
- Since we also suspect that the effect of the English catalog on sales might not be equally significant across 3 employee groups, we can also run extra ANOVA interaction tests to confirm this hypothesis and compare the effect of the English catalog on sales metrics among the groups.

3. ***Ethics***
- Since the procedures of this field experiment will overall resemble the usual sales procedures taking place at Bic Camera, the only potential ethical issue to expect will be regarding customer personal information. Although we do ask for customers' student IDs at checkout for the purpose of verifying their identity as international students, this is something that Bic Camera has been doing during its previous student sales and we can continue to adopt their policies regarding protecting customer personal information in this experiment to make sure that employees and we, the research team, will only get access to non-sensitive information about customers.

4. ***Caveats and other concerns***
   Given that this is a field experiment, we are only trying to manipulate the two variables as mentioned while keeping the setting as similar to the usual sales activities at Bic Camera stores as

possible. Therefore, the experiment result might be subject to certain inaccuracies and biases as follow:

- Unless the customer makes a purchase and presents their student ID at checkout, we can only check for their identity through self-report (having the employee 'unobtrusively' ask the customer). This can affect the accuracy when measuring the percentage of successful sales. However, we do not that there will be
- Even though we tried to keep the differences among participating employees as minimal as possible by selecting full-time associate level employees, there will still be differences in experience since some of them, for example, could have been working as salespersons at electronics stores in the past. This is why we will have managers and team leaders randomly assign customers to employees to make sure that employees within each store get to serve a similar number of international student customers. Doing this will help us minimize the potential impact of experience difference on sales revenue. As for the other metric - percentage of successful sales, we can try to further filter the employees to exclude those who are significantly more experienced before calculating the average and running tests.

In order to encourage employees to participate and to ensure that they would remain participants within the time frame of the experiment, we are proposing an hourly wage bonus of 10% throughout the month. Instead of providing a flat bonus amount, we decided that an hourly wage bonus will be better at incentivizing employees to commit to the experiment from start to finish.

E. Managerial implications

So far, we have presented the motivation, outlined the objectives, proposed the design of the experiment, and planned for analyzing the test results. If this experiment is implemented, the results can be interpreted to not only confirm whether or not English customer support will have a noticeable impact on sales, but also to understand to which extent it should be provided. For instance, regarding sales employee's English fluency, we can determine the desired average level of English proficiency for staff by testing at which level of English do the sales metrics see the most significant improvement. This could support the company's future decisions regarding employee training, hiring requirements, and even staff allocation. Additionally, by testing the effect of the English catalog on sales among different levels of staff's English fluency, we can identify employees who will benefit the most from it when dealing with international students or foreigner customers in general, so that the company can provide the necessary resources to help them improve their sales efficiency. Ultimately, the insights to be gained from this field experiment and the decisions made based on them will contribute to the quality of customer service at Bic Camera stores, which will in turn, help drive the company's sales performance. In the long run, this will also help the company to strengthen its position in the market since as mentioned, many local businesses in Japan are now seeking to adopt multilingual customer service as the country is seeing a growing number of foreigner residents. From another perspective, although this experiment focused specifically on international students to maintain the demographic consistency within the sample, we believe that the strategies and policies to be adopted by the company as a result of this experiment could also benefit the Bic Camera's sales performance within the forerign customer segment in general. Last but not least, if the experiment proves to be successful in the Kanto region, in the short run, the business will be likely to benefit considerably given that a sizable portion of Japan's international students and foreigners in general are distributed. The company's executives can then consider replicating the experiment in other regions to deploy regionally customized strategies that would boost their in-store sales nationwide.

References

Japan Student Service Organization (2022). Result of International Student Survey in Japan, 2021. *Study in Japan*. https://www.studyinjapan.go.jp/en/_mt/2022/03/date2021z_e.pdf

ETS (n.d.). Setting Score Requirements. *ETS.* https://www.ets.org/s/toefl-essentials/score-users/scores-admissions/set/

Appendix

1. Trends in number of international student in Japan (Japan Student Service Organization, 2022)
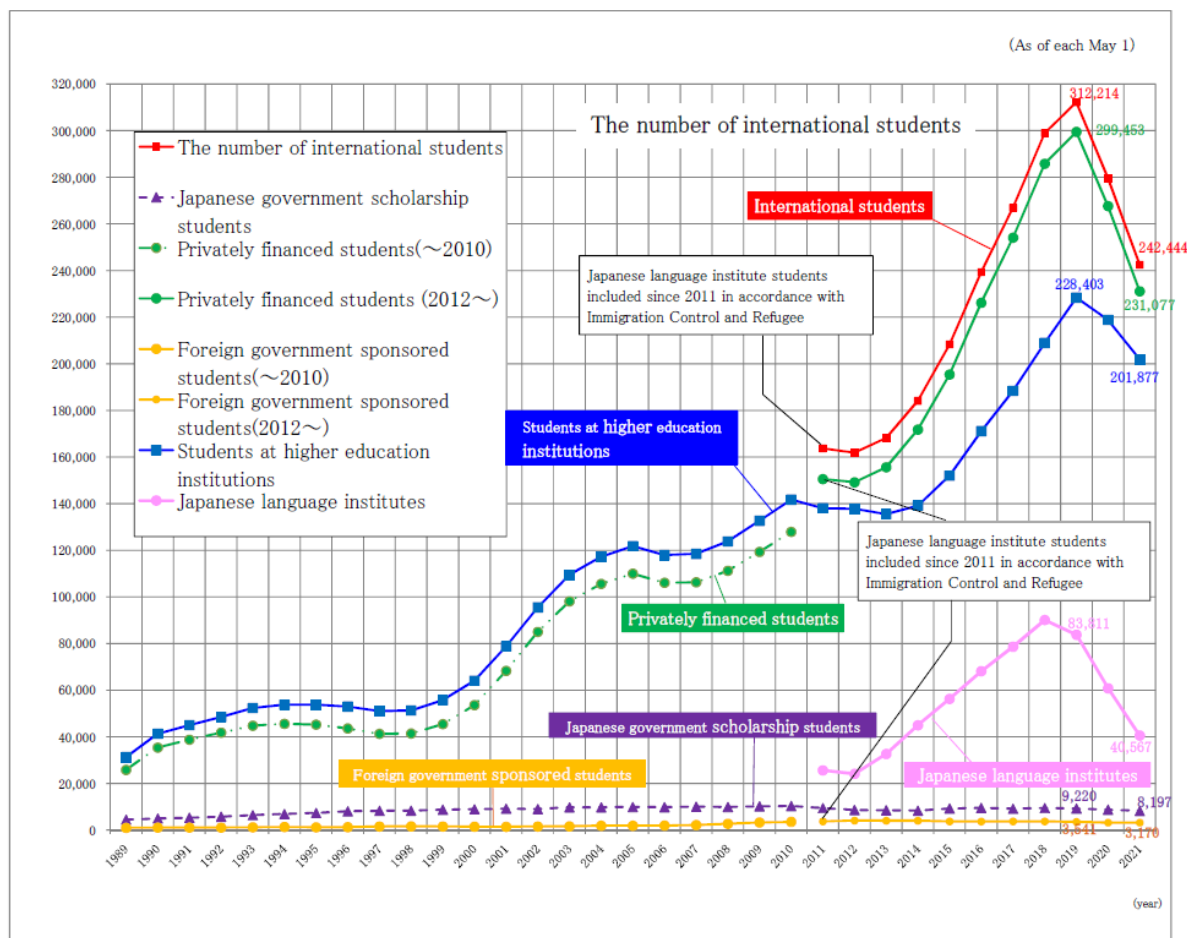
2. Number of international students by region and prefecture of Japan (Japan Student Service Organization, 2022)

Region	Number of students	% of total	Prefecture	Number of students		Region	Number of students	% of total	Prefecture	Number of students	
Hokkaido	3,749 (4,075)	1.5% (1.5)	Hokkaido	3,749	(4,075)	Kinki	50,066 (53,126)	20.7% (19.0)	Mie	1,500	(1,704)
									Shiga	547	(545)
									Kyoto	13,638	(13,807)
									Osaka	21,783	(24,361)
									Hyogo	10,756	(10,729)
									Nara	1,272	(1,349)
Tohoku	6,289 (7,184)	2.6% (2.6)	Aomori	377	(416)				Wakayama	570	(631)
			Iwate	417	(411)	Chugoku	10,152 (11,545)	4.2% (4.1)	Tottori	297	(320)
			Miyagi	4,231	(4,873)				Shimane	314	(382)
			Akita	285	(323)				Okayama	3,432	(3,548)
			Yamagata	280	(315)				Hiroshima	3,999	(4,746)
			Fukushima	699	(846)				Yamaguchi	2,110	(2,549)
Kanto	122,383 (144,443)	50.5% (51.7)	Ibaraki	4,153	(4,897)	Shikoku	1,767 (1,868)	0.7% (0.7)	Tokushima	562	(515)
			Tochigi	2,665	(3,009)				Kagawa	669	(672)
			Gunma	4,167	(4,726)				Ehime	317	(479)
			Saitama	10,309	(11,514)				Kochi	219	(202)
			Chiba	8,683	(10,212)	Kyushu	26,376 (31,394)	10.9% (11.2)	Fukuoka	16,537	(19,260)
			Tokyo	85,191	(100,799)				Saga	576	(922)
			Kanagawa	7,215	(9,286)				Nagasaki	1,479	(1,959)
Chubu	21,662 (25,962)	8.9% (9.3)	Niigata	1,965	(2,198)				Kumamoto	921	(1,173)
			Toyama	481	(658)				Oita	3,479	(3,559)
			Ishikawa	1,871	(1,939)				Miyazaki	458	(633)
			Fukui	384	(458)				Kagoshima	1,130	(1,212)
			Yamanashi	1,080	(1,075)				Okinawa	1,796	(2,676)
			Nagano	1,025	(1,445)	Total	242,444 (279,597)			100.0% (100.0)	
			Gifu	1,846	(2,026)						
			Shizuoka	3,338	(3,815)						
			Aichi	9,672	(12,348)						

(   ) indicates figures as of May 1, 2020

Note: International students attending universities whose campuses lie in two or more prefectures are included in the figure for the prefecture where the main office of the university is located.

3. Bic Camera Store Locations chosen for the experiment:

Store Name	Prefecture	Store Location	Nearest University	Distance from University
BIC CAMERA AKIBA	Tokyo	4 Chome-1-1 Sotokanda, Chiyoda City, Tokyo 101-0021	University of Tokyo	1.8 km
BIC CAMERA Yurakucho	Tokyo	1 Chome-11-1 Yurakucho, Chiyoda City, Tokyo 100-0006	University of Tokyo	4.4 km
BIC CAMERA Akasaka-mitsuke eki	Tokyo	3 Chome-1-6 Akasaka, Minato City, Tokyo 107-0052	University of Tokyo	6.3 km
BIC CAMERA Ikebukuro Main Store	Tokyo	1 Chome-41-5 Higashiikebukuro, Toshima City, Tokyo 170-0013	Waseda University	3.6 km
BIC CAMERA Shinjuku West Exit	Tokyo	〒160-0023 Tokyo, Shinjuku City, Nishishinjuku, 1 Chome−5−1 新宿西口ハルク 2F〜7F	Waseda University	4.4 km
BICQLO Bic Camera	Tokyo	3 Chome-29-1 Shinjuku, Shinjuku City, Tokyo 160-0022	Waseda University	4.3 km
Kojima × BIC CAMERA Kawagoe	Saitama	〒350-1162 Saitama, Kawagoe, Minamiotsuka, 2 Chome−11−13	Tokyo International University	6.1 km

4. TOEFL Total Score Conversion Table (ETS)

CEFR level	TOEFL Essentials overall band score (1–12)	TOEFL iBT total score (0–120)
C2	12	114–120
C1	10–11.5	95–113
B2	8–9.5	72–94
B1	5–7.5	42–71
A2	3–4.5	n/a
A1	2–2.5	n/a
Below A1	1–1.5	n/a