Comparing belief in free will and job satisfaction in the US and Taiwan

Ismael Gharbi   Zackary Wais

February 12, 2024

Free will and job satisfaction are some terminologies that you do not hear often in the same sentence; however go hand in hand with one another. This paper replicates the data compiled from three studies, the first one being in regards to Taiwanese real estate agents, the second study being American online labor workers, and the third study looking into the subject of free will and job satisfaction on an international level. We will also be applying secondary research to aid our understanding of this topic, and how cultural norms affect the responses we receive. As this is an issue that every individual thinks about before entering an industry or accepting a job, we found it to be a topic to be extremely beneficial to us as we are ending our time in university.

Introduction

Free will is a topic that has different meanings depending on the city or country we are in. There are a variety of factors that shift the outcomes of free will, and in this paper, we wi

items short scale of Brayfield and Rothe (1951) constructed by Judge, Locke, Durham, and Kluger (1998). Those scales are shown here from 0 to 10 for the sake of simplicity.

This subject has different meanings in every country, when taking a look at countries outside

Data

2.1 Source

The paper we have used for replication is from the list of Gilad Feldman papers offered from The two claims we are focusing on are as follows: (1) Is there a positive or negative relatio

2.2 Methodology

This paper replicates the data that was originally studied for the (2018) paper Agency Belie

2.3 Features

The studies conducted each had their specific variables conducted. For the first study, the s

Results

Data from Study 1 were used to show the relative amount of belief in free will of the average Taiwanese real estate agents and how much are they satisfied with their job across two times within three months with the same sample. We extracted the responses from the survey and extracted the responses to the questions : "From the scale of 0 to 10, How much do you agree with this statement: I have free will"and "From the scale of 0 to 10, How much do you agree with this statement: I am satisfied with my job" at Time one and two. In Table 1, there are three values on a scale of 0 to 10 compared : (1) Job Satisfaction T1, (2) Job Satisfaction T2, and (3) Belief in Free Will. The rows would be the mean and standard deviation calculated using R. Looking at Table 1, we immediately notice that the mean score of Job satisfaction barely vary from the first and second time (5.64 and 5.74 respectively) and that the average level of belief of free will would be 3.99. In addition,the standard deviation of the three values seem reasonable. While analyzing Table 1, we can recognize that the slight increase in job satisfaction still largely within the standard deviation which confirms the accuracy of the measurement that barely varies over the time.

Table 1 : Mean and standard deviation of belief in free will and job satisfaction within the Taiwanese real estate agency.

```
Table_I <- data.frame(
  Job_satisfaction_T1 = c(5.64, 1.18),
  Job_satisfaction_T2 = c(5.74, 0.99),
  Belief_free_will = c(3.99, 0.49)
)

# Name the rows
rownames(Table_I) <- c("Mean", "Standard Deviation")

# Print the dataframe
print(Table_I)
```

```
              Job_satisfaction_T1 Job_satisfaction_T2 Belief_free_will
Mean                         5.64                 5.74             3.99
Standard Deviation           1.18                 0.99             0.49
```

Moving to the United States, Study 2 ,conducted in 2017, asked workers available on MTurk, a professional network spanning multiple professions the same questions as in Study 1 : "From the scale of 0 to 10, How much do you agree with this statement: I have free will"and "From the scale of 0 to 10, How much do you agree with this statement: I am satisfied with my job". The respondents' answers were extracted and had their average and standard deviation as given in Table 2. This table compares two values on a scale of 0 to 10 : (1) Job Satisfaction T1 (2) Belief in Free Will. The rows would be the mean and standard deviation calculated using R. Looking at Table 1, we see that the mean score of Job satisfaction is 5.29 and that the average level of belief of free will would be 5.28. The standard deviation of the three values seem reasonable.

Table 2 : Mean and standard deviation of belief in free will and job satisfaction within Amazon Mechanical Turk American Workers.

```r
Table_II <- data.frame(
  Job_satisfaction = c(5.29, 1.22),
  Belief_free_will = c(5.28, 0.84)
)


rownames(Table_II) <- c("Mean", "Standard Deviation")


print(Table_II)
```

```
                   Job_satisfaction Belief_free_will
Mean                           5.29             5.28
Standard Deviation             1.22             0.84
```

Graph 1 below with a y-axis depicting the US and Taiwan at Time 1 and 2 and a x-axis depicting a scale from 0 to 10. Both country has two bars measured on the scale depicting the belief in Free Will and the job satisfaction. We can observe that the average american worker has a higher belief in Free Will (5.28) compared to his Taiwanese counterpart (3.99) but a relatively smaller job satisfaction (5.64 and 5.74 compared to 5.29 in the US). This may suggest a low negative to no correlation between belief in Free Will and Job Satisfaction due to the different circumstances of the samples.

Graph 1 : Bar Chart comparing the average belief in free will and job satisfaction between MTurk American Workers and employees in Taiwan.

```r
library(ggplot2)
library(dplyr)

# Sample data
data <- data.frame(
  Country = rep(c("US", "Taiwan T1", "Taiwan T2"), each = 2),
  Value = c(5.28, 5.29, 3.99, 5.64, 3.99, 5.74), # Sample values ranging from 0 to 10
  Type = rep(c("Belief in Free Will", "Job Satisfaction"), 3)
)


# Plotting
ggplot(data, aes(x = Country, y = Value, fill = Type)) +
  geom_bar(stat = "identity", position = "dodge") +
  scale_y_continuous(limits = c(0, 10)) +
  labs(x = "Country", y = "Scale") +
  theme_minimal() +
  scale_fill_manual(values = c("Belief in Free Will" = "blue", "Job Satisfaction" = "red"))
```
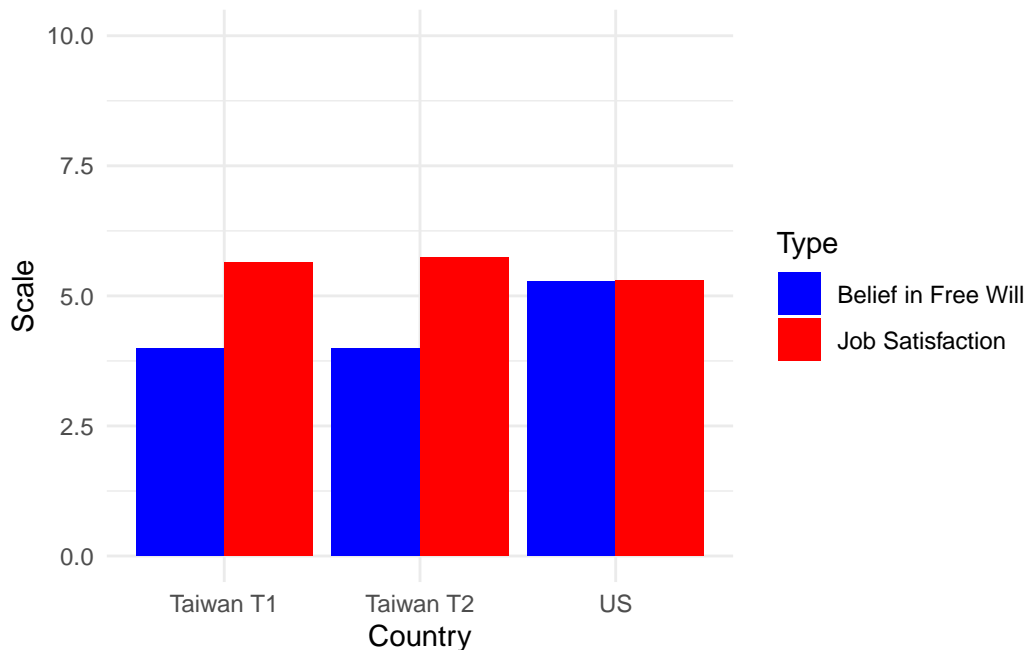
Replication:

Link of the reproduction of the paper on the social science reproduction platform
:https://doi.org/10.48152/ssrp-1yg9-0z41

Discussion

4.1 Findings

In this paper, we have replicated the studies and results found by Feldman, Farh, and Wong.
(1) Free will is fairly constant throughout the first study, and there is an increase in job
(2) Individuals with a stronger belief in free will, will also report a higher job satisfact:
(3) Depending on the region you are in, individuals will report different beliefs in free wil

4.2 Canada's belief in free will and job satisfaction

The Canadian population is currently at just over 38 million people and has increased by near
Concerning the original paper from Feldman, Farh, and Wong, it is important to note the inter

4.3 Practical Implications for Organizations

The research and work done by Feldman and his peers will allow companies and organizations we

4.4 Limitations

As the work we conducted was based on the reproduction from the work of Feldman, we were lim:
Additionally, there was the issue of the variety in occupations, where we would compare a whi
Finally, we found that the reproducible article focused on many positive outcomes of free wil

4.5 Future Research

In regards to future understandings of the topic of free will and job satisfaction, it would

First discussion point

If my paper were 10 pages, then should be be at least 2.5 pages. The discussion is a chance to
show off what you know and what you learnt from all this.

Second discussion point

Third discussion point

Weaknesses and next steps

References

"Site Survey Shows 60 Percent Think Free Will Exists; Read Why." *Scientific American Blog Network*, Scientific American, [February 12, 2024]. https://blogs.scientificamerican.com/talking-back/site-survey-shows-60-percent-think-free-will-exists-read-why/.

"Where Belief in Free Will Is Linked to Happiness." *Frontiers in News*, Frontiers, 24 January 2017, https://www.frontiersin.org/news/2017/01/24/where-belief-in-free-will-is-linked-to-happiness/.

"Table 1 Police-reported cybercrime, by type of violation, Canada, provinces and territories." *Statistics Canada*, Government of Canada, [Access Date], https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?p

"Annual Report to Parliament on Immigration 2023." *Immigration, Refugees and Citizenship Canada*, Government of Canada, 2023, https://www.canada.ca/en/immigration-refugees-citizenship/corporate/publications-manuals/annual-report-parliament-immigration-2023.html#.

Lavazza, Andrea, and Inglese, S. "Free Will and Neuroscience: From Explaining Freedom Away to New Ways of Operationalizing and Measuring It." Frontiers in Psychology, vol. 11, 2020, www.frontiersin.org/articles/10.3389/fpsyg.2020.00120/full. Accessed 14 Feb. 2024.

Wagner, H. "Why We Have Free Will." Scientific American, 6 Jan. 2016, www.scientificamerican.com/article/why-we-have-free-will/. Accessed 14 Feb. 2024.

Ghose, Tia. "Is Free Will an Illusion? Scientists, Philosophers Forced to Differ." Live Science, 3 May 2013, www.livescience.com/29100-illusion-of-free-will.html. Accessed 14 Feb. 2024.