Effects of an Information Sharing System on Employee Creativity, Engagement, and Financial Performance

Data Description

The data employed in our study were obtained from an organization on a proprietary basis. We are providing the editors with contact information for a representative of the organization who can confirm that data that we obtained. Tatiana Sandino will maintain a copy of the data and programs for at least six years (that is, until January of 2024).

The data description below includes four sections:

(1) A description of which authors handled the data and conducted the analyses
(2) A description of data sources and how the data was generated
(3) A copy of the pre- and post-experimental survey questions, and field interview questions.
(4) A description of how posters were rated by customer panels.

1. Description of which authors handled the data and conducted the analyses

Both coauthors (Shelley Li and Tatiana Sandino) worked on collecting, compiling, processing, and analyzing the data in Stata, with some assistance from Tatiana Sandino's research assistant, Kyle Thomas. To ensure visibility as well as easy and secure access to the datasets and programs, the coauthors saved their files in a secure shared drive (in the Harvard Grid) and organized them using the Stata Project manager tool. Both coauthors worked on data inquiries that required follow-up with the company. Tatiana Sandino visited India at the end of August/beginning of September 2016 to oversee the launch of the information sharing system app. A local researcher based in Delhi, India, Mayuresh Kumar (PhD student from Jawaharlal Nehru University), who had previously worked with Tatiana Sandino on other projects, served as interpreter and helped organize the workshops during Tatiana's visit to India. Later on, and in collaboration with company employees, Mayuresh conducted interviews and ran the customer panels at the company's stores. Both Shelley Li and Tatiana Sandino were present for almost all of the discussions with the managing director (virtually and/or in person). The data requests to the company and handling of data were approved by the Human Research Protection Program at Harvard. Not only the coauthors, but also all of the research assistants participating in the project completed human subjects training and were formally granted human subjects approval before

doing their research work. Bob Freeman (Director of Research Technology Operations, at Harvard Business School) and Seth Bruder (Tatiana Sandino's husband, technology entrepreneur) helped develop the software for the information sharing system app and the customer panel app, respectively.

2. Description of data sources and data generation

Data	Data Source	Details	Date obtained/ generated
Sales; Sales Days	Company's online database system	Detailed invoice data (sales, tax, profit, date, store, and item brand) were downloaded by the authors from the company's database. Data period: May 1, 2016 to Jan 31, 2017.	February 2017
Attendance; # of Promoters for Brand at Store	Company's online database system;	Some attendance data was downloaded from the company's database. Additional attendance data was provided by the company. Attendance data included login and logout times for each employee. Data period: May 1, 2016 to Jan 31, 2017.	February 2017
Value/Novelty of Creative Work	Customer Panel	A customer panel used a software application to rate each poster in terms of value and novelty (see Section 4 below).	February 2017
Poster Images	Company	A company employee at the headquarters collected the poster images from both control and treatment groups in July and August of 2016 (Pre-intervention) and collected poster images from the control group in October and December of 2016 (Post-intervention). Treatment group employees uploaded their posters into the information sharing system in October and December of 2016.	July, August, October, and December of 2016
Store size, age, location, and type of market	Company	The company provided data on store size, age, address, and type of market served (mainstream vs. divergent). It also provided the headquarters' address. We used these addresses to determine the latitude and longitude of the stores and the head office in order to calculate the distance to head office and number of nearby stores using Stata.	February and March 2017
Tenure and gender	Survey to Store Managers	Store managers were given surveys in the pre- and post-intervention periods asking them for employee name, gender, brand affiliation, and tenure (see Section 3 below).	August 2016; January 2017
Engagement, motivation, and quality	Survey to Store Managers	Store managers were given surveys in the pre- and post-intervention periods asking them to rate employees in terms of engagement, motivation, and quality (see Section 3 below).	August 2016; January 2017
Access to Information Sharing System	Information sharing system	The information sharing system tracked each access to the system (including the username, store name, access time, type of activities performed in the system).	February 2017
2015 Sales and attendance data for (Used for Power Analyses in the accepted proposal)	Company's online database system	Downloaded from the company's online database. Data period: Jan 1, 2015 to December 31, 2015).	March 2016

3. Pre- and Post - Experimental Survey of Promoters & Interview Questions

We translated the survey questions into Hindi and pilot-tested these questions before implementing the survey.

Pre- and Post - Experimental Survey of Promoters Filled by Store Managers

Please provide the following information:

Name of the team leader evaluating the promoter: _____

When did you (the team leader) start working at this store? Month ____ Year____

Name of the promoter evaluated:_____

Brand for which the promoter works:_____

When did the promoter start working for Go Mobile? Month ____ Year_____

Please identify the promoter's gender: Male ___ Female ____

Please tell us the promoter's age: ____ years old

Please tell us the promoter's hometown: _____

Please identify the promoter's education level: (MA/M.Sc./M.Tech) _____; Bachelors (BA/B.Sc. / B.Tech) _____; 12th _____; 10th _____

Promoter's Engagement

On a scale from 1-5 (1=never true of the promoter, 2=rarely true of the promoter, 3=sometimes true of the promoter, 4=very often true of the promoter, 5=always true of the promoter), please indicate the extent to which each item describes the promoter you are evaluating.

	Never	Rarely	Sometimes	Very often	Always
He/she works very hard on the job	1	2	3	4	5
He/she brings a lot of energy to the job	1	2	3	4	5
He/she is interested in the job	1	2	3	4	5
At work, he/she pays a lot of attention to the job	1	2	3	4	5

Quality of Sales Posters

On a scale of 1-5 (1=Lowest rating, 2=Second to lowest rating, 3=Medium rating, 4=Second to highest rating, and 5=Highest rating), please rate the promoter relative to other promoters working for the same brand based on the points given below:

	Lowest rating	Second to lowest rating	Medium rating	Second to highest rating	Highest rating
How attractive his/her posters are	1	2	3	4	5
How well his/her posters communicate promotion deals	1	2	3	4	5
How effective his/her posters are in generating profitable sales	1	2	3	4	5

<u>Motivation</u> to Create High-quality Posters

On a scale from 1-5 (1=never true of the promoter, 2=rarely true of the promoter, 3=sometimes true of the promoter, 4=very often true of the promoter, 5=always true of the promoter), please indicate the extent to which each item describes the promoter you are evaluating.

	Never	Rarely	Sometimes	Very often	Always
Over the past month, he/she has been very interested in creating sales posters.	1	2	3	4	5
Over the past month, he/she has felt proud of the sales posters he/she came up with.	1	2	3	4	5
Over the past month, he/she has realized that creating high-quality sales posters is an important part of the job.	1	2	3	4	5

<u>Ability</u> to Create High-quality Posters

On a scale from 1-5 (1=never true of the promoter, 2=rarely true of the promoter, 3=sometimes true of the promoter, 4=very often true of the promoter, 5=always true of the promoter), please indicate the extent to which each item describes the promoter you are evaluating.

	Never	Rarely	Sometimes	Very often	Always
Over the past month, he/she greatly improved his/her ability to create high-quality sales posters.	1	2	3	4	5
Over the past month, he/she greatly improved his/her ability to create sales posters with more appealing visual designs.	1	2	3	4	5
Over the past month, he/she actively sought ways to learn about how to create better posters.	1	2	3	4	5

Interview questions:

On the use of the poster sharing system

1. Do you know how to access and use the poster sharing system? Ask the interviewees to demonstrate how to access and use the system.
2. Have you experienced any trouble accessing or using the system? Please explain.
3. When and how often (if ever) do you access and use the poster sharing system?
4. Why don't you access the system more often?
5. Why do you use the poster sharing system?

   If the person doesn't answer, provide examples: To upload your own posters and let others see them? Because the TLs asked you to do so? Because you are curious to see the posters created by people in other stores so that it would give you more ideas in creating your own posters? Other reasons?
6. When you access the system, what posters do you view most often?

   If needed, prompt an answer: Your own posters? The posters created by other employees in your store? The posters created by employees in other stores but for the same brand? The posters created by employees in other stores and for different brands? The posters that you labeled as "favorites"?
7. Have you had any challenge uploading your own posters? If so, how do you think the company can improve the process of updating the system with new posters?

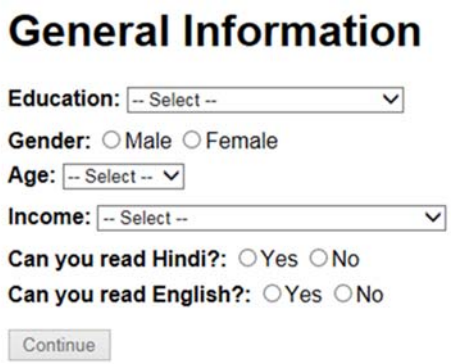
On the impact the poster sharing system has had on interviewees

8. What do you think is a high-quality poster? Has the poster sharing system changed what you consider to be a high-quality poster? Explain.
9. Do you consider the creation of posters an important part of your job? Why, or why not? Has the poster sharing system changed the way you think about the importance of creating posters as part of your job? Explain.
10. Has the poster sharing system changed the way you make new posters? Explain.
11. Have you found the poster sharing system to be helpful? Why, or why not?
12. Is there anything (else) you like about the poster sharing system?
13. What do you dislike about the poster sharing system?
14. How do you think the system can be improved to be more useful for you?

4. Customer Panel Meeting

By the end of the experiment, we had collected 683 unique posters in total from both treatment and control groups. These posters were then evaluated by customers for their quality. Each poster was evaluated along two dimensions: "attractiveness" and "usefulness;" and by two income groups of customers: "high income" and "low income."[1]

In order to ensure the quality and facilitate the collection of the customer ratings, we developed a software application that assigned the 683 posters to 128 different batches ("assignments"). Each assignment consisted of 25 posters organized by brand.[2] We recruited three proctors (an independent researcher hired by the research team and two head office employees at MPR) to conduct the customer evaluation sessions. The proctors set up computer stations at five different retail stores, some locations serving high-income customers and others serving low-income customers. The proctors then approached the customers at the stores and asked them whether they wanted to participate in a study to assess the quality of some sales posters. Each potential participant was told that they could get paid 300 rupees for completing one assignment on the computer (i.e. evaluating 25 posters according to the instructions) and they could complete up to 8 assignments (i.e. get 2,400 rupees in total). If they agreed to participate, they were shown to the computer station, where they signed a consent form on the screen, selected their preferred language (Hindi or English), and answered a few survey questions as shown below.



[1] We define "high income" customers as those earning more than 5 lacs (500, 000 rupees) a year; "low income" customers as those earning equal to or less than 5 lacs a year. Participants identified whether they belonged to the high-income or low-income category when they answered the few survey questions leading up to completing the poster-evaluation assignments.

[2] We grouped posters from the same brand into the same assignment to facilitate comparison and avoid confusion (e.g. some individuals during pilot tests confused the "attractiveness" of the posters with the "attractiveness" of the brands). To complete 25 posters per assignment even if the number of posters per brand was not a multiple of 25, we assigned some of the posters twice to different batches. If the number of posters of a single brand was less than 25, we combined that brand with another brand promoting similar products (whether they were handsets, connections, insurance or credit) at similar prices to generate the batches corresponding to those two brands as belonging to the same group.

The software randomly determined whether the participant would rate the posters either based on their "attractiveness" or their "usefulness." If the computer assigned the customer to the "attractiveness" condition, the instruction screen the participant saw looked as follows:[3]

Instructions

Assignment

We are going to ask you to fill in a few questions about yourself and then show you a batch of 25 sales posters from a mobile phone retail chain. We will ask you to rate the posters based on their **attractiveness**.

- **Very attractive** posters are those that grab your attention **the most**. For example, you know that a poster is attractive if it prompts you to stop, read it, and walk into the store.
- **Not attractive** posters are those that grab your attention **the least**. For example, you know a poster is not attractive if it does not stand out.

We will ask you to sort the posters into 5 buckets. The buckets will be ordered from not attractive posters to very attractive posters.

The assignment will take between 10 and 15 minutes.

Payment

A code will appear on the screen when you are finished. To get paid, you will need to give this code to the person who set up this assignment for you.

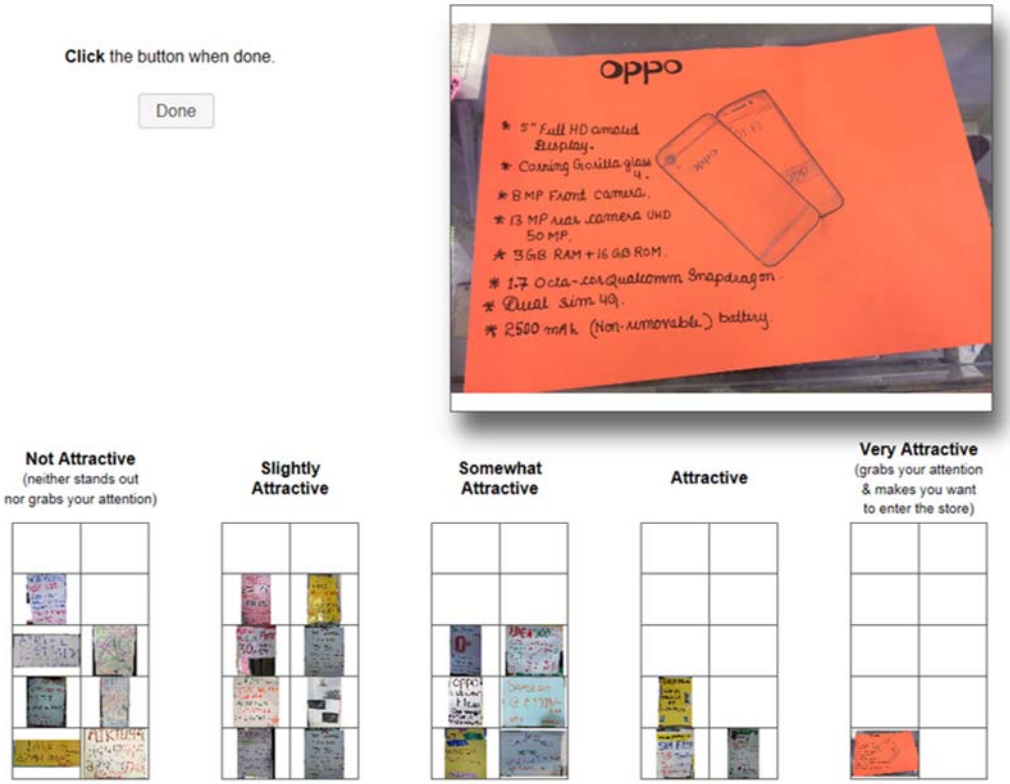
You may be offered the chance to complete additional assignments, up to 8 total. To get paid, you will need to provide one code for each assignment to the person who set up this assignment for you.

Continue

To complete the assignment the participants entered a screen where they were presented a stack of 25 posters to be "dragged" and sorted into five different buckets. The software allowed the participants to view the posters already assigned and rearrange them. The screen looked as follows once the participant finished sorting:[4]

[3] Instructions for the evaluation of "usefulness" were identical to those in this screen except for the fact that they changed the word attractiveness for usefulness and substituted the subsequent "definitions" as follows: **Very useful** posters are those that most clearly communicate the products or the deals offered. **Not useful** posters are those that are least able to communicate the products or the deals offered.

[4] The screen for the evaluation of "usefulness" is similar to this screen except for the labels of the five buckets: "Not Useful (least able to communicate the products or deals offered)", "Slightly Useful", "Somewhat Useful", "Useful", and "Very Useful".



After the participants finished one assignment, they were presented with a completion code and asked whether they wanted to exit the system and get paid or to continue and complete more assignments (up to 8 in total).

The proctors read the instructions with each participant, answered their questions, and made sure that they fully understood the assignments and the meaning of “attractiveness” or “usefulness”. They also asked the participants to explain their rationale for arranging the posters into the different buckets after the participants had sorted the first 10 posters of each assignment, forcing them to think carefully about, and verify that they understood, the evaluation criteria (rather than rushing through the assignments to get paid). Throughout the exercise, the proctors accompanied and monitored the participants.

The software system captured every rating of each poster, assigning the lowest score (1) to the far-left category (“Not Attractive” or “Not Useful”) and the highest score (5) to the far-right category (“Very Attractive” or “Very Useful”).