



Faradiba Faradiba <faradibaruslan@gmail.com>

Re: 2023/ARJASS/97218 : Manuscript has been submitted

3 messages

Editor Submission <emergency.submission@gmail.com>
To: Faradiba Faradiba <faradibaruslan@gmail.com>

Fri, Feb 24, 2023 at 11:48 AM

Dear Dr. Faradiba Faradiba,

Thank you very much for submitting your valuable paper to our journal. We have started the editorial processing of the manuscript with the following details

Title: The Effect of Increasing Temperature on Crime
Journal: [Asian Research Journal of Arts & Social Sciences](#)
Manuscript Number: 2023/ARJASS/97218

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With Best Regards
Ms. Ruma Bag

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UK: Third Floor, 207 Regent Street, London, W1B 3HH, UK, Fax: +44 20-3031-1429

EMP-001-BD

On Fri, 24 Feb 2023 at 07:00, Faradiba Faradiba <faradibaruslan@gmail.com> wrote:

Dear Editor

Here I am submitting the manuscript for publication in the Asian Research Journal of Arts & Social Sciences. I hope the manuscript can be published on March 1, 2023. Thank you.

Regards,

Faradiba
Prodi Pendidikan Fisika
Universitas Kristen Indonesia
Jln. Mayjen Sutoyo No. 2 Cawang, Jakarta Timur
Phone : 021. 8092425 Ext. 3314
E-Mail : faradiba@uki.ac.id
faradibaruslan@gmail.com

Faradiba Faradiba <faradibaruslan@gmail.com>
To: Editor Submission <emergency.submission@gmail.com>

Fri, Feb 24, 2023 at 12:18 PM

This is original research article.
My WhatsApp number +62 85696411633
[Quoted text hidden]

Editor Submission <emergency.submission@gmail.com>
To: Faradiba Faradiba <faradibaruslan@gmail.com>

Fri, Feb 24, 2023 at 2:09 PM

Dear Dr. Faradiba Faradiba,

Thank you for your mail and information. We have received your contact details for future communications.

Thank you for your interest in our journal.

With Best Regards
Ms. Ruma Bag

Journal editorial office

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India: Guest House Road, Street no - 1/6, Hooghly, West Bengal, India, Tel: +91 8617752708 | +91 9163821242,

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Faradiba Faradiba <faradibaruslan@gmail.com>

Minor review comments for manuscript number: 2023/ARJASS/97218

2 messages

Editor PRM 3 <sdi.3@sciencedomain.org>
To: Faradiba Faradiba <faradibaruslan@gmail.com>

Sat, Feb 25, 2023 at 6:23 PM

Dear Dr. Faradiba Faradiba,

We are contacting from [Asian Research Journal of Arts & Social Sciences](#) regarding Manuscript Number. 2023/ARJASS/97218

Title of the Manuscript: **The Effect of Increasing Temperature on Crime**

All review comments (4 nos.) are attached with this email.

Please do the correction as per the review comments in the following file

File name: (Ms_ARJASS_97218)

Deadline:

Authors are requested to send revised paper as soon as possible (within 3 days) to accelerate the pre-publication formalities. If we receive the revised version within this deadline, the paper can be published in the current issue of the journal within 7 days. If extra time is required, kindly inform us.

Revised paper:

1. Comments of all the reviewers should be addressed during revision. Authors are requested to submit the revised paper with all the corrections highlighted in yellow color (for example. abc.....efg).
2. Authors should write their feedback in the review form in the space provided for 'author's comment' and send back the filled forms to us along with the revised paper.
3. **Please send us the revised version along with feedback via E-mail attachment in reply mail.**

You are hereby requested to kindly acknowledge the receipt of this mail.

-

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With Best Regards
Ms. Ruma Bag

Journal editorial office







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Faradiba Faradiba <faradibaruslan@gmail.com>
To: Editor PRM 3 <sdi.3@sciencedomain.org>

Sun, Feb 26, 2023 at 6:54 AM

Dear Editor

I hereby submit the revisions from the reviewers. I marked the revision with yellow highlights. I hope the manuscript can be published before March 1, 2023. Thus conveyed, thank you.



Regards,

Faradiba
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Peer Review History: The Effect of Increasing Temperature on Crime

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(1) Dr. Ana Sofia Pedrosa Gomes dos Santos, Assistant Professor, UIDEF – Instituto da Educação, Universidade de Lisboa, Portugal.

Reviewers:

- (1) Danielle Sapse, John Jay College, USA.
- (2) Orlando Reynoso Orozco, Universidad de Guadalajara, México.
- (3) Mukesh Sharma, State Forensic Science Laboratory, India.
- (4) Mohammad Mehdi Hooshmand, Shahid Beheshti University, India.

Additional Reviewers:

- (1) Abdelnaser Omran, Bright Star University, Libya.
- (2) Chandra Shekhar Ghanta, Telangana University, India.
- (3) Mohammed Eldaghmah, Naif Arab University, Saudi Arabia.
- (4) Najleh Khandagh, Tarbiat Modaress University, Iran.
- (5) Wasantha Rajapakshe, Sri Lanka Institute of Information Technology, Sri Lanka.
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Stage 2 | Peer review report_2 (Orlando Reynoso Orozco, México) | [File 1](#) | NA

Stage 2 | Peer review report_3 (Mukesh Sharma, India) | [File 1](#) | NA

Stage 2 | Peer review report_4 (Mohammad Mehdi Hooshmand, India) | [File 1](#) | NA

Stage 2 | Revised_MS_v1_and_Feedback_v1 | [File 1](#) | [File 2](#)

Stage 3 | Comment_Editor_1_v1 | [File 1](#) | NA

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Review Form 1.7

Journal Name:	Asian Research Journal of Arts & Social Sciences
Manuscript Number:	Ms_ARJASS_97218
Title of the Manuscript:	The Effect of Increasing Temperature on Crime
Type of the Article	

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments		
1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript)	Yes, I believe that the manuscript discusses important ideas in finding connections between temperature and an increase in crime. It is a useful idea in terms of trying to reduce crime.	Noted
2. Is the title of the article suitable? (If not please suggest an alternative title)	Yes	okay
3. Is the abstract of the article comprehensive?	Yes	
4. Are subsections and structure of the manuscript appropriate?	Yes	
5. Do you think the manuscript is scientifically correct?	Yes	
6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. (Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)	Yes	
Minor REVISION comments		
1. Is language/English quality of the article suitable for scholarly communications?	There are several mistakes in language. For example, the word "misuse" may have been meant to be "abuse." There are also sentences that are not complete, such as "In urban areas, relatively few acts of theft." Also, the word robbery is capitalized in the manuscript and should not be.	Noted and corrected
Optional/General comments		

PART 2:

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Journal Name:	Asian Research Journal of Arts & Social Sciences
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PART 1: Review Comments

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Compulsory REVISION comments 1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript) 2. Is the title of the article suitable? (If not please suggest an alternative title) 3. Is the abstract of the article comprehensive? 4. Are subsections and structure of the manuscript appropriate? 5. Do you think the manuscript is scientifically correct? 6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. (Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)	Yes Yes Yes Yes Yes Yes	Okay
Minor REVISION comments 1. Is language/English quality of the article suitable for scholarly communications?	Some Editorial Correction needed	Corrected
Optional/General comments	Nicely represented	Noted

PART 2:

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Are there ethical issues in this manuscript?	(If yes, Kindly please write down the ethical issues here in details)	

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Journal Name:	Asian Research Journal of Arts & Social Sciences
Manuscript Number:	Ms_ARJASS_97218
Title of the Manuscript:	The Effect of Increasing Temperature on Crime
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General guideline for Peer Review process:

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Compulsory REVISION comments</p> <p>1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript)</p> <p>2. Is the title of the article suitable? (If not please suggest an alternative title)</p> <p>3. Is the abstract of the article comprehensive?</p> <p>4. Are subsections and structure of the manuscript appropriate?</p> <p>5. Do you think the manuscript is scientifically correct?</p> <p>6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. (Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</p>	<p>Yes, the main concepts and results are innovative. Climate change and their socioecological effects must be highlighted locally and globally. Public policies could be implemented by governmental entities related with the main objective of the article.</p> <p>No. The title is ambitious, to general and unspecific according to the results.</p> <p>Yes</p> <p>Partially. Results are combined with discussion and are not clear enough.</p> <p>Yes</p> <p>Yes</p>	<p>Noted and corrected</p>
<p>Minor REVISION comments</p> <p>1. Is language/English quality of the article suitable for scholarly communications?</p>	<p>Yes</p>	
<p>Optional/General comments</p>	<p>I suggest that the title be restructured according to the findings and results, try to use key words on it. In the six paragraph a reference is missing related with the information of the first, second and third line.</p> <p>The results are confusing because they are mixed with the discussion. I suggest that first the autor focus on the data obtained so it could be able to add more information regarded with it; for example, we need information about de variables and how the correlate, we only see the significances, but the information of raw results is not show.</p> <p>Also, the main objective of regression analysis is to make predictions and we only se correlations, it's not clear the cause-and-effect relationship because we have a multivariate the problem, a socioecological problem.</p> <p>I also suggest a table with historical data of the weather conditions, so we could be able to identify the increase in temperature and the relationship with crime.</p>	<p>Revised accordingly</p> <p>Noted and corrected</p>

PART 2:

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<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

The Effect of Increasing Temperature on Crime

ABSTRACT

Climate change is often associated with society's socioeconomic conditions, impacting people's welfare. On an ongoing basis, the level of interest will affect the crime rate in an area. This study aims to determine the effect of temperature changes on theft and abuse. The data used in this study are temperature data and data on theft and abuse. Besides that, this study also uses other data such as regional status, GRDP per capita, and village classification to test the model. This research uses the multiple linear regression method. The results obtained in this study showed that an increase in temperature impacted the theft and abuse that occurred in an area. Gradually increasing temperature reduces people's productivity, which will affect the level of people's welfare. The government's role is to handle this problem quickly and thoroughly. In addition, mitigating public interest due to the impact of climate change is an essential issue in maintaining the stability of the socioeconomic conditions of the community.

Keywords: Climate, Theft, Abuse, Multiple Linear Regression, Indonesia

INTRODUCTION

Crime is a social negative that must be eradicated so that the level of public safety can increase sustainably. However, in terms of economic factors, crime occurs because society's adequacy in their daily activities cannot improve their welfare. Crime in Indonesia is still rife; demands for necessities of life and environmental conditions drive an individual or group of people to commit criminal acts.

In aggregate, the crime rate in Indonesia has fluctuated, namely from 2015-2017, which consists of the number of crime incidents or criminal acts. National Police data shows the number of crime incidents (total crime) in 2015 was 352,936 cases, increased to 357,197 cases in 2016 and decreased in 2017 to 336,652 cases. Several studies reveal climate variability and change's substantial and significant impact on both violent conflict and crime[1].

Climate change is often associated with society's socioeconomic conditions, which impacts people's welfare[2]. On an ongoing basis, the level of interest will affect the crime rate in an area. Someone will try their best to meet the basic needs of life, such as food, clothing, and shelter. Someone often justifies any means to get the necessities of life[3].

Areas with minimal resources will depend on the primary business sector, such as agriculture. The agricultural industry tends to rely on the climate. Low or extreme rainfall will trigger crop failure. The crop failure that occurs will disrupt the socioeconomic conditions of the community. This condition will activate unemployment, school enrollment, and public health and not infrequently cause criminal acts in society.

Climate change will encourage crime by increasing tensions, reducing social control, weakening social support, and cultivating traits conducive to crime. High temperatures and low rainfall are considered easier to trigger one's emotions, so it can cause conflict between individuals[4]. The hot temperature is deemed to be able to ignite the fire of commotion in the community quickly. This relates to a person's psychological reaction. Increased body temperature due to hot weather results in increased heart rate, testosterone, and metabolic reactions that can trigger the sympathetic nervous system and 'activate' the fight-or-flight response, making a person tend to fight[4], [5].

For violent conflict, a global study compiling findings from 10,000 BC to the present found a correlation between climate and conflict. Climate change towards warmer temperatures or more extreme rainfall increased the frequency of interpersonal violence by 4% and intergroup conflict by 14%. Another study examined the potential impact of global climate change on armed conflict in sub-Saharan Africa and found that temperature variations were strongly associated with conflict incidents over historical periods, with a one °C increase in temperature causing a 4.5% increase in the civilian population. As for violent crimes, Field[6] shows the impact of temperature on violent crime based on forty years of annual, twenty years of quarterly data and ten years of monthly data for reportable crimes in England and Wales. Cohn[7] found that most violent crimes against people were linearly correlated with heat. Mares dan Moffett[8] showed that each degree Celsius increase in annual temperature was associated with an average rise in the homicide of nearly 6%.

Based on the background above, it is known that climate influences a person's emotional condition. This research will examine the impact of the environment on the socioeconomic conditions of society, as measured by regional crime. This study uses microdata at the village level to obtain more representative results. The results of this study imply that climate change has a positive impact on regional crime.

DATA AND METHODOLOGY

The data used in this study are temperature data sourced from the Meteorology, Climatology and Geophysics Agency, as well as data on theft and abuse originating from the 2018 Village Potential data collection (PODES) carried out by the Central Statistics Agency (BPS). In addition to criminal data, this study also uses other data such as regional status, GRDP per capita, and village classification. The model to be built in this study is as follows:

$$Theft = \alpha + \beta_1 X_{temperature} + \beta_2 X_{city} + \beta_3 X_{grdp\ percapita} + \beta_4 X_{island} + \varepsilon$$

$$Persecution = \alpha + \beta_1 X_{temperature} + \beta_2 X_{city} + \beta_3 X_{grdp\ percapita} + \beta_4 X_{island} + \varepsilon$$

This research uses the multiple linear regression method. This study uses several control variables to determine the strength of the model formed. A good model will have the same direction and coefficient significance.

RESULTS AND DISCUSSION

Based on the results of the regression calculation, it is known that an increase in temperature impacts an increase in theft. As an illustration, an area where most of the population is farmers would expect good rainfall conditions. If frequent crop failures occur due to high-temperature conditions, the affected people will try to get money to meet their basic needs. This condition is often done by justifying any means. This phenomenon causes theft to increase. In urban areas, relatively few acts of theft. This is because urban areas tend to find it easier to find alternative jobs. In addition, relatively few residents of urban areas are engaged in the agricultural sector, so the impact of climate change is not significant.

Regions that have good economic conditions, one of which will be characterized by a relatively high per capita GRDP value. The higher the value of GRDP per capita will reduce theft in the local area. The good economic condition of the community is often associated with criminal acts that occur in the local area. Regions with a good economy indicate that the community can meet the basic needs of life, so that criminal acts can be minimized because there is no encouragement due to the community's economic conditions.

Table 1.Effect of Temperature on Theft in Indonesia

Variables	Indonesia		
	Model 1	Model 2	Model 3
Temperature	0.019** (0.008)	0.016** (0.008)	0.017** (0.008)
City		-0.182*** (0.018)	-0.167*** (0.019)
GRDP percapita			-0.043** (0.020)
Constant	0.710*** (0.221)	0.821*** (0.221)	0.803*** (0.221)
Observations	13,027	13,027	13,027
R-squared	0.000	0.006	0.007

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Based on table 1 it is known that temperature consistently has a positive coefficient of 0.019 (model 1), 0.016, and (model 2), and 0.017 (model 3). The urban area variable consistently has a negative variable of -0.182 (model 2) and 0.167 (model 3). Meanwhile, GRDP per capita has a negative coefficient of -0.043. Each model is added gradually influencing variables so that the strength of the model can be known.

Based on the islands in Indonesia, the islands of Bali and Nusa Tenggara are the islands that have the highest and most significant temperature coefficients. The islands of Bali and Nusa Tenggara are islands that are still heavily dependent on the agricultural sector. So that climate change is very influential on the farming sector because plant growth and productivity are vulnerable to climate change. The impacts of climate change, such as increasing air temperature, changes in rain patterns, and extreme climates, hurt crop production systems.

Table 2. Influence of Theft by Island in Indonesia

Variables	Indonesia					
	Sumatera	Jawa	Bali and Nusa Tenggara	Kalimantan	Sulawesi	Maluku and Papua
Temperature	0.109*** (0.036)	-0.006 (0.009)	1.351*** (0.522)	0.246 (0.198)	0.097 (0.094)	-0.588** (0.232)
City	-0.159*** (0.034)	-0.100*** (0.031)	-0.316*** (0.077)	-0.174** (0.075)	-0.070 (0.060)	-0.142** (0.065)
GRDP percapita	-0.083** (0.033)	-0.081** (0.033)	-0.164* (0.098)	0.063 (0.088)	-0.123** (0.061)	0.049 (0.070)
Constant	-1.653* (0.972)	1.307*** (0.230)	-36.042** (14.448)	-5.456 (5.410)	-1.343 (2.582)	17.407*** (6.364)
Observations	3,718	3,750	1,110	1,089	1,994	1,366
R-squared	0.012	0.005	0.026	0.007	0.006	0.007

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Similar to the case of theft, the temperature has a positive and significant influence on acts of persecution. In urban areas, acts of persecution tend to be more than in rural areas, and the availability of alternative jobs in urban areas causes this phenomenon. In general, the regression results on maltreatment are the same as theft, both in the direction of the coefficient and significance. Theft and abuse are two types of criminal acts that can harm society. Theft has the impact of losing a person's/institution's valuables, while the object of abuse tends to be humans. Persecution can be in the form of physical or non-physical violence, such as words. Both of these actions have criminal sanctions in the eyes of the law when there are people who commit them.

Table 3.The Influence of Temperature on Persecution in Indonesia

Variables	Indonesia		
	Model 1	Model 2	Model 3
Temperature	0.009*** (0.003)	0.009*** (0.003)	0.009*** (0.003)
City		-0.014* (0.008)	-0.014* (0.008)
GRDP percapita			0.000 (0.008)
Constant	-0.164** (0.069)	-0.155** (0.068)	-0.155** (0.068)
Observations	13,027	13,027	13,027
R-squared	0.000	0.001	0.001

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Based on table 3 it is known that temperature consistently has a positive coefficient of 0.009 (models 1, 2 and 3). The urban area variable consistently has a negative variable of -0.014 (models 2 and 3). Meanwhile, GRDP per capita has a coefficient of 0.000 but not significant (model 3). Each model is added gradually influencing variables so that the strength of the model can be known.

Based on the classification of islands in Indonesia, the following is the effect of temperature on cases of persecution:

Table 4.Effect of Temperature on Persecution by Island in Indonesia

Uraian	Sumatera	Jawa	Bali and Nusa Tenggara	Kalimantan	Sulawesi	Maluku and Papua
Temperature	-0.023* (0.013)	0.007*** (0.003)	0.018 (0.220)	-0.049 (0.072)	-0.015 (0.039)	0.377*** (0.121)
City	-0.000 (0.011)	0.005 (0.013)	0.045 (0.040)	-0.023 (0.026)	-0.006 (0.022)	-0.042 (0.041)
GRDP percapita	-0.005 (0.010)	0.000 (0.015)	-0.022 (0.048)	0.008 (0.032)	-0.008 (0.023)	-0.023 (0.046)
Constant	0.690* (0.364)	-0.140* (0.072)	-0.385 (6.117)	1.404 (1.966)	0.527 (1.056)	10.154*** (3.292)
Observations	3,718	3,750	1,110	1,089	1,994	1,366
R-squared	0.001	0.001	0.001	0.002	0.000	0.008

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

In line with Shen's[9]study, there is a strong positive linear relationship between temperature and violent Robbery, assault, and rape. Especially at temperature-rape up to 0.883. However, there is no linear temperature-robbery relationship which means that for every one °C increase, there will be a 0.38 increase in violent robbery incidents per million people per month. Meanwhile, strong correlations were also found with seasonal temperature values, relative humidity and crime rates which can be interpreted by RA Theory[10].According to RA Theory, higher but not extreme temperatures and relative humidity tend to increase mobility and social interaction, increasing the likelihood of environmental suitability.

Targets that occur and therefore more crime possibilities. According to the Crime Pattern Theory, crime is not random but planned or opportunistic, and it occurs when the victim's or target's activity space intersects with the perpetrator's. Under higher but less extreme temperatures and relative humidity, outdoor activity is usually more frequent, and intersecting activity spaces may attract more perpetrators and victims and thus lead to more crimes. A positive correlation between seasonal temperature (and relative humidity) and crime rates is expected. Seasonal fog was also a significant predictor of violent burglary and rape, with R values of 0.24 and 0.327, respectively. And for violent Robbery and rape, the significance is lower than 0.05. The correlation between haze and violent Robbery and the correlation between moisture and rape was negative[9].

Human discomfort and therefore, can lead to crime. However, these theories cannot always explain the relationship between temperature and violent crime. Some research results show a less significant relationship between robbery temperature and violence. This is consistent with our recent study examining the differences between Robbery and violence in Beijing, China. When human discomfort is beyond a threshold where the criminal's motivation to escape from an uncomfortable situation exceeds the reason to be aggressive, violent Robbery will no longer increase or even decrease with increasing heat stress. So influenced by opportunity, target, guardian, and human convenience, the relationship between Robbery and violence and temperature is more complex and less significant than the relationship between Robbery and violence and temperature[11].

In summary, the correlation between several types of property and violent crime and temperature is good due to seasonality in the crime and temperature data, which can be reasonably explained by The Routine Activity (RA) theory[10]. This is not to say that heat stress doesn't play a role. Even within the RA framework, the occurrence or absence of a crime is closely related to the perpetrator's motivation and incentives. In some cases, individual-level motivations and incentives may have little to do with temperature (and other climate variables). Still, in other cases, they may be affected by temperature (and other climate variables) due to e.g. human discomfort.

Mitigation is needed as an antidote to the occurrence of criminal acts. The economic conditions of society often cause the emergence of crime. During global climate change, the government should prevent crop failures, especially in rural communities that depend heavily on their agricultural sector income. Through reasonable assistance, it is hoped that the community can maintain productivity so that it has an impact on welfare.

CONCLUSION

Crime has a variety of negative impacts on society. Crime is often associated with education, economics, and psychological conditions. In this study, it is known that economic factors triggered by temperature conditions hurt an area. Poor handling and mitigation of criminal acts can exacerbate the comfort of the community. The government's role is to handle this problem quickly and thoroughly. In addition, mitigating public welfare due to the impact of climate change is an essential issue in maintaining the stability of the socioeconomic conditions of the community.

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