The International Journal of Indian Psychology
ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print)
Volume 12, Issue 2, April- June, 2024
DIP: 18.01.136.20241202, DOI: 10.25215/1202.136
https://www.ijip.in

Research Paper

Is there a Correlation between the Degree of Superstitious Beliefs and the Sense of Personal Free will in Individuals

Prisha Kapoor[1]*, Diya Garg[2], Nehal Gupta[3], Amrutha Vardhan[4], Deeksha Solapurkar[5], Bharvi Tushar[6]

ABSTRACT

This study delves into the intricate relationship between superstitious beliefs and an individual's sense of personal free will. Drawing upon a diverse sample of 289 participants aged 18-30, we aim to unravel the nuanced connections between these seemingly disparate psychological constructs. Our methodology involves employing well-established measurement tools and surveys to assess the degree of superstitious belief, specifically using the Revised Paranormal Belief Scale (Tobacyk, 2004), and the perception of personal free will, measured with the FAD-Plus scale (Paulhus & Carey, 2010). The Spearman's rank-order correlation analysis indicates a negligible negative relationship between superstitious beliefs and personal free will (correlation coefficient -0.046, $p = 0.437$). While this result did not reach the conventional threshold for statistical significance ($p < 0.05$), it provides insights into the complex interplay between cognitive processes and supernatural convictions. These findings contribute to a more holistic understanding of human psychology, shedding light on the delicate balance between rationality and irrationality in human cognition.

Keywords: *Superstitions, Free Will, Personal Sense, Beliefs*

Have you ever thought about how our belief in omens, lucky charms, symbols or rituals impact how we feel about our ability to control our lives? Can we strongly believe in our own decisions and at the same time rely on irrational practices? In a world where logic and irrationality often coexist, this is an exploration into the intricate relationship between two fundamental aspects of human experience, superstitious beliefs and sense of personal free will in individual, Superstitious beliefs are often based on irrational or unverified notions, relying on rituals, objects, or actions that individuals believe have the power to influence events or outcomes. These beliefs may imply a lack of

[1]Student
[2]Student
[3]Student
[4]Student
[5]Student
[6]Student
*Corresponding Author

Received: April 12, 2024; Revision Received: May 12, 2024; Accepted: May 15, 2024

rationality or control over events too, whereas a sense of personal free will implies the belief that individuals have the ability to make independent choices and decisions.

While these concepts might appear contradictory, they frequently coexist in the minds of individuals. This dichotomy poses a compelling opportunity to go deeper into the aspects of human cognition, the balance between rationality and irrationality, and the underlying cognitive processes that shape our beliefs and actions systems.

Research Question

Is there a correlation between an individual's degree of Superstitious Beliefs and their Individual sense of Free will.

Rationale

In this study, we explore the correlation between an individual's level of superstitious belief and their perceived sense of personal free will in individuals with the focus on young adults from age group 18 to 30 years, as superstitious beliefs and a sense of personal free will are related in the sense that they both deal with individual beliefs and perceptions of humans. As we know superstitious beliefs may sometimes contradict the idea of personal free will by suggesting that external factors, like superstitions, hold the power to influence outcomes instead of individual choices. However, individuals may simultaneously hold superstitious beliefs and a sense of personal free will, even if this combination appears paradoxical. The purpose of this study is to understand this complex interplay between belief systems that is superstitious belief and personal free will.

Significance

By exploring the potential connection between superstitious beliefs and personal free will perception, we can extend our understanding beyond individual psychology to consider cultural, social, and cognitive influences. This endeavor has the potential to enrich our comprehension of human behavior, choice, and the intricate nature of belief systems in our ever-evolving world. If individuals with stronger superstitious beliefs report a heightened sense of personal free will, it could imply that superstitions offer a means for some to feel more in control of their lives. Conversely, if those with strong superstitious beliefs perceive a weaker sense of personal free will, it may suggest that heavy reliance on superstitions can diminish their sense of personal agency.

THEORETICAL FRAMEWORK

Superstitious beliefs have a complex relationship with the concept of free will. Several psychological theories provide a theoretical framework for understanding how they may be linked leading to a diminished sense of personal agency.

Attribution Theory (Heider, 1958) posits that individuals tend to attribute the causes of events to either internal or external factors. Those with strong superstitious beliefs often attribute outcomes to external forces like luck rather than their own volition. This external attribution may contribute to a perception that their actions have less influence on outcomes, thereby diminishing their sense of personal free will.

Confirmation Bias, (Nickerson,1998) a cognitive phenomenon, plays a pivotal role in reinforcing superstitious beliefs. Individuals selectively interpret events, focusing on instances that seem to validate their superstitions and dismissing contradictory evidence.

This biased interpretation can distort their perception of free will, fostering the belief that their superstitious actions directly impact outcomes, despite lacking empirical support.

Terror Management Theory (Greenberg, Pyszczynski, & Solomon, 1986) suggests that superstitious beliefs offer a buffer against existential anxieties by providing a sense of control and security. In adopting these beliefs, individuals may downplay their personal free will in favor of adhering to superstitions as a coping mechanism for existential concerns.

Learned Helplessness Theory, (Seligman, 1975) proposed by Martin Seligman in 1975, suggests that superstitious beliefs can be seen as a form of learned helplessness. When individuals repeatedly encounter uncontrollable situations, they may come to believe that external forces play a more significant role than their own actions in determining outcomes. In the context of superstitions, this perception contributes to a sense of helplessness, and a lower sense of free will.

REVIEW OF LITERATURE

Superstition and perceived control

This study conducted by Griffiths et al. (Griffiths, Shehabi, Murphy, & Le Pelley, 2018) explored why people believe in superstitions without logical reasons. In an experiment, participants pressed a button to see if a light turned on, but the two were not connected. Still, many thought their action caused the outcome, a phenomenon known as "illusion of causality." Those more superstitious saw this false link more. Superstitions seem to offer a sense of control in uncertainty and don't necessarily conflict with believing in free will. People can be superstitious yet still feel they make their own choices. So, it is not very clear as to how superstitions influence a person’s sense of free will or whether they even have a correlation.

Superstitious belief and the associative mind

This study (Daprati et al., 2019) explains that superstitions are often linked to our ability to notice patterns in random events. Our brains are good at finding connections, even when they don't exist. This skill helped our ancestors predict dangers and opportunities in their environment. Superstitions develop when we make a wrong connection between an action and an outcome. This research suggested that people who are better at this kind of pattern recognition may be more prone to superstitions. Others might be tied to the idea that unrelated events are connected, especially when this belief is not very costly but can lead to big benefits. This research concluded that some people are better at noticing connections in unrelated events, and these people are more likely to develop superstitious beliefs.

A study on Superstition as an inevitable byproduct of adaptive learning

Beck and Forstmeier conducted a fascinating study on the origins of human superstitions, suggesting that they may be an inevitable consequence of our adaptive learning processes. (Beck & Forstmeier, 2007) The researchers posited that the human propensity for superstition stems from our inclination to identify patterns and extract meaning from them. As humans have evolved, we've cultivated a distinctive cognitive approach that not only discerns these patterns but delves deep to understand their root causes. The challenge lies in distinguishing genuine patterns from mere coincidences. Sometimes, to avoid overlooking real connections, our brains might lean towards caution, prompting us to believe in uncorroborated associations. Beck and Forstmeier’s findings highlight that this cognitive

balancing act, fueled by the apprehension of overlooking genuine patterns, positions superstitions as an unintended outcome of our evolved learning.

Superstition and Decision making

Eric W. K. Tsang's research article delves into the intricate relationship between superstition and business decision-making within Chinese business communities (Tsang, 2004). It explores how superstition operates on both complementary and contradictory levels, serving as a means to alleviate uncertainty-induced anxiety while also posing the risk of illogical decision-making and cognitive dissonance, especially in a world where rationality is highly prized. This work sheds light on the possible dual nature of superstition's impact on decision-making by explaining how superstitions may influence decision making in a way that reduces a person's free will but also show how it's ultimately their choice whether or not to engage in an activity, thereby showing a sense of free will.

Superstitions & sense of personal control

The literature under review (Kumar & Uttekar, n.d) introduces superstition as a misguided sense of causation. This article suggested that superstitions are self-oriented and often have roots in religion and mythology. They often serve as a mechanism for coping with uncertainty and heightening one's sense of personal control. This suggests that there could be a link between the degree of superstitious belief and an individual's perception of their personal agency. Superstitions are a way for individuals to assert some control or predictability in a seemingly chaotic world. Furthermore, certain superstitions can bolster confidence, foster optimism, and enhance resilience. In contrast, others may induce feelings of anxiety, guilt, and irrational behavior.

METHODS

Aim

To determine the existence of the correlation between an individual's level of superstitious belief and their perceived sense of personal free will within the age group 18- 30 years.

Objectives

- To assess and quantify the degree of superstitious belief in individuals using standardized measurement tools or surveys to establish a baseline for superstitious belief in the study sample.
- To evaluate and quantify the perception of personal free will in the same individuals using standardized assessments or questionnaires to establish a baseline for the sense of personal free will.
- To employ statistical analysis, such as Pearson's correlation coefficient (r), to determine if there is a correlation between superstitious belief and the sense of personal free will.

Hypothesis

There is no significant correlation between the degree of superstitious belief and the sense of personal free will in individuals.

Operational Definition

- **Free will:** Free will is the ability of an individual to make choices independent of external factors. It is the score in Free Will and Determinism Plus Scale (FAD-Plus)

which measures free will, determinism, and the unpredictability of events. (Paulhus & Carey, 2010)

- **Superstitious beliefs:** Superstitions refer to the conviction in the existence of a cause-and-effect relationship between specific actions, objects, or rituals and desired outcomes, even in the absence of empirical evidence or logical reasoning, it is the score on the Revised Paranormal belief scale, (Tobacyk, 2004) which measures seven dimensions: Traditional Religious Belief, Psi, Witchcraft, Superstition, Spiritualism, Extraordinary Life Forms, and Precognition.

Research Design

The study will be quantitative research. Data will be collected through questionnaires and the correlation between degree of superstitious beliefs and sense of personal free will will be analyzed using Karl Pearson's Correlation Method.

Variables

Independent variable

The independent variable for this study is the degree of superstitious belief in individuals.

Dependent Variable

The dependent variable for this study is the sense of personal free will in individuals.

Population

Universal population

Young adults from around the world would comprise the universal sample

Target population

Young adults in India between the ages of 18 and 30.

Sample size

The study would be conducted on a sample of size 280- 300.

Sampling method

The sampling method would be convenience sampling where the units that are the most accessible to the researcher are chosen for inclusion in the sample.

Inclusion Criteria

The selection of samples would be based on the fulfillment of the following criteria:

1. Age between 18-30 years
2. Access to internet
3. Ability to read and understand English
4. Knowledge on how to fill google forms

Exclusion Criteria

The sample population would not include those who match these criteria:

1. Age below 18 or above 30 years
2. Individuals who do not have access to the internet.
3. Individuals who do not know the English language.
4. Individuals who not know to fill a google form

Tools

The research would be using the following tools,

- **Revised Paranormal Belief Scale**: A 26-item Revised Paranormal Belief Scale (Tobacyk, 2004) is introduced which provides a measure of degree of belief in each of seven dimensions: Traditional Religious Belief, Psi, Witchcraft, Superstition, Spiritualism, Extraordinary Life Forms, and Precognition. Improvements from the original 25- item Paranormal Belief Scale (Tobacyk & Milford, 1983) include adoption of a seven-point rating scale as well as item changes for three subscales: Precognition, Witchcraft, and Extraordinary Life Forms.
- **The Free Will and Determinism Plus Scale**: The FAD-Plus scale by D. L. Paulhus and J. M. Carey is used to measure beliefs in free will, determinism, and the unpredictability of events. (Paulhus & Carey, 2010)

Procedure

Participants will be selected according to the inclusion and exclusion criteria. Google forms will be sent out containing the 2 questionnaires ie., Revised Paranormal Belief scale & Free Will and Determinism Plus Scale, Scoring for both the scales will be done using SPSS, on the basis of which data will be analyzed to establish a relationship between the variables.

Statistical Analysis

The data for the study will be analyzed using the software Jamovi using Spearman Correlation Analysis. The results of both the questionnaires will be analyzed separately and later correlated to find out the strength between both the variables.

Ethical Considerations

During the research process, the researcher will adhere strictly to the following ethical principles:

- The information of every participant will be kept confidential and used strictly for the purpose of research.
- Participants consent will be taken to be a part of the study.
- The participants will have the choice to withdraw themselves from the research or refuse to be a part of it at any point in time.

Limitations of the study

- Lack of enough participants due to time constraints.
- Since the study was done using an online survey, it is impossible to confirm how seriously individuals answered the questions.
- Extraneous variables such as the upbringing and cultural factors can impact how an individual perceives the environment.
- The study is not very generalizable as there are not many participants representing different demographics.

Timeline

The following is the timeline for the whole procedure-

- October Week 2: Collecting information on variables, Reviewing the literature, and forming a basic idea on methodology.
- October Week 3: Creating Questionnaires with google forms, collecting data, and analyzing the data.

RESULTS & ANALYSIS

The data was collected from 289 participants, using google forms. It was collected from the age group 18 - 30 years old individuals. The analysis was conducted using Jamovi (Version 2.4).

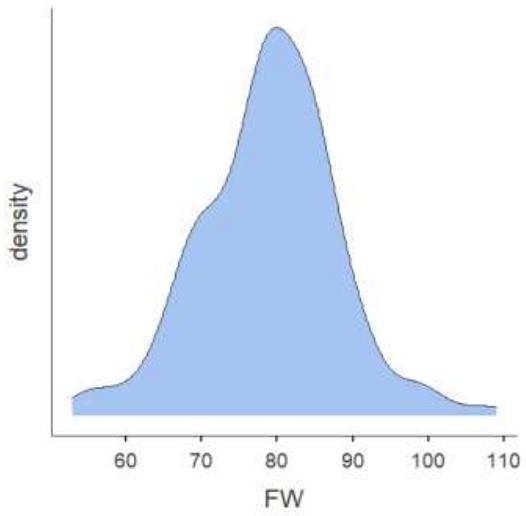
Descriptive statistics

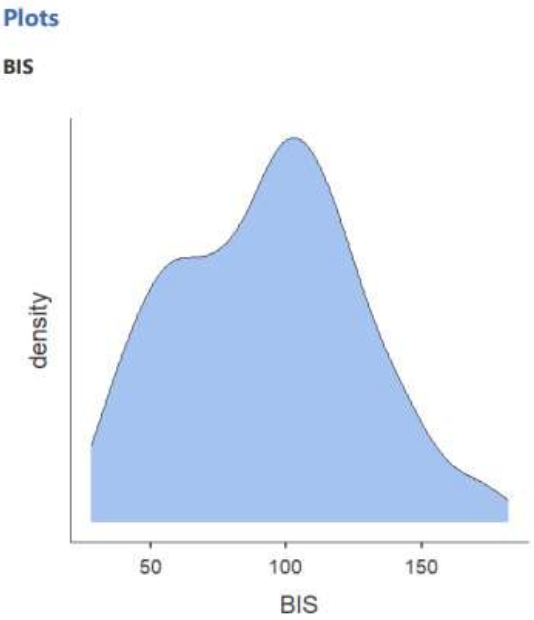
Table 1: Mean and standard deviation.

	Free Will	Belief in Superstitions
N	289	289
Missing	0	0
Mean	79.0	93.6
Median	80	96
Standard Deviation	9.10	33.6
Shapiro-Wilk W	0.987	0.985
Shapiro-Wilk p	0.009	0.004
Maximum	109	182
Minimum	53	28

Interpretation

- N: This represents the sample size. Both variables have 289 observations.
- Missing: For both variables, there are no missing values.
- Mean: The arithmetic average, For Free Will, the mean is 79.0, and for Belief In Superstitions, it is 93.6.
- Median: This is the middle value when all the observations are arranged in ascending order. For FW, the median is 80, and for BIS, it is 96.
- Standard deviation: This measures the amount of variation or dispersion from the mean. FW has a standard deviation of 9.10, while BIS has a more spread out set of values with a standard deviation of 33.6.
- Minimum & Maximum: These represent the smallest and largest values in the dataset, respectively. For FW, the values range from 53 to 109. For BIS, they range from 28 to 182.





Normality of the Distribution

The data was tested to find out if it was normally distributed, the test used was Shapiro Wilk test and the results are:

- Shapiro-Wilk W: This is a test statistic used to check if a variable's distribution is approximately normal. The closer the value is to 1, the more evidence there is for normality. For FW, the W value is 0.987, suggesting it's close to a normal distribution. For BIS, the value is 0.985.
- Shapiro-Wilk p: This is the p-value associated with the Shapiro-Wilk test. A p-value less than a typical significance level (e.g., 0.05) suggests the data is not normally distributed. For FW, the p-value is 0.009, For BIS, the p-value is 0.004, suggesting the distribution is not normal.

Correlation

Table 2: **Correlation matrix.**

		Belief in superstition	**Free Will**
Belief In Superstition	Spearman's rho	—	
	df	—	
	P-value	—	
	N	—	
Free Will	Spearman's rho	-0.046	—
	df	287	—
	P-value	0.437	—

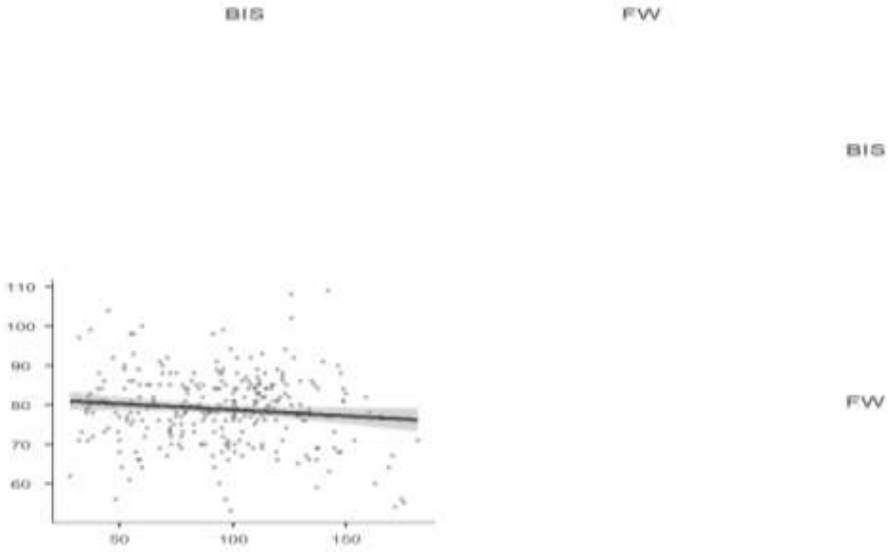
Spearman's rho (ρ): This is a non-parametric measure of rank correlation, which assesses how well the relationship between two variables can be described. It can take values from -1 to 1. A value of 1 indicates a perfect positive relationship, -1 indicates a perfect negative relationship, and 0 indicates no relationship.

For BIS vs. FW, the Spearman's rho is -0.046. This value is very close to 0, which suggests a very weak or negligible negative relationship between BIS and FW.

df (degrees of freedom): This refers to the number of values in the final calculation of a statistic that are free to vary. For correlation, the degrees of freedom is typically N - 2, The df for BIS and FW is 287, which indicates there were 289 paired data points (since 289−2 = 287)

p-value: This provides a test of the hypothesis that the correlation is different from 0 (i.e., that there is a relationship). Typically, a p-value less than 0.05 is considered evidence that the correlation is statistically significant, although this threshold can vary based on context or field.

The p-value for BIS vs. FW is 0.437, which is much greater than 0.05. This suggests that the observed correlation (-0.046) is not statistically significant, and we don't have evidence to reject the hypothesis that there's no correlation between BIS and FW.



Interpretation

The Spearman's rank-order correlation between BIS and FW is -0.046, which is very close to zero. This indicates a negligible negative relationship between the two variables. Furthermore, this correlation is not statistically significant (p = 0.437), so we cannot confidently say that any relationship exists between BIS and FW based on this data.

Hence, we Fail to reject the Null Hypothesis. In simpler terms, based on the data provided, BIS and FW do not appear to be correlated.

DISCUSSION

Upon the collection of the data received, the first step taken was to find out if the data- set was normally distributed or not and to examine that we employed the assessment of normality. The test applied here was the Shapiro- Wilk test. Because the significance value for FW is 0.009 and for BIS, the p-value is 0.004, suggesting that the data collected is not normally distributed. The questionnaire was administered on 289 subjects belonging to the age group of 18-30 years. Firstly, research must try to inculcate a larger sample size that encompasses people from all walks of life and not just restricting it to adults belonging to the age group of 18- 30 years. Since the questionnaires were distributed via social media platforms, cross checking with the doubts emanating from the respondent's end could not be catered to. Hence there would have been biases or dishonest opinions while answering the

questions. There were survey fatigue or delays in reversion of responses because of which the study was detained from conducting further analysis of the data. The sentiment of the respondent's answers are prone to be misinterpreted because of the close ended questions.

The lack of a substantial association illustrates the diversity of individuals' belief systems. People can believe in superstitions while preserving a strong sense of human agency and free will. Human intellect is intricate and complex. The lack of a clear association shows that the factors impacting superstitious beliefs and the sense of free will may function independently or in complex ways. Individuals who preserve a sense of personal free will despite holding superstitious beliefs can display psychological resilience. Cognitive flexibility and the ability to negotiate competing belief systems could be linked to this resilience. Interventions aiming at reducing superstitious beliefs may need to explore how these beliefs interact with a strong sense of personal free will. Strategies could promote critical thinking without necessarily interfering with an individual's autonomy. The findings could spark philosophical debates on the nature of belief, free will, and autonomy. Philosophers may investigate how people reconcile seemingly opposing views within their cognitive frameworks. The lack of a meaningful association offers up possibilities for further research into the subtle interplay between belief systems and personal agency. Researchers may look into other factors that could influence this link.

CONCLUSION

The study's primary objective was to look into possible correlations between belief in superstitions and an individual's sense of personal free will in a cohort of young adults aged 18 to 30 years. According to findings statistically, belief in superstition is not directly associated with personal free will. However, there are numerous potential underlying factors that may or may not contribute to this correlation. Much more research, including studies of an experimental design, is needed to investigate this relationship further.

Summary

The current study aimed to investigate the existence of a correlation between belief in superstitions and an individual's sense of personal free will in a cohort of young adults aged 18 to 30 years. A google form survey was distributed and it included two questionnaires, the Revised Paranormal Belief Scale and the Free Will and Determinism Plus Scale. The data were collected from 289 participants and analysis was conducted using the statistical software Jamovi. The results revealed that there was no statistically significant correlation between the variables, suggesting that belief in superstitions does not have a substantial impact on the perception of personal free will in this demographic.

REFERENCES

Ackerman, C. E., MA. (2023). Learned Helplessness: Seligman's Theory of Depression. *PositivePsychology.com*.https://positivepsychology.com/learned-helplessness-seligman-theory-depression-cure/

Beck, J., & Forstmeier, W. (2007). Superstition and belief as inevitable by-products of an adaptive learning strategy. *Human Nature, 18*, 35-46. https://doi.org/10.1007/s12110-007-9003-x

Daprati, E., Sirigu, A., Desmurget, M., & Nico, D. (2019). Superstitious beliefs and the associative mind. Consciousness and cognition; *Elsevier BV*. https://doi.org/10.1016/j.concog.2019.102822

Griffiths, O., Shehabi, N., Murphy, R. A., & Le Pelley, M. E. (2018). Superstition predicts perception of illusory control. *British Journal of Psychology*, *109*(4), 614-627. https://doi.org/10.1111/bjop.12344

Kumar, K., Uttekar, P. S. (2021). What Is Superstition in Psychology? Effects on Mental Health. *MedicineNet.* https://www.medicinenet.com/what_is_superstition_in_psychology/article.htm

Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology, 2*(2), 175–220. https://psycnet.apa.org/record/2018-70006-003

Paulhus, D., & Carey, J. (2011). The FAD-Plus: Measuring Lay Beliefs Regarding Free Will and Related Constructs. *Journal of Personality Assessment, 93*(1), 96-104. https://doi.org/10.1080/00223891.2010.528483

R Core Team (2022). R: A Language and environment for statistical computing. (Version 4.1) [Computer software]. Retrieved from https://cran.r-project.org. (R packages retrieved from CRAN snapshot 2023-04-07).

Sengupta, S. (2020). Heider's Attribution Theory. *Management Weekly*.https://managementweekly.org/heiders-attribution-theory/#:~:text=Heider's%20attribution%20theory%20is%20one,or%20situational%20(external)%20causes.

Terror Management Theory – *Ernest Becker Foundation*. (n.d.). https://ernestbecker.org/resources/terror-management-theory/

The jamovi project (2023). jamovi. (Version 2.4) [Computer Software]. Retrieved from https://www.jamovi.org.

Tobacyk, J., & Shrader, D. (1991). Superstition and self-efficacy. *Psychological Reports*, *68*, 1387-1388.

Tobacyk, J. J. (2004). Tobacyk, J. J. (2004). A revised paranormal belief scale. *International Journal of Transpersonal Studies, 23*(1), 94–98. http://dx.doi.org/10.24972/ijts.2004.23.1.94

Tsang, Eric W. K. (2004). Superstition and decision-making: Contradiction or complement?. *Academy of Management Executive, 18*(4), 92–104. doi:10.5465/AME.2004.15268696

Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Kapoor, P., Garg, D., Gupta, N., Vardhan, A., Solapurkar, D. & Tushar, B. (2024). Is there a Correlation between the Degree of Superstitious Beliefs and the Sense of Personal Free will in Individuals. *International Journal of Indian Psychology*, *12*(2), 1574-1584. DIP:18.01.136.20241202, DOI:10.25215/1202.136