

# Research Proposal

*What is your research question?*

## **Research question:**

*What is the statistically significant difference in the proportion of survey responses indicating a tolerance of violent or aggressive behaviours towards women between Western and Eastern countries, based on a p-value of less than 0.05?*

*Why is this an important question to answer?*

*What does previous research tell you about the question?*

## Introduction

The issue of violence against women (**VAW**) is a persistent problem that has garnered widespread attention in recent years. Philosophy and upbringing are two key factors that shape an individual's perspectives and acceptance of behaviours (Zmigrod et al., 2021, Abi Rached et al., 2021). These, in turn, are shaped by the ideological context. There are two overarching ideologies that have a significant impact in shaping societal and cultural norms (eg. Education systems, expectations, socioeconomic factors, substance abuse, etc.), namely Western and Eastern cultures (Nakayama and Wan, 2019). These two cultures put an emphasis on different values, and this research aims to see what impact that may have on the tolerance of VAW (*table 1*).

*Table 1: Some key differences between eastern and western ideology.*

Eastern Ideology	Western Ideology
<ul style="list-style-type: none"><li>▪ Shame/honour cultural dynamic</li><li>▪ Collectivism oriented</li><li>▪ Respect for Hierarchy</li><li>▪ Comfortable with mixed emotions</li></ul>	<ul style="list-style-type: none"><li>▪ Guilt/innocence cultural dynamic</li><li>▪ Individualism oriented</li><li>▪ Respect for Equality</li><li>▪ Uncomfortable with negative emotions</li></ul>

Existing societal structures worldwide have primarily been created by a patriarchal system, which often does not cater to the needs and rights of women (Pierik, 2022, Javed and Chattu, 2021). However, it is possible that one cultural ideology may be intrinsically more inclusive and less tolerant of VAW. None of the available literature has directly investigated this question, although Canto et al. recently conducted a literature review and made comment numerous times regarding the relevance of ideological variables. This study advances the dialogue on VAW, offering a new perspective on a persisting problem. There are many factors that impact VAW and perpetuate its tolerance, such as mental health, substance abuse, economic and educational disparities, past experiences, and cultural norms etc, (Lal). However, these factors are a result of the systems we put in place, which are a function of the ideological context of the region. From this research, ideologies and systems can be dissected and judged empirically in ways that can bring about real and lasting reform. It is essential we examine the underpinning problem to prevent aggression acts moving to a different target. The overarching question is '*what ideologies appear to have aggressors, what systems cause this, and how is the system failing these people?*', this line of inquiry is an important first step.

## Proposed experiment design

*What data will you need to answer the question?  
How will you analyse this data?*

**Data source:** <https://www.kaggle.com/datasets/whenamancodes/violence-against-women-girls>

**Question style** - This will be a cross-sectional study that avoids open-ended questions and ranking scales. Open-ended questions are time consuming and introduce researcher bias on interpretation, and ranking scales introduce the problem of participants interpreting the scale differently. Instead, we will use closed response questions that users can answer quickly to improve retention. The first section will have descriptive questions so we can categorically separate subpopulations (age, gender, education level, etc.). Questions will have three response options: 'Agree', 'Disagree', and 'Unsure'. The nature of VAW, specifically the tolerance towards it, is that there are only two groups. Those that oppose it, and those that do not. This format is the best approach to identify those two groups for each scenario presented. Here are some example questions:

- A husband is justified in hitting or beating his wife if she burns the food
- A husband is justified in hitting or beating his wife if she neglects the children
- A woman should expect to be hit by a man in her lifetime

**Subject treatment** – The Nuremburg Code will be acknowledged and observed before, during and after the experiment (this includes obtaining informed consent and explicitly explaining their right to withdraw). Subjects need to be able to freely and honestly respond, so names will not be recorded, and a web/contactless interaction would be most appropriate. Prior to starting, a trigger warning will be displayed to give victims notice. On completion the appropriate helplines will be provided.

**Subject selection** – To be wide reaching and to have contactless interactions, subjects will be 'self-selected'. Multiple social networking services (Twitter, Facebook, WhatsApp, WeChat, etc.) will be used to have a global reach. Efforts will be made to reach older demographics, perhaps by partnering with other institutions/influencers that can assist in reaching that demographic (hospitals, research groups, travel agents, etc.). As the attitudes in question are long lasting, the data collection period can be open for an extended period, we suggest six months to limit noise but increase participation. We hope to get 1000 responses from each country so that sub-groups have enough statistical power to draw meaningful conclusions from. Additionally, recapture mechanisms, IP addresses and completion times will be used to rule out bot interference (Storozuk et al., 2020).

**Data Cleaning** – Survey completion rate for each country will be calculated, as this may be evidence of a disinterest in women's rights. If there are only one or two unanswered questions, then a logistics regression model may be constructed from all the complete data to determine the probability the subject would have answered a given way. If the outcome has a likelihood of 0.8, then that value will be taken, otherwise that participants data will not be included.

**Analysis** – Initially an exploratory Data analysis will be conducted to generate simple summary statistics for each country. Proportion of intolerant responses will then be determined for each country per question, and a z-test will be used to determine the difference between eastern and western countries as a collective.

Additionally, A DBSCAN and an agglomerative clustering model will be used to be built from survey responses (bar country of origin answers) to split the data into three groups. The three groups will be labelled on the original data set and a map will be created that colour codes country by group. It

will be interesting to see if these groups separate the map into eastern and western countries, with the third group perhaps representing an area where changes are occurring. These models will be measured for accuracy using a silhouette score or with the Variance Ratio Criterion. The process will be repeated, however this time the number of clusters will be tuned to find the optimal model. These subgroups will then provide some discussion for further research.

*What are the professional ethical implications of creating and implementing a survey to collect the proposed data collection and in the analysis of that data?*

## Ethical considerations

### - Data security

We must prevent this data being used for anything other than its intended purpose (without consent) and ensure users remain anonymous. If a secure storage facility cannot be obtained (eg. a data warehouse) and data leaks are a serious concern, then descriptive data columns (age, country, IP address, etc.) must be replaced with an ambiguous equivalent.

### - Creating/ perpetuating false stereotypes

We must be careful how we frame the discussion of results. This research is not intended to attack any countries or ideologies. At its core, it begins the work of identifying people that condone aggressive behaviours and modify the systems, so they no longer generate aggression but still align with their ideology. This must be the focus of all communication and we must sample representatively to avoid creating/ perpetuating prejudices (Mittelstadt et al., 2016).

### - Perception Bias

It is important we work closely with an international team of researchers, and that the research paper is thoroughly peer reviewed by multiple contexts. This is a paper that intends to benefit all of humanity, not just a western research team. An international team is needed in order to avoid perception bias and garner international support (Kowal et al., 2022).

Although these risks exist, they are entirely controllable. We accept the responsibility of this research because we are confident that it will generate positive communication and momentum in the fight against VAW.

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