

Pre-Analysis Plan: Media Usage and News Consumption

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Abstract

Various important issues at the center of today's politics—such as climate change and immigration—are imbued with citizens' misperceptions. A growing body of research therefore explores whether such misperceptions can be mitigated by providing corrective information. While such corrections have been shown to be effective in reducing misperceptions, they appear to have little to no effect on underlying attitudes. Our study contributes to this active research area by examining how variations in the source and delivery mode of corrective information moderates their effectiveness. In our experimental design, respondents are exposed to a news article about immigration reported by either Fox News or MSNBC. The main treatment consists of either assigning or allowing free-choice of the respective media source. In order to isolate the effect of delivery mode and messenger, the news content is held constant across news sources.

1 Summary

This document describes the planned analyses for an online survey experiment on the effectiveness of corrective information on misperceptions about the economic impact of legal immigration. As part of the experiment, participants are asked to answer questions about their use of different media sources, political leanings, and attitudes toward current issues covered in the news. Depending on the experimental condition, participants are asked to choose, or are assigned to, an article published by different news channels (Fox News vs. MSNBC), which discusses the economic impact of legal immigration. After reading the article, participants are asked to evaluate the news story and answer general questions about their attitudes towards immigration.

2 Research Design

2.1 Ethics

This study has been granted exempt status by the University of Wisconsin-Milwaukee's Institutional Review Board (#20.044) and has been granted approval to waive documentation of informed consent. All participants could stop participation at any time in the study and were debriefed at the end.

2.2 Sample

This study will be conducted using a sample of 600 participants recruited via Amazon's Mechanical Turk. It will be advertised as a survey on "Media Usage and News Consumption," where participants are asked to answer a short survey about your personal media diet and issues currently discussed in the news. The approximate length of the survey is 30 minutes and the reward will be \$2. MTurk workers are required to have a 90% approval rate and have to be located in the United States in order to be eligible to participate. In line with current best practices, we are going to identify and screen out bots (see Kennedy et al. 2018).

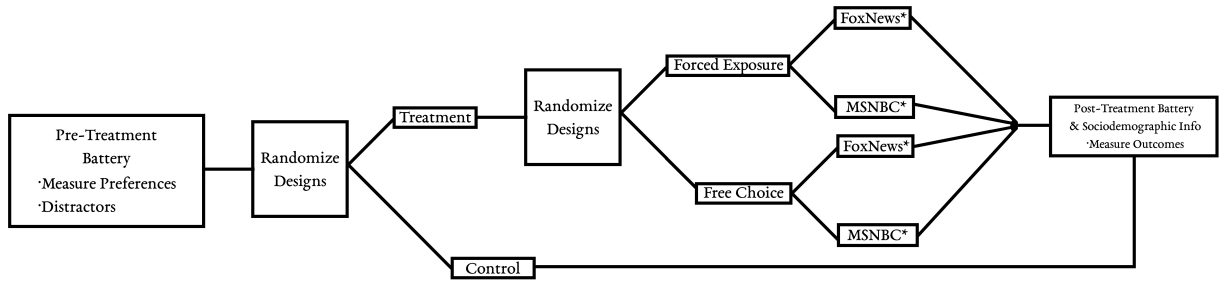


Figure 1: Survey Flow

2.3 Overview

Our study builds on the Preference-Incorporating Choice and Assignment Design proposed by De Benedictis-Kessner et al. (forthcoming) and Knox et al. (2019). Participants are randomly assigned to a free choice treatment condition, a forced exposure treatment condition, or a control group. Participants in the free choice condition are asked to choose whether they want to see a recent breaking news tweet from either FoxNews or MSNBC. After viewing the tweet, which links to a news story focusing on immigrant-owned businesses in the US, participants are asked to read the corresponding article. In the forced exposure condition, participants do not have the option to choose a news organization (FoxNews or MSNBC) but are randomly assigned to one or the other. In either condition, the content of the news article is held constant across sources. Finally, participants who are randomly assigned to the control group skip the tweet and article entirely and move directly from the pre-treatment battery (questions on media usage, stereotyping, and political attitudes/behavior) to the post-treatment battery (questions on attitudes toward immigration and trust in different media sources). For more details on the design, see Figure 1 above as well as the full questionnaire including all treatment conditions at the end of this pre-analysis plan.

2.4 Outcome measures

We consider several outcome measures capturing attitudes towards legal immigration and its perceived effects on the economy (see full questions below). Unless otherwise specified, outcomes that are measured using multiple variables will be combined in an additive scale. We are going to ensure that all items load properly on a single factor and exclude those that do not. Furthermore, we will report results using individual items in the appendix.

Economic impact of immigration: Our first outcome of interest addresses the perceived economic impact of legal immigration. The news article covers information on the number of people in the US who are employed by immigrant-owned businesses as well as the total number of sales of immigrant-owned businesses. Substantively, we want to examine whether the news article is able to correct common factual misperceptions on these issues.

Attitudes towards immigration: Our second outcome measure focuses on people's attitudes towards legal immigration. We include one question asking participants whether the number of immigrants should be increased or decreased (this item will be analyzed individually). Two additional questions capture respondents' beliefs about how much immigrants contribute to society by paying taxes and creating jobs. Together, the items will allow us to assess whether the correction of misperceptions is associated with subsequent attitude change.

Trust in news sources: Lastly, we include a battery of items measuring trust in different news sources. Since the content of the news article is held constant between sources, we can examine how exposure to an atypical news story (in this case published by FoxNews) impacts people's perception of the source itself.

In addition to these main variables, we evaluate four additional outcomes and conduct a simple manipulation check. Note that by the nature of the design, these items can only be measured in the two treatment arms of the experiment and are not included in the control group.

Engagement with tweet: As described above, the tweet shown to participants consists of a link to a news article. While the link itself is not active, we can capture whether participants nevertheless try to click on it. Since participants are never asked explicitly to click on any links, their willingness to do so indicates the degree to which they are interested in further engaging with the content voluntarily.

Response latencies: In order to further assess the extent to which respondents are interested in the article and comply with the instructions to read it, we will also measure the amount of time that individuals spend viewing the tweet and reading the news story.

Sharing the article: After reading the article, participants are asked to report their willingness to share it on social media, discuss it with friends, or if they would be likely to seek out more information regarding the topic of the tweet and story (see De Benedictis-Kessner et al. forthcoming for similar items).

Evaluation of the article: Our final outcome measure consists of a basic evaluation of the article, asking participants to disclose if they found the article fair or unfair, hostile or friendly, bad or good, skewed or balanced, American or un-American, and accurate or inaccurate.

Manipulation Check: In order to assess whether the tweet and news article were actually read by participants, we include a brief manipulation check. Specifically, respondents are asked which news organization published the story and what topic was covered by it.

2.5 Hypotheses

H1: When free to choose what information they will expose themselves to, people will seek out information sources that are more likely to be consistent with their priors.

For the main outcome measures (i.e., those that are also included in the control group), our analysis will consist of three comparisons:

1. **control vs. assigned source:** Those who receive information from an assigned source are more likely to update their beliefs than those who are in the control group.
2. **control vs. free choice:** Those who receive information from a chosen sources are more likely to update beliefs than those in the control group.
3. **(control vs. assigned source) vs. (control vs. free choice):** [which is essentially equivalent to assigned vs. free choice]

Allowing people to choose their preferred information source makes corrective information more effective:

H2: Those participants who are given the opportunity to choose the tweet and article will be more likely to update their beliefs than those who are assigned a source randomly.

In allowing for an endogenous information search in our survey design, we can manipulate the information search process. Not only do we expect that people seek confirming information, but those allowed to seek information will be more likely to their update beliefs than those assigned to corrective information. However, how individuals treat facts and other types of information depends on their motivation and ability to interpret such information (Taber and Lodge 2006). Without substantial motivation to accurately process information, individuals may interpret new information through the prism of their extant attitudes.

The next set of comparisons focuses on the sources themselves rather than the delivery method. This part would exclude the free choice arm of the experiment: control vs. msnbc Participants that were assigned msnbc will update their beliefs more than the control group. control vs. fox Participants that were assigned fox will update their beliefs more than the control group. msnbc vs. fox Participants who were assigned their preferred media choice: H3: Those who receive information from 'friendly' sources are more likely to update beliefs.

Both participants who receive information from FoxNews and MSNBC will update their beliefs to a greater degree than the control group; however, those participants who were assigned a source which is closer to their real media diet are more likely to update their beliefs – a FoxNews consumer is more likely to update his beliefs after reading a FoxNews tweet and report than if he read this same report from MSNBC.

We have some additional outcome measures (e.g., time spent on the article, sharing, clicking on the tweet), which are not included in the control group. Because of this, we can only compare the differences between the assigned vs free choice participants:

H4: Those participants who have the ability to choose the source are more likely to click on the link included in the tweet without being prompted to do so.

H5: Those participants who are given the opportunity to choose the tweet and article will spend more time reading both the tweet and article compared to those who were assigned a source.

H6: Those participants who are given the opportunity to choose the tweet and article will be more likely to assign positive attributes to the story when compared to those who were assigned a source.

H7: Those participants who are given the opportunity to choose the tweet and article will be more likely to say that they would share the information they learned on social media or with a friend when compared to those who were assigned a source.

I think that this is adequately covered in H3? msnbc vs. fox (in the assigned source arm) If msnbc was a preferred media choice of the participant, then the corrective information will be more effective. If msnbc was not a preferred media choice of the participant, then the corrective information will be less effective. If fox was a preferred media choice of the participant, then the corrective information will be more effective. If fox was not a preferred media choice of the participant, then the corrective information will be less effective

Our main outcome of interest is the difference between the pre- and post-treatment immigration attitudes for those participants who either chose or were assigned to FoxNews versus MSNBC. In general, we expect that those who could choose a news agency are more likely to pick a source similar to their usual media diet. Additionally, we expect those who read a news story from a trusted news source (and who are able to pick the news agency) are more inclined to change their attitudes in the direction of the news article.

Our second major variable of interest takes this analysis one step further. Instead of simply looking at the differences between the two sources, we look at the difference-in-differences between those who were allowed to choose their source and those who were assigned (H2). This measure takes into account the same pre- and post-treatment immigration attitude questions and determines how individuals update their beliefs on immigration when they are either given a choice or are assigned the source from which they receive the information.

Previous research examining the relationship between corrective information and attitude change showed that correcting misinformation does not always lead to attitude change (Hopkins, Sides, and Citrin 2019, Swire-Thompson et al. (n.d.)). However, others find that media can persuade people to change their attitudes under certain conditions (e.g., De Benedictis-Kessner et al. forthcoming).

To examine the differential effects of corrective information on attitude change, we need to look at two different processes of adopting new information: how people seek out information and how it is ultimately interpreted.

Selective exposure to information via different media sources may lead individuals to engage in a biased search process, seeking out information that supports their preconceptions and avoiding evidence that undercuts their beliefs (see Taber and Lodge 2006). This leads our first set of hypotheses regarding endogenous information search and its effectiveness.

H1: When free to choose what information they will expose themselves to, people will seek out information sources that are more likely to be consistent with their prior.

H2: Allowing people to choose their preferred information source makes corrective information more effective.

In allowing for an endogenous information search in our survey design, we can manipulate the information search process. Not only do we expect that people seek confirming information, but those allowed to seek information will be more likely to update beliefs than those assigned to corrective information.

However, how individuals treat facts and other types of information depends on their motivation and ability to interpret such information (Taber and Lodge 2006). Without substantial motivation to accurately process information, individuals may interpret new information through the prism of their extant attitudes.

H3: Those who receive information from ‘friendly’ sources are more likely to update beliefs.

We expect that citizens are more likely to alter their attitudes when the source is perceived as sympathetic to ideological predispositions.

In addition to these three main hypotheses, we also develop some additional hypotheses based on our secondary outcome measures:

H4: Those participants who receive the tweet and story from a ‘friendly’ source are more likely to click on the link including in the tweet without being prompted to do so.

In our design, participants are not prompted to click the link which is included in the tweet; instead, to move forward, the participants must click the continue arrow found on the bottom of the survey. If a participant were to click this link, we expect that this participant is more engaged with the subject matter, potentially because the source aligns with their priors.

H5: Those participants who are given the opportunity to choose the tweet and article will spend more time reading both the tweet and article compared to those who were assigned a source.

H6: Those participants who are given the opportunity to choose the tweet and article will be more likely to say that they would share the information they learned on social media or with a friend when compared to those who were assigned a source.

H7: Those participants who are given the opportunity to choose the tweet and article will be more likely to assign positive attributes to the story when compared to those who were assigned a source.

3 Estimation strategy

3.1 Statistical significance

Throughout this study, we will use two-sided tests with an α -value of 0.05 as the cutoff for statistical significance. In our graphical displays we will additionally plot 90% intervals to signal statistical significance at $p < 0.10$.

3.2 Missing data

Respondents who report “don’t know” on the outcome measures (if applicable) or who skipped the question will be treated as missing and excluded from the respective analysis (basic listwise deletion). While we are going to use the manipulation checks to evaluate whether respondents read the information provided to them, we decided not to drop respondents who failed to pass the manipulation checks in the subsequent analyses (see for example Aronow, Baron, and Pinson 2018).

3.3 Main analyses

To test our hypotheses, we will rely on simple differences-in-means and OLS estimators to compare the outcome measures between each treatment and the control group, respectively. The main analyses will focus on the average treatment effects relative to the control as well as the difference-in-difference between both treatment effects. The power analyses reported below shows that given our sample size of 600, we have 85% power to detect a 0.3 standard deviation effect between the treatment and control group. Furthermore, we can detect a 0.2 standard deviation effect between both treatment conditions with 53% power. We will also consider heterogeneous treatment effects by pre-treatment covariates (stereotypes towards immigrants, whether immigration is seen as a major issue, and basic political predispositions). Furthermore, we will explore the average choice-specific treatment effect (ACTE) following Knox et al. (2019). However, our power analysis below suggests that our sample size is too small to reliably detect treatment effects.

3.3.1 Power analysis: basic 3-arm design (ATE w/o differentiating sources)

```
N <- 600
outcome_means <- c(0, .1, .3)
sd_i <- 1

population <- declare_population(
  N = N, u = rnorm(N, sd = sd_i))

potential_outcomes <- declare_potential_outcomes(
  formula = Y ~ outcome_means[1] * (Z == "0") +
    outcome_means[2] * (Z == "1") +
    outcome_means[3] * (Z == "2") + u,
  conditions = c("0", "1", "2"),
  assignment_variables = Z)

estimand <- declare_estimands(
  ate_Y_1_0 = mean(Y_Z_1 - Y_Z_0),
  ate_Y_2_0 = mean(Y_Z_2 - Y_Z_0),
  ate_Y_2_1 = mean(Y_Z_2 - Y_Z_1))

assignment <- declare_assignment(
  num_arms = 3,
  conditions = c("0", "1", "2"),
  assignment_variable = Z)

reveal_Y <- declare_reveal(
  assignment_variables = Z)

estimator <- declare_estimator(
  handler = function(data) {
    estimates <- rbind.data.frame(
      ate_Y_1_0 = difference_in_means(formula = Y ~ Z, data = data,
                                      condition1 = "0", condition2 = "1"),
      ate_Y_2_0 = difference_in_means(formula = Y ~ Z, data = data,
                                      condition1 = "0", condition2 = "2"),
      ate_Y_2_1 = difference_in_means(formula = Y ~ Z, data = data,
                                      condition1 = "1", condition2 = "2"))
    names(estimates)[names(estimates) == "N"] <- "N_DIM"
    estimates$estimator_label <- c("DIM (Z_1 - Z_0)", "DIM (Z_2 - Z_0)",
                                   "DID (Z_2 - Z_1)")
    estimates$estimand_label <- rownames(estimates)
    estimates$estimate <- estimates$coefficients
    estimates$term <- NULL
    return(estimates)
  })

multi_arm_design <- population + potential_outcomes +
  assignment + reveal_Y + estimand + estimator

# diagnose design based on 500 simulations
diagnose_design(multi_arm_design, diagnosands = declare_diagnosands(
  select = c("power", "bias")))
```

```
##
## Research design diagnosis based on 500 simulations. Diagnostics and estimates with bootstrapped standard errors
##
##      Design Label Estimand Label Estimator Label N Sims Power Bias
## multi_arm_design ate_Y_1_0 DIM (Z_1 - Z_0) 500 0.16 -0.00
##                                     (0.02) (0.00)
## multi_arm_design ate_Y_2_0 DIM (Z_2 - Z_0) 500 0.87 -0.00
##                                     (0.02) (0.00)
## multi_arm_design ate_Y_2_1 DID (Z_2 - Z_1) 500 0.51 0.00
##                                     (0.02) (0.00)
```

3.3.2 Power analysis: conditional effects depending on media preference (ACTE following Knox)

```
Nforced <- round(N/3)
Sfox_Afox <- .2 # note: S = preferred treatment, A = actual treatment
Sfox_Amsnbc <- .0
Smsnbc_Afox <- .3
Smsnbc_Amsnbc <- .4
sd_i <- 1

population <- declare_population(
  N = Nforced, u = rnorm(Nforced, sd = sd_i))

potential_outcomes <- declare_potential_outcomes(
  formula = Y ~ 0 +
    Sfox_Afox * (Z == "1") +
    Sfox_Amsnbc * (Z == "2") +
    Smsnbc_Afox * (Z == "3") +
    Smsnbc_Amsnbc * (Z == "4") + u,
  conditions = c("1", "2", "3", "4"),
  assignment_variables = Z)

estimand <- declare_estimands(
  acte_Y_fox = mean(Y_Z_1 - Y_Z_2),
  acte_Y_msnbc = mean(Y_Z_4 - Y_Z_3))

assignment <- declare_assignment(
  num_arms = 4,
  conditions = c("1", "2", "3", "4"),
  assignment_variable = Z)

reveal_Y <- declare_reveal(
  assignment_variables = Z)

estimator <- declare_estimator(
  handler = function(data) {
    estimates <- rbind.data.frame(
      acte_Y_fox = difference_in_means(formula = Y ~ Z, data = data,
                                       condition1 = "2", condition2 = "1"),
      acte_Y_msnbc = difference_in_means(formula = Y ~ Z, data = data,
                                       condition1 = "3", condition2 = "4"))
    names(estimates)[names(estimates) == "N"] <- "N_DIM"
    estimates$estimator_label <- c("DIM (Z_1 - Z_2)", "DIM (Z_4 - Z_3)")
```

```

estimates$estimand_label <- rownames(estimates)
estimates$estimate <- estimates$coefficients
estimates$term <- NULL
return(estimates)
})

multi_arm_design <- population + potential_outcomes +
  assignment + reveal_Y + estimand + estimator

# diagnose design based on 500 simulations
diagnose_design(multi_arm_design, diagnosands = declare_diagnosands(
  select = c("power", "bias")))

##
## Research design diagnosis based on 500 simulations. Diagnosand estimates with bootstrapped standard
##
##      Design Label Estimand Label Estimator Label N Sims  Power   Bias
## multi_arm_design   acte_Y_fox DIM (Z_1 - Z_2)   500   0.18   0.01
##                                     (0.02) (0.01)
## multi_arm_design   acte_Y_msnbc DIM (Z_4 - Z_3)   500   0.06  -0.00
##                                     (0.01) (0.01)

```

4 Full Questionnaire

4.1 Survey Flow Overview

- Pre-treatment measures:
 - Media usage
 - Stereotype battery
 - Political attitudes & participation
- Experimental manipulation:
 - Tweets
 - Full story
 - Attention checks & article evaluation
- Post-treatment measures:
 - Attitudes towards immigration
 - Trust in news sources
 - Sociodemographics

4.2 Pre-treatment measures

4.2.1 Block 1: Media usage

First, we want to ask a few questions about your current media diet.

[smedia] (*show same response options for each, randomize order*) On average, how often do you use the following social media platforms?

- YouTube
- Facebook
- Instagram
- Twitter

- Tumblr
1. Several times a day
 2. About once a day
 3. 3 to 6 days a week
 4. 1 to 2 days a week
 5. Every few weeks
 6. Less often
 7. Never
 8. Don't Know

[tv] (*show same response options for each, randomize order*) On average, how often do you watch *political* news on the following TV channels (including online content)?

- Fox News
 - MSNBC
 - CNN
 - NBC
 - CBS
1. Several times a day
 2. About once a day
 3. 3 to 6 days a week
 4. 1 to 2 days a week
 5. Every few weeks
 6. Less often
 7. Never
 8. Don't Know

[print] (*show same response options for each, randomize order*) And how often do you read about articles about *politics* in the following newspapers (online or offline)?

- New York Times
 - Washington Post
 - Wall Street Journal
 - USA Today
 - New York Post
1. Several times a day
 2. About once a day
 3. 3 to 6 days a week
 4. 1 to 2 days a week
 5. Every few weeks
 6. Less often
 7. Never
 8. Don't Know

4.2.2 Block 2: Stereotype battery

Next are some questions about different groups in our society.

[st_job] (*show same response options for each, randomize order*) Do you think that people in the following groups tend to be “intelligent” or “unintelligent”?

- Farmers
- Teachers
- Lawyers
- Politicians

(1) Intelligent - (7) Unintelligent, (8) DK

[st_race] (*show same response options for each, randomize order*) And do you think that people in the following groups are “hard-working” or “lazy”?

- Whites
- Blacks
- Hispanic-Americans
- Asian-Americans

(1) Hard-working - (7) Lazy, (8) DK

[st_age] (*show same response options for each*) And do you think that people in the following groups are “generous” or “selfish”?

- Silent Generation (born 1945 and before)
- Baby Boomers (born 1946-1964)
- Generation X (born 1965-1976)
- Millennials (born 1977-1995)

(1) Generous - (7) Selfish, (8) DK

4.2.3 Block 3: Political attitudes & participation

Next, we would like you to answer a few questions about your political viewpoints.

[polint] How often do you pay attention to what's going on in government and politics?

1. Always
2. Most of the time
3. Sometimes
4. Hardly at all
5. Never

[problem] (*randomize order*) What do you think are the most important problems facing this country? Please rank the following issues from the most important to the least important.

1. Economy
2. Terrorism
3. Immigration
4. Health Care
5. Environment

[ideol] Thinking about politics these days, how would you describe your own political viewpoint?

1. Very liberal
2. Liberal
3. Slightly liberal
4. Moderate
5. Slightly conservative
6. Conservative
7. Very conservative
8. Not sure

[pid] Generally speaking, do you think of yourself as a Republican, a Democrat, an independent, or other?

1. Republican
2. Democrat
3. Independent
4. Other



Figure 2: Fox News

[pid_lean] (if [pid] == other | independent) Do you think of yourself as CLOSER to the Republican party or to the Democratic party?

1. Republican party
2. Democratic party
3. Neither party

[pid_rep/pid_dem] (if [pid] == Republican | Democrat) Would you consider yourself a strong Republican/Democrat or a not very strong Republican/Democrat?

1. Strong
2. Not very strong

4.3 Experimental manipulation

4.3.1 Instructions for participants

- **If treatment condition = choice**
 - In the following section, we are going to show you a random tweet drawn from the accounts of two large news organizations. You can choose from which Twitter account the random tweet will be drawn. Afterwards, we are going to ask you some questions about the content of the news story.
 - **[choice]** (randomize order) From which Twitter account would you like to view a random tweet?
 1. Fox News
 2. MSNBC
- **If treatment condition = assigned**
 - In the following section, we are going to show you a random tweet drawn from the accounts of several large news organizations. Afterwards, we are going to ask you some questions about the content of the news story.
 - **[assigned]** (assignment to account invisible to participant)
 1. Fox News
 2. MSNBC

4.3.2 Tweets

4.3.3 Introduction for full story

Next, we will show you the content of the article linked in the previous tweet. **Please read the story carefully.** Keep in mind that we will ask you questions about the content of the article afterwards.

There will be a brief pause on the next screen so you can read the story. At the end of the pause, an arrow will appear at the bottom of the screen. Once the arrow appears, you may move on to the next screen of the survey by clicking on the arrow.



Figure 3: MSNBC

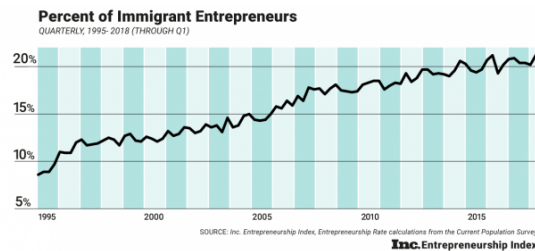


Figure 4: Percent of Immigrant Entrepreneurs

4.3.4 Full Story: Immigrant-owned Businesses on the Rise

William Hall | [Fox News/MSNBC]

A recent report released using U.S. Census Bureau data states that immigrant-owned businesses employed over 8 million workers in fiscal year 2017, up from 2016 totals. These businesses also experienced an increase in the total amount of sales revenue, which rose to almost \$1.3 trillion during the same period.

These statistics are borne out of hundreds of success stories across many different sectors of the economy, especially the service industry.

Eduardo Rodriguez, a 62 year old immigrant living in the Little Village neighborhood of Chicago, is a perfect example of this success. In an area of the city that has an unemployment rate of 13 percent and an annual median income of \$30,000—less than half of the national average—the Little Village community faces considerable economic challenges. However, these conditions have not stopped Rodriguez. He currently owns and operates four Dulcelandia stores in Little Village, each one packed with over 1,000 types of delicious candies from his home country of Mexico.

After immigrating here in 1966, Rodriguez opened his first store and it became an instant gathering spot in the neighborhood. “People seem to really like what we are doing, and I’m grateful that I had the opportunity to do this in the United States. It takes a lot of work and sacrifice – we’re fulfilling a niche market that people really want to buy from.”

Following in her father’s footsteps, Rodriguez’s daughter, Eve Rodriguez Montoya, has also opened up a handful of shops that specialize in healthy frozen yogurts with some Mexican-inspired flavors.

“Our community is very strong and hard-working – resilient and resourceful,” she said. “I’d say come to our community, get to know our people. Shop at our locations and see for yourself – Little Village is full of people who came to this country to achieve the American Dream.”

The Rodriguez’s story is just one of many. As more immigrants look to open their own businesses and employ more workers, many markets, both broad and niche, will continue to expand and provide more fuel to an already strong economy.

William Hall is a Business Reporter for [Fox News/MSNBC].

4.3.5 Attention checks & article evaluation

Please answer the following questions about the tweet as well as the article you just read.

[source] (*randomize order*) Which Twitter account / news organization published the story?

1. Fox News
2. MSNBC
3. New York Times
4. Wall Street Journal
5. Other
6. Don't know

[about] (*randomize order*) Broadly speaking, what was the news story about?

1. Immigrant-owned businesses
2. Stock market development
3. Innovation in the automotive industry
4. Young entrepreneurs in Silicon Valley
5. Don't know

[actions] Thinking about the news article you just read, how likely would you be to:

- Discuss the story with a friend
- Forward the story to a friend or colleague via email
- Post a link to the story on a social networking site, such as Facebook or Twitter
- Seek out additional information from another source on the topic featured in the story

(1) Very likely - (4) Not likely, (7) Not sure

[wordpairs] (*randomize order*) Below, you will find a list of pairs of words. Please rate the news article you just read on each of the pairs of words.

- [fair] (1) Fair - (5) Unfair
- [hostile] (1) Hostile - (5) Friendly
- [bad] (1) Bad - (5) Good
- [skewed] (1) Skewed - (5) balanced
- [american] (1) American - (5) Un-American
- [accurate] (1) Accurate - (5) Inaccurate

4.4 Post-treatment measures

4.4.1 Block 1: Attitudes towards immigration

(*only show this message in the control condition*) In this section, we want to ask you a few questions about immigration.

[employ] Across the United States, how many workers – immigrant and US-born – do you think are employed by immigrant-owned businesses?

1. Less than 500,000
2. 500,000 - 1 million
3. 1 million - 5 million
4. 5 million - 10 million
5. More than 10 million

[sales] Taking your best guess, what was the total number of sales of immigrant-owned businesses in the last year?

1. Less than \$500 billion
2. \$500 billion - \$1 trillion
3. \$1 trillion - \$1.5 trillion
4. \$1.5 trillion - \$2 trillion
5. More than \$2 trillion

(only show this message in the treatment conditions) In this section, we want to ask you a few questions about immigration in general.

[immig] Do you think the number of immigrants from foreign countries who are permitted to come to the United States to live should be...?

1. Increased a lot
2. Increased a little
3. Left the same
4. Decreased a little
5. Decreased a lot

(randomize order of remaining questions)

[taxes] Most people who come to live in the U.S. work and pay taxes. They also use health and social services. On balance, do you think people who come here take out more than they put in or put in more than they take out?

- 0 (Generally take out more) - 10 (Generally put in more)

[taxes_oe] Please explain your answer to the previous question in a few short sentences.

- TEXTBOX

[jobs] On average, would you say that people who come to live here from other countries will take jobs away from people already here or add to the economy by creating additional jobs?

- 0 (Take jobs away) - 10 (Create additional jobs)

[jobs_oe] Please explain your answer to the previous question in a few short sentences.

- TEXTBOX

4.4.2 Block 2: Trust in news sources

Let's briefly return to the different media sources mentioned at the beginning of the survey.

[tv_trust] *(show same response options for each, randomize order)* Overall, how often can you trust the following TV channels that their political news reporting is accurate?

- Fox News
 - MSNBC
 - CNN
 - NBC
 - CBS
1. Always
 2. Most of the time
 3. About half the time
 4. Sometimes
 5. Never
 6. Don't Know

[print_trust] *(show same response options for each, randomize order)* And how often can you trust the following newspapers that their political reporting is accurate?

- New York Times
- Washington Post
- Wall Street Journal
- USA Today
- New York Post

1. Always
2. Most of the time
3. About half the time
4. Sometimes
5. Never
6. Don't Know

4.4.3 Block 3: Sociodemographics

This almost completes our survey, we only need some additional information about your background.

[age] What is your age?

- TEXTBOX

[gender] Do you consider yourself Male, Female, or other?

1. Male
2. Female
3. Other

[usborn] Were you born in the United States?

1. Yes
2. No

[usborn_year] (*only ask if [usborn]==0*) When did you first arrive to live in the US?

- TEXTBOX

[zip] What is your zip code?

- TEXTBOX (*response not required*)

[zip_time] (*only ask if zip code is entered*) And how long have you lived at your current zip code?

1. Less than a year
2. 1 to 3 years
3. 3 to 5 years
4. More than 5 years
5. Don't Know

[race] What racial or ethnic group best describes you?

1. Asian/Pacific Islanders
2. Black or African-American (non-Hispanic)
3. Caucasian/White (non-Hispanic)
4. Hispanic or Latino
5. Middle eastern
6. Native American or Aleut
7. Other

[educ] What is the highest level of education that you have completed?

1. Less than a high school diploma
2. Graduated high school or GED

3. Some college but no college degree
4. Graduated 2-year college
5. Graduated 4-year college
6. Completed post-graduate or professional school, with degree
7. Don't know

[income] Thinking back over the last year, what was your family's annual income?

1. Less than \$20,000
2. \$20,000 - \$39,999
3. \$40,000 - \$59,999
4. \$60,000 - \$79,999
5. \$80,000 - \$99,999
6. \$100,000 - \$119,999
7. \$120,000 or more
8. Prefer not to say

[marital] Which of the following best describes your marital status?

1. Single, never married
2. Married
3. Divorced
4. Separated
5. Widowed
6. Living with partner

[church] Not counting weddings and funerals, how often do you attend religious services?

1. Never
2. Less than once a year
3. Once a year
4. Several times a year
5. Once a month
6. Two to three times a month
7. Nearly every week
8. Every week
9. More than once per week

[comments] Thank you for answering our survey. Do you have any comments for us?

- *TEXTBOX*

[debriefing] (*do not show in control condition*) *Note:* The news article you read was written specifically for the purpose of this study. While the information provided in the article is accurate, it was not originally published in this format. If you have any questions or concerns, please contact the principal investigator Dr. Patrick Kraft (kraftp@uwm.edu).

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