

**How the Presence of an Authority Figure Influences  
Individual Choices and Stress Levels: a One-Time Experimental Study**

### Abstract

This study investigated how the presence of an authority figure influences individual choices. Specifically, it aimed to determine whether or not the presence of an authority figure increases the probability of following instructions to violate rules and how it impacts their stress levels when asked to go against their moral values. Using a between-subject design, participants ( $n = 40$ ) were randomly assigned to either the group with an authority figure present and a group without an authority figure. An independent sample t-test showed the significant difference between the two groups in terms of obedience, showing the group with an authority figure having higher obedience to authority ( $M = 3.6$ ,  $SD = 1.47$ ) than the group without an authority figure ( $M = 2.0$ ,  $SD = 1.08$ ). There was a noticeable difference  $t(38) = 3.94$ ,  $p < .001$ , with a large effect size ( $d = 1.24$ ). Nevertheless, no significant difference was found in terms of stress levels in both groups ( $U = 186$ ,  $p > 0.005$ ,  $r = -0.07$ ). Participants in a group with an authority figure reported stress levels ( $M = 2.70$ ,  $SD = 1.49$ ) comparable to the group without an authority figure ( $M = 3.05$ ,  $SD = 2.72$ ). These findings were supported by other existing studies indicating that willingness of an individual to follow unethical instructions was influenced by an authority figure but did not increase their level of stress due to the enjoyable nature of the task. This investigation is a modern take on the social psychology experiments, Milgram and Asch experiments, presenting the importance of authority figures in rule-breaking behavior while pointing out stress as not correlated with obedience.

*Keywords: authority figure, obedience to authority, stress level*

## Introduction

The subtle influence of authority often turns a simple “no” to a hesitant “yes”. In human interactions, authority figures have the tendency to influence the choices of an individual even if such actions go against their principles morally (Götz et al., 2023). Building on the ground-breaking work of Stanley Milgram which is the Milgram experiment on 1961 and the work of Solomon Asch known as Asch experiment on 1951, this study draws inspiration from the two social psychology investigations to examine how the presence of an authority figure encouraging rule violations influences the obedience and stress level of an individual. In this study, obedience is defined as a decision of an individual to follow the instructions from an authority figure (Gibson, 2018 as cited by Götz et al., 2023). Another factor examined in this study is the level of stress an individual experiences during an activity, especially when an authority figure intentionally urges the person to act contrary to the rules and standards. Stress, in the presence of an authority figure, is often linked to heightened psychological pressure, driven by the expectations to obey, even when it conflicts with personal and moral belief (Cherry, 2024).

A global investigation on the test of obedience has been explored from numerous viewpoints including the study that underlines different conditions revolving around the impact of task difficulty and obedience to authority. This study provides valuable data highlighting the difficulty in task obedience in modern settings (Machen, 2019). Building upon the findings of the study of Machen (2019), this study aims to understand the way individuals respond to authority figures and their willingness to obey rule-breaking instructions. An additional study also determined the impact of authority figures on obedience by investigating using blind obedience in an inspiration of a Milgram experiment. It delves into how individuals believe they behave more ethically and rejects the commands of an authority figure with greater effect than other individuals (Bègue & Vezirian, 2023). This existing literature supports our study by determining the impact of urging a rule-breaking behavior as well as examining the response of individuals in terms of challenging circumstances. Additional study which was conducted by Gotz et al. (2023) indicated that when an authority figure is present, the sense of responsibility of an individual for their actions decreases.

Another existing research study with the title *The Concept of Utang na Loob in the Philippines*, conducted by Manguit (2022), examined authority dynamics and cultural value of Filipinos of utang na loob (debt of gratitude). In this study, the deeply rooted utang na loob influences obedience and decision-making in social and hierarchical settings was examined. This results shows how the utang na loob value encourages compliance and obedience to authority. That being said, utang na loob is not just a moral value for Filipinos but it also means a way of establishing socially harmonized and authority-based relationships in the Philippines.

While existing literatures have investigated the obedience under different conditions (Machen, 2019; Bègue & Vezirian, 2023) and the ascendancy of culture on authority, known as utang na loob in Philippines (Manguit, 2022), there is still a scarcity in evidence in the matter of the effects of rule-breaking behaviour encouraged by the authority figure. However, no study has specifically explored a less harmful form of influence that could still affect the individual's obedience and

stress levels. A recent study by Acoba (2024) shows the role of stress, particularly how it can impact an individual's psychological results in challenging situations. This highlights a research gap with regards to how authority figures can influence stress due to the encouragement to break the rules which can be explored in this study.

The famous Milgram experiment, which accentuates the psychological mechanisms pushing individuals to follow authority figures even when their directives are in conflict with their moral and personal values, have been extensively studied across different cultures (Blass, 2012 as cited by Tong et al. 2020). These related literatures persistently show that the rate of obedience varies depending upon the societal shape and cultural norms, as well as views on authority. In the Philippines, where respect for authority and interconnection in hierarchy are deeply rooted (Manguit, 2022), investigating the obedience in this perspective can give insights and understanding into how culture shapes behavior. In this study, the obedience of participants will be measured by counting the number of violations they commit under the influence of an authority figure. In this way, a measurable process evaluating obedience will be done while grounding the findings in the context of Filipino culture.

The purpose of this investigation is aimed at finding out how the willingness of the participants to follow instructions that break the rules and how their stress levels are affected when an authority figure encouraging rule-breaking actions is present. Specifically, it intends to find answers to the following research questions:

1. Does the presence of an authority figure increase the chance for participants to go against the rules compared to a situation with no authority figure?
2. Is there a significant difference in obedience between participants who are exposed to an authority figure and those with an absence of such?
3. Is there a significant difference in stress levels between participants in the presence of an authority figure to when no authority figure is present?

The modern replication of Milgram and Asch experiment brings insights about obedience and stress caused by the authority figure. The findings of this exploration can be applied in real-world situations specifically in the field of mental health. Training programs that focus on stress is essential as it emphasizes the building of a support system in peers (Carleton et al., 2019). This is in line with the significance of our study, which addresses how stress influenced by an authority figure through training programs can help individuals in an environment with high-pressure such as schools or even workplaces. Apart from that is the ethics training which is requisite in minimizing unethical behaviours by promoting a decision-making that is morally and ethically right (Benlahcene et al., 2022). This leadership intervention is closely related to the effects of the influence of authority figures in encouraging individuals to violate rules and helps in alleviating the detrimental impacts of that action.

## Methods

### Participants

The participants of this study were 40 undergraduate students (mixed genders) aged 18-25 years old and were selected based on specific inclusion and exclusion criteria. Inclusion criteria included students who were willing and available to participate in a 1-hour activity, ensuring they had the necessary time and capacity to complete the task. Participants were excluded if they had prior experience with social psychology experiments, as their previous exposure could influence their responses, and if they reported feeling unwell on the day of the experiment, which could impact their performance and the accuracy of the result.

### Procedure and Design

The study was officially conducted after the researchers submitted a consent for the approval of the school's dean to ensure ethical approval. Convenience sampling was used in recruiting the participants based on their willingness to participate and their availability. Experimenters obtained informed consent explaining that the experiment will be focusing on teamwork and collaboration, using deception for the experimental group to avoid any bias. By that, the true purpose of the study was kept from the participants to ensure the validity of the experiment.

At the time of recruitment, toss coin was used by the experimenters in randomly assigning the participants to either the experimental or control group to avoid any bias. For each participant, the experimenter used a standard coin to determine their group allocation, tossing the coin once to decide their assignment, with heads indicating placement in the experimental group and tails assigning them to the control group. The outcome of each coin toss was immediately recorded alongside the participants name to maintain accurate records of the allocation process. After completing the assignment procedure for all participants, the distribution of individuals across the two groups was reviewed to confirm that randomization had been achieved successfully, resulting in a total number of 20 participants in the experimental group and 20 in the control group. Each group was also scheduled to participate in the study on different days to avert any influence between them. Both rooms were set up identically with the materials needed for the activity such as cups, straws, and blindfolds. Participants in both groups were divided into smaller groups and the experimenters explained the focus of the activity including the rules and mechanics. In the experimental group, participants were told that a leader, acting as the authority figure and covertly a confederate in the experiment, would be chosen randomly. However, in reality, only the name of the confederate was included in the draw.

In the activity proper, all participants were blindfolded and were tasked to work together in filling the cup with straws without crossing the lines. Throughout the whole task, the confederate leader followed a scripted role, suggesting and encouraging the rule-breaking behavior. In the end, experimenters recorded the number of violations committed by each group. Also, to determine their experience,

participants were asked to answer the single-item scale measuring their stress levels during the activity.

In this study, a true experimental design with a between-subject approach was utilized, randomly assigning participants to one of the two treatment conditions. A between-subject is an experimental design in which different groups of participants are exposed to different conditions or treatments. This design allows researchers to compare the effects of various treatments by examining differences between the groups. The experimental group was exposed to deception, with a confederate leader encouraging rule-breaking behavior during the activity. In contrast, the control group was not exposed to the same deceptive treatment or the influence of a confederate leader, serving as a baseline for comparison. When random assignment is employed, the study qualifies as a true experimental research design. This is because random assignment ensures that every participant has an equal chance of being placed in any group, thereby minimizing the potential influence of confounding variables.

## **Instrument**

For stress management, we utilized the question “How stressed were you?” to evaluate the stress level of participants during the game, using the scale from 1 - 10, 1 represents the extremely low stress meaning participants felt relaxed and calm while the 10 being extremely high stress meaning participants felt overwhelmed or close to breaking point. This straightforward approach ensures clarity and relevance to the short duration of the task. For obedience, we recorded the number of rule violations participants committed during the activity. These violations are counted systematically to evaluate the extent to which participants complied with instructions.

For data analysis, obedience will be measured and compared between the experimental and control groups using an independent sample t-test, as this statistical method is suitable for analyzing the differences in the rate of breaking the rules between the two groups. Similarly, perceived stress levels will be measured and compared using an independent sample t-test to determine whether the presence of peer pressure guided by an authority figure results in noticeably greater amounts of stress levels in the experimental group compared to the control group.

The study examined the role of independent t-test statistics and their importance in educational research. This statistical tool is fundamental in the field, offering a systematic and precise approach to evaluating the impact of interventions, teaching methods, and educational policies. By providing empirical evidence, the t-test supports researchers and educators in making informed, evidence-based decisions within the dynamic landscape of education. It facilitates a deeper understanding of the effectiveness of various educational strategies by comparing mean scores across different groups. (Akpan et al., 2023).

## **Ethical Consideration**

Participants were given informed consent prior to the study, with the experimenters explaining the whole focus of the experiment including specific details to maintain the integrity of the experiment. Since deception was utilized in this study,

including the misleading of participants about the random selection of the leader, a thorough debriefing was conducted at the end of the activity in which they were informed with the true purpose of the study and the role of a confederate. Since the experiment was designed to ensure the safety of the participants, they were also informed of their autonomy to withdraw at any time without any penalty. Moreover, the data gained from the experiment remains confidential and was used for research purposes only. In the study design, including the use of the scripted role of the confederate, this was carefully reviewed to ensure that harm will be minimized and the benefits of this study will surpass the potential drawbacks.

## Results

**Table 1.** Normality Test for Obedience to Authority

	W	p
<b>Number of violations</b>	0.971	0.389

In table 1, the assumption of normality was assessed using the Shapiro-Wilk test. Results indicated no significant violation of normality ( $W = 0.971$ ,  $p = 0.389$ ). As the p-value exceeds the conventional threshold of 0.05, the null hypothesis of normality cannot be rejected. Thus, the data are approximately normally distributed.

**Table 2.** Descriptive Statistics

	Group	N	Mean	Median	SD	SE
<b>Number of violations</b>	<b>Authority Figure Present</b>	20	3.60	4.00	1.47	0.328
	<b>No Authority Figure Present</b>	20	2.00	2.00	1.08	0.241

The Table 2 shows the descriptive statistics for obedience which also revealed that the mean of a condition with an authority figure was  $M = 3.6$  ( $SD = 1.47$ ,  $SE = 0.32$ ), while the other group without the presence of an authority figure was  $M = 2.0$  ( $SD = 1.08$ ,  $SE = 0.241$ ). It also suggests that participants are more likely to break the rules when an authority figure is around. The higher mean and standard deviation in the group with an authority figure present indicates both a high rule-breaking behavior and a more variation in responses. In contrast, the group with no authority figure present shows a lower standard deviation suggesting they acted more consistently. This implies that the presence of an authority has a significant impact on how individuals make choices.

**Table 3.** Independent Sample T-Test

		<b>Statistic</b>	<b>df</b>	<b>p</b>		<b>Effect Size</b>
<b>Number of violations</b>	<b>Student's t</b>	3.94	38.0	<.001	Cohen's d	1.24
	<b>Welch's t</b>	3.94	34.9	<.001	Cohen's d	1.24

*Null Hypothesis: There is no significant difference between participants who were exposed to an authority figure who encourages them to violate the rules and those who are not exposed to one.*

Table 3 shows the results of an independent sample t-test conducted to compare the number of violations under two conditions: the presence of an authority figure that encourages the participants to violate the rules and those who are not exposed. Both Student's t-test and Welch's test yielded significant results (*Student's t* = 3.94, *df* = 38, *p* < 0.001; *Welch's t* = 3.94, *df* = 34.9, *p* = < 0.001), indicating a significant difference in the number of violations between the two conditions. These results demonstrate that the number of rule violations increased substantially whenever an authority figure was present, with a small p-value implying that this difference is improbable to be an outcome of a chance. The effect size measured by Cohen's d, was 1.24, suggesting a large effect size, also indicating that the behavior of the participants was significantly influenced by the presence of an authoritative person.

These results support the alternative hypothesis that the mean number of violations differs significantly depending on whether an authority figure is present or absent.

**Table 4.** Normality Test for Stress Level

	<b>W</b>	<b>p</b>
<b>Stress Level</b>	0.827	<. 001

Table 4 reveals the results of the Shapiro-Wilk test to determine the normality of the data for stress level. Based on the result, assumption of normality was violated (*W* = 0.827, *p* < 0.001) which means the data is not normally distributed. Moreover, Mann-Whitney U Test, a non-parametric test was used to analyze the differences between the stress levels of participants with an authority figure and without an authority figure.



**Table 5.** Descriptive Statistics

	Group	N	Mean	Median	SD	SE
<b>Stress Level</b>	<b>Authority Figure Present</b>	20	2.70	2.50	1.49	0.333
	<b>No Authority Figure Present</b>	20	3.05	2.00	2.72	0.609

Table 5 shows the descriptive statistics for stress which revealed that the mean of a condition was slightly lower in the group with an authority figure ( $M = 2.70$ ,  $SD = 1.49$ ,  $SE = 0.333$ ) compared to the other group without the presence of an authority figure ( $M = 3.05$ ,  $SD = 2.73$ ,  $SE = 0.609$ ). Overall, the data shows that the stress levels of the participants may have slightly decreased with the presence of an authority figure. The small difference between the two groups, however, suggests that while the authority figure may have influence on stress, the effect is only a slight one.

**Table 6.** Independent Sample T-test for Stress Level

		Statistic	df	p		Effect Size
<b>Stress Level</b>	<b>Student's t</b>	-0.504	38.0	0.617	Cohen's d	-0.59
	<b>Mann-Whitney U</b>	186		0.707	Rank Biserial Correlation	-0.0700

*Null Hypothesis: There is no significant difference between participants who were exposed to an authority figure who encourages them to violate the rules and those who are not exposed to one.*

Table 6 shows the results of an independent sample t-test conducted to investigate if there is a difference between participants who were exposed to an authority figure that encourages the participants to violate the rules and those who are not exposed to one. Since the study uses between-subject design comparing two groups, an independent sample t-test was utilized by the researchers. A Mann-Whitney U test was used to analyze the data due to the assumption of violation to normality. The results revealed that the level of stress for participants with an authority figure ( $M = 2.70$ ,  $SD = 1.49$ ) were not significantly different from participants without an authority figure ( $M = 3.05$ ,  $SD = 2.72$ ),  $U = 186$ ,  $p = 0.707$ . The effect size was calculated using rank biserial correlation ( $r = -0.0700$ ), suggesting that the presence or absence of an authority figure had little to no impact on the stress level of the participants. With the results, it can be argued that the presence of authority figures does not significantly affect the stress levels of the participants.

**Table 7.** Violation and Stress Level of Participants With and Without Authority

<b>Participants</b>	<b>Violation Made During the Experiment: Obedience Without Authority</b>	<b>Violation Made During the Experiment: Obedience With Authority</b>	<b>Stress Level Without Authority</b>	<b>Stress Level With Authority</b>
<b>Participant 1</b>	2		4	
<b>Participant 2</b>	1		2	
<b>Participant 3</b>	0		1	
<b>Participant 4</b>	3		1	
<b>Participant 5</b>	1		3	
<b>Participant 6</b>	2		1	
<b>Participant 7</b>	3		4	
<b>Participant 8</b>	2		1	
<b>Participant 9</b>	4		8	
<b>Participant 10</b>	2		1	
<b>Participant 11</b>	1		1	
<b>Participant 12</b>	2		1	
<b>Participant 13</b>	1		3	
<b>Participant 14</b>	1		2	
<b>Participant 15</b>	3		1	
<b>Participant 16</b>	3		8	
<b>Participant 17</b>	2		4	
<b>Participant 18</b>	1		1	
<b>Participant 19</b>	4		4	
<b>Participant 20</b>	2		10	
<b>Participant 21</b>		2		3

<b>Participant 22</b>		3		3
<b>Participant 23</b>		3		1
<b>Participant 24</b>		3		2
<b>Participant 25</b>		4		3
<b>Participant 26</b>		5		2
<b>Participant 27</b>		6		3
<b>Participant 28</b>		4		4
<b>Participant 29</b>		5		2
<b>Participant 31</b>		4		3
<b>Participant 32</b>		0		3
<b>Participant 33</b>		4		2
<b>Participant 34</b>		2		2
<b>Participant 35</b>		3		2
<b>Participant 36</b>		5		1
<b>Participant 37</b>		4		5
<b>Participant 38</b>		6		1
<b>Participant 39</b>		2		4
<b>Participant 40</b>		3		1
		4		7
<b>Mean</b>	<b>2.0</b>	<b>3.60</b>	<b>3.05</b>	<b>2.70</b>

Table 7 illustrates how the presence of an authority figure and the lack of it affects the behavior of the participants, specifically in terms of rule violations, as well as its influence on their stress level. The data reveals significant differences in rule violation and stress levels under two different conditions. On average, participants committed less violations when authority was absent ( $M = 2.0$ ) compared to when an authority was present ( $M = 3.60$ ), indicating that authority may encourage rule-breaking behaviors. Interestingly, stress levels showed a slight increase without authority ( $M = 3.05$ ) compared to when participants are under authority ( $M = 2.70$ ), suggesting that reliance on an authority figure may reduce stress levels for some individuals.

## Discussion

The data collection indicates that the presence of an authority figure increases the chance for participants to go against the rules. Moreover, there is a significant difference in obedience between participants who are exposed to an authority figure and those with an absence of such. In table 3, the result reveals a significant difference between the two groups in terms of the obedience to authority which means that authority figure influencing rule-breaking behavior is a factor in their obedience. Similar to the findings in the previous study by Götz et al. (2023), this study's result suggests that the presence of an authority figure has an enormous effect on obedience. Participants in the experimental group who were urged to violate the rules by the authority figure displayed greater levels of obedience compared to those in the control group. When leaders are assigned as an authority figure within a group, participants tend to commit more violations whenever they are encouraged to do so. The higher susceptibility to go against the rules originates from the authoritative figure's influence, demonstrating an authority bias. It is a natural human tendency to succumb to orders, decisions, or instructions from a higher authoritative figure, as stated by Saha (2023). And this phenomenon often leads to people oversteering their own judgment to put more importance to the reasoning of an authoritative figure, despite it going against their own moral and ethical standards. In connection to the original Milgram experiment, the decision of the participants were likely not only influenced by the conditions they were in but as well as by the credibility and authority attributed to the people acting as the authority figure (Van Woensel, 2019 as cited by Azarpanah et al., 2021). This supports the notion that individuals may go along and be impacted by the decisions of an authority figure, regardless of whether their actions align or do not align with their own ethical values.

In the groundbreaking Milgram experiment, participants were subjected to severe psychological consequences as they were instructed to administer what they perceived to be unsettling and potentially harmful electric shocks to another person. Meanwhile, in this study, severe punishments were not put to use towards the participants in order to avoid ethical problems. Instead, the researchers provided lesser consequences for the participants in order to still investigate the essence of the phenomenon of obedience to authority.

In table 6, both groups' stress levels did not differ significantly revealing that the presence of an authority figure was not a factor in stress levels. The result showing no significant difference in stress levels between the two conditions could be understood in a more recent study on obedience. As the study indicates, stress is not always an indicator of an emotional distress caused by an authority figure (Kaposi, 2022). Further research has also yielded findings revealing that while authoritarian leadership increased unethical behaviors, it had little impact on interpersonal stress level (Hu et al., 2022). These findings support the results that stress levels were not significantly different between groups with an authority figure and without one. Based on the findings, the presence of an authority figure had little impact on the stress level of the participants, which could suggest that other factors may have influenced how they responded in the experiment. The absence in the differences in stress level between the group with an authority figure and without one may also be attributed to the enjoyable nature of the activity conducted by the

experimenter which likely contributed to the reduced stress for the participants (Lagunes-Córdoba et al., 2022).

Given the insightful findings of this study, there are still several limitations that should be taken into account. The limited sample size of this study which includes only 40 participants is one of its limitations, which could limit how broadly the research can be applied. To improve its external validity, future researchers could use a bigger sample size. Another limitation that needs to be considered is the use of only one task. This limitation restricts the investigation of the stress level in the participants which could be enhanced by future studies by examining the effects of different tasks with various groups in terms of their stress level. For the reason that this study uses a quantitative approach in gathering data, future researchers may also obtain relevant information regarding obedience to authority if they examine it through the perspective of a qualitative approach. Examining the personal experiences of the participants during the experiment may provide deeper understanding of their own standpoint.

## CONCLUSION

In this study, the researchers aim to examine the influence of an authority figure on the rule-breaking behavior by comparing participants who are exposed to an authority figure that encourages their members to violate rules during an activity with those that were not. Another factor that is examined is the perceived stress levels of the participants exposed in two different conditions: (1) with the presence of an authority encouraging them to break rules, and (2) the absence of such an authority figure. Data were collected from 40 undergraduate students (mixed genders) currently enrolled in the University of Mindanao Digos College based on the specific inclusion and exclusion criteria. Researchers recorded the number of rule violations during the activity. At the end of the experiment, participants were asked to rate their stress levels during the activity on a scale of 1-10 (1 indicating low stress level and 10 indicating high stress level) in response to the question, "How stressed were you during the game?"

A significant difference was observed among the two groups in terms of violations, suggesting that the presence of an authority figure who encourages its members to violate rules have influenced the participant's to commit such actions. Several studies have supported this result, stating that the presence of an authority figure has an enormous effect on obedience. Additionally, authority bias also plays a significant role in the obedience of the participants. This prejudice frequently causes individuals to emphasize assessments of authority figures over their own reasoning or ethical considerations. Whereas, this study indicated no significant difference in stress levels between the experimental and control groups, suggesting that the presence of an authority figure was not a determining factor in stress. This finding is supported by earlier studies indicating that participants found the experiment more enjoyable than stressful, resulting in low stress levels among participants from two different conditions.

The findings of this study provides practical relevance that is helpful in real world problems, especially in the field of mental health. The implementation of stress

management programs is highly encouraged by the researchers as they are crucial for fostering peer support systems. Similarly, ethics training among leaders or authoritative individuals is also recommended as an essential measure to reduce unethical behaviors by encouraging decision-making grounded in moral and ethical principles. This type of leadership intervention helps in alleviating the negative consequences of decisions that go beyond ethical human considerations.

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**Appendix C**  
**Stress Measurement Scale**

How stressed were you during the game?

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

**Appendix D**  
**DOCUMENTATION**

**Figure 1.**

Random Assignment of the participants through tossing coins.



**Figure 2.**

Introduction of the Activity including its mechanics



**Figure 3.**

Experimental Group (Actual Activity)



**Figure 4.**

Control Group (Actual Activity)

