

# The Influence of Gangs in Central America with Respect to Woman's Wellbeing

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**Abstract:** The purpose of this paper is to identify the influence of gangs in Central America on women and the communities that the gangs control. This examination incorporates system dynamics modeling techniques, which includes using Vensim software to show both Causal Loop and Stock and Flow Diagrams. This research evaluates the influence of a community's power over its citizens through its ability to enforce anti-gang policies and the strength of local community organizations. Comparing five different Central American countries (Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua) allowed the model to provide data to create policy recommendations for the entire region in addition to each of the five countries. Our conclusions suggest that thorough increasing policies restricting gang activities and promoting women's involvement in society (via higher levels of education, female employment, and female role models), communities will grow stronger and be less affected by the violence and influence of gangs.

**Keywords:** Gangs, Central America, Women's Wellbeing, Societal Influence, System Dynamics

## 1. Introduction

The primary focus of research on gender and security has been based in Africa and the Middle East, leaving Central America largely unstudied in this field. This is despite the fact that half of the countries in Central American boast some of the highest homicide rates in the world for countries not at war (Shifter, 2012). The amount of violence and corresponding displacement show the influence of organized crime institutions and gang violence specific to the region and demand to be examined through gendered conflict analysis (UNHCR, 2019). Gangs continue to grow in size and influence by overpowering civilian authorities, extorting businesses, recruiting youths, and dictating the treatment of women (Jütersonke et al., 2009). These actions create viscous cycles of power that allow gangs to remain in control. Gangs exploit women to gain control over communities via targeted rape, indoctrination of novias ("girlfriends of the gang"), or actively recruiting women to become part of the gang (Applebaum et al., 2018). As a result of gang and other criminal activity in their region, many women are afraid to let their children go to school because some gangs control the school's instructors, promote drugs at school, and use the school setting to recruit students to join the gangs (Garcia et al., 2018). Gangs also attract children through spending time in the various neighborhoods of their gang's territory (University Institute of Public Opinion, 2010). The most cited way to obtain societal development and security is through general equality (Barathe, 2018; Saferworld, 2017; Destrooper, 2014). However, the road to equal gender rights and opportunities often instigates conflict because many communities, especially in Central America, have norms that restrict women. The way to overcome these stereotypes is to change policy and build programs that incorporate more inclusive, equal norms to promote peaceful interactions between people (Saferworld, 2017).

## 2. Problem Articulation

Women and children are the groups most affected by armed conflict while also being most likely to lack the resources needed to change their situations (United Nations Security Council, 2000). Women in Central America, for example, face issues of human trafficking, gang violence, and social norms that limit their involvement both in household and societal decisions (World Bank Group, 2018). However, having women serve in positions of power in the community, via government or employment, creates role models for children and other women to break the cycle of repression and increase women's wellbeing (Villalba et al., 2014).

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A key factor that determines the level of influence that gangs have over communities and the resulting treatment of women is the group in power (gang leadership or local government officials). One way to gauge the control that a gang has is by evaluating the recruitment and induction rates of that gang. Youths that have an unstable family life are more likely to be influenced by the gang and join its ranks (Santacruz Giralt, 2010). Policies that existing governments have tried to implement with varying degrees of success to limit gang growth include the idea of “Mano Dura” (Firm Hand) or zero-tolerance policies. These policies punish any activities that appear gang related including gang identification (gang signs and tattoos) by immediately arresting the suspected gang member (Applebaum & Mawby, 2018). However, these policies are not effective enough to be permanent solutions, so the following model simulation creates a new way of thinking about the problem using system dynamics modeling techniques.

## 2.1 Theme Selection

When women are denied the ability to go to school or get a job, they are isolated from participating in their communities. This results in more women being oppressed, leading to weaker family ties and room for greater gang control (World Bank Group, 2018). However, encouraging women to finish their education and become employed has tremendous positive effects on their community due to an increased level of family stability and greater community control.

Having the next generation of young adults (the prime target of gang recruitment efforts) involved in gangs limits their future ability to find employment or seek other opportunities outside the gang. Additionally, involvement in gangs creates more violence in a community and increases an area’s crime rate through petty crime, extortion of local businesses, racketeering, and drug-related activity (“Crime Rates”, n.d.). The amount of influence a gang has over a community will impact that community’s future based on whether citizens are able to continue working and sending their children to school without gang interference (Garcia et al., 2018). Gangs also use their influence to sell votes to get certain politicians into office who promise to have more relaxed policies or policing of gangs (Shifter, 2012).

## 2.2 Key Variables

The most important variables in this model include the influence of gangs in a community, the total number of gang members, and women’s wellbeing. These are important because they each address a different part of the gang sphere of influence. The model assumes that a gang’s influence over society affects the number of people interested in joining the gang. This then increases the size of the gang as more individuals are inducted. Senior gang leaders have a vision for their organization which includes gang profitability and the gang violence required to maintain their status as protectors, or a police force, over a community (Shifter, 2012). A gang can dominate an entire population if a local government is not strong enough to increase community control or support the wellbeing of the women in their communities (World Bank Group, 2018).

## 2.3 Time Horizon

The time horizon that best represents this problem is 50 years because that would cover two generations. This time horizon is also appropriate because the United States has been fighting gangs since President Nixon declared the “War on Drugs” in 1971, so it has been almost 50 years that the US has been dealing with the problem of gangs selling and smuggling drugs, with no sign of change occurring (Rodrigues et al., 2016). A 50-year timeline would allow the model to illustrate the long-term change that would occur in a community’s development by increasing the strength of local organizations and the use of zero- tolerance policies.

## 2.4 Reference Mode

A reference mode shows the behavior of a variable over time (Vensim, n.d.). The reference mode for the gang’s influence over a community is expected to stay constant at its current state of power until something shifts in the community that gives the community leadership a chance to gain control. Examples of this control include representatives winning local elections with agendas to curtail gang power using zero tolerance policies, communities encouraging women to further their education and assisting women to find employment. The shift in control will take decades to fully show the change in a community because personnel from all social classes will need to see the impact and benefits of the change. However, once the change begins, it will grow exponentially. This change is evident in Figure 1. As soon as a community assumes control, more people are likely to move to that community due to having a higher quality of life than their home of origin. This has been seen in Costa Rica in decades previously as Costa Rica has risen above other Central American countries that struggle with more gang violence and oppression of women (Institute for Economics & Peace, 2019).

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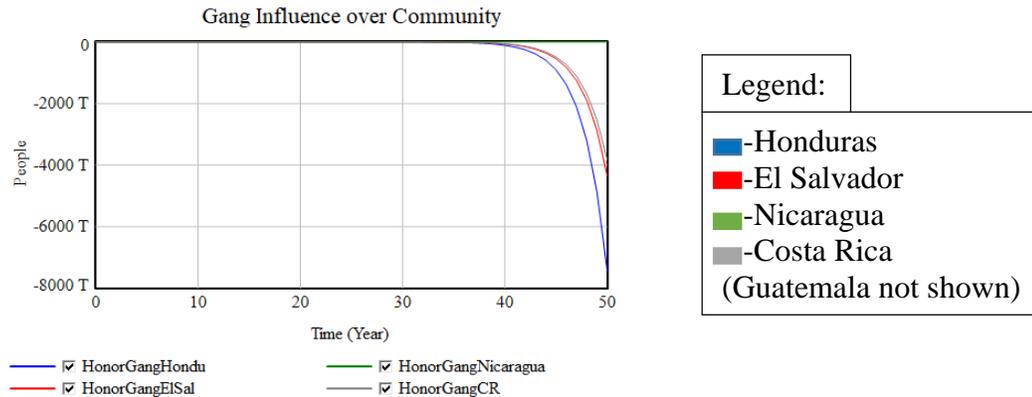


Figure 1. Reference mode for the Gang Influence over countries in Central America

Figure 1 shows that with a time horizon of 50 years, there would not be a change to the gang control in the first 36 years, but over 40 years, there would be a tipping point when the gang’s influence would noticeably start to lessen. Over the course of 45 years, the divergence in power would be even more obvious, with the greatest decrease occurring in the last 5 years. Since the gang influence started at 10,000 people (the average number of gang members involved in Central America), the decrease in gang control shows that by the end of the proposed 50 years, only a few thousand people remain under the control of the gang (United Nations Office on Drugs and Crime, 2012). Regardless of the country in Central America, each of the five displayed a similar behavior as the other counties for the reference mode. The power started under the control of the gang, and then decreased dramatically. The remaining personnel would likely be family members of the gang or people that are deeply entrenched in the operations of the gang that are being paid to do services for the gang, like prison guards, politicians, or police that look the other way on gang-related activities (Shifter, 2012). However, over a longer time period, these loyalists would likely continue to decrease as well as the gang loses influence, profitability, and members.

### 3. Dynamic Hypothesis

As gangs increase in size by having more members, they are assumed to have more influence over communities, leading to a higher recruitment rate that results in increased gang membership. Community control, however, acts as a balancing factor in the model by decreasing the influence of gangs over a community while increasing the level of women’s wellbeing which stabilizes families and thus the community. This hypothesis is shown in Figure 2, which uses a causal loop diagram (CLD) to illustrate how variables are related to, and effected by, other variables in the system. The “+” or “-” next to the arrowhead signifies the polarity of that variable. An arrowhead with a positive sign signifies that the variables have a positive correlation, while a negative sign means the variables have an inverse relationship. There are two types of feedback loops resulting from the relationship between the variables, reinforcing and balancing. Reinforcing, illustrated with an “R,” means that more input is added to the loop through the variables will result in an overall growth or decline. Balancing, denoted with a “B,” means the overall level remains the same because the input added evens out with the amount lost (Sterman, 2000).

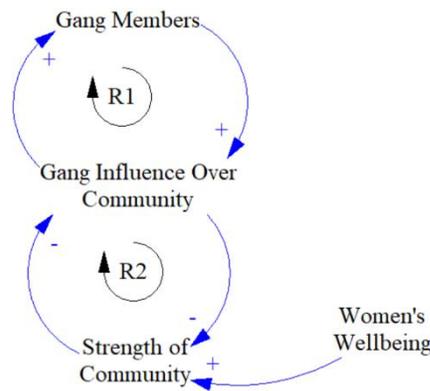


Figure 2. Simplified CLD to depict the Dynamic Hypothesis

### 3.1 Causal Loop Diagram (CLD)

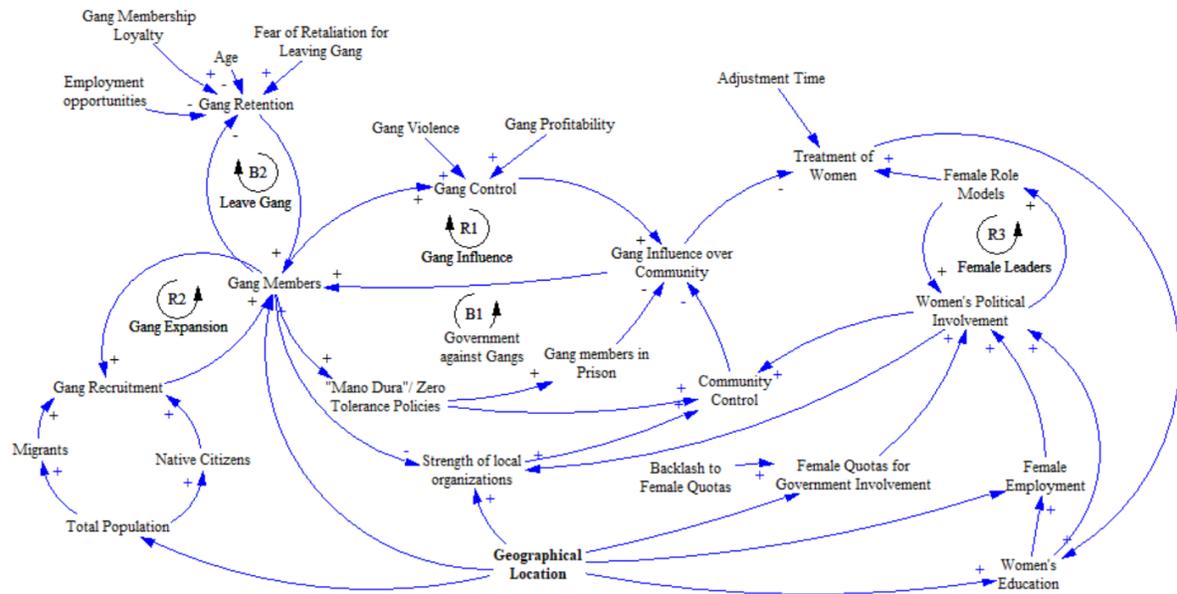


Figure 3. CLD depicting gangs influence which is impacted by women’s involvement in society and government to see who holds control over a community

The CLD shown in Figure 3 illustrates the relationships between the variables used in the model and demonstrates how the variables influence others. There are five feedback loops in this CLD which include “gang influence” (R1), “gang expansion” (R2), “female leaders” (R3), “government against gangs” (B1), and “leave gang” (B2). The variables show the complexity of determining who holds the influence over a community with numerous competing variables.

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### 3.2 Stock and Flow Diagram (S&F)

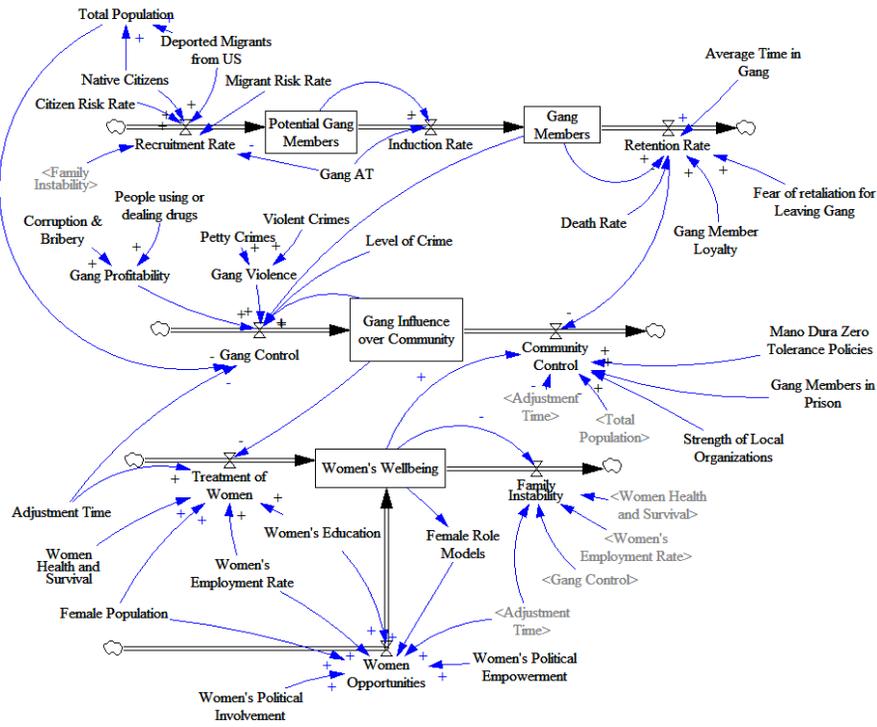


Figure 4. S&F depicting gang members lifecycle, women’s wellbeing, and how gangs influence their community

The S&F diagram shown in Figure 4 assesses the most important factors that affect gang influence over a community. The S&F diagram is formed by applying formulas to the causal loop diagram.

### 3.3 Explanation of Dynamic Hypothesis

The S&F diagram illustrates how the gang’s influence depends on who holds the control in the community- the community or the gang. The model assumes that the gang control increases with the number of gang members involved in the gang, their profits derived from their criminal and drug-related activities, and their use of violence. Community control stems from the strength of local organizations to provide social and/or security services for the community and the Zero Tolerance policies created by governments to control the gangs.

Gang members are influenced by governmental policies by being subject to different levels of scrutiny enforced by the police. If a government has a policy of “Mano Dura”/ Zero Tolerance, then more gang members will go to prison because there is no acceptance of gang members conducting gang-related activities in that community (Applebaum et al., 2018). This balances the total number of gang members because the gang members in prison are removed from actively participating in society.

A woman’s wellbeing affects her family and her community. Women’s involvement in local organizations strengthen a community’s sense of identity and resilience against gang oppression. When gangs are in control, however, women are generally treated poorly and expected to not pursue education or employment in favor of supporting the gang’s members and way of life (Applebaum & Mawby, 2018). This maltreatment creates less opportunities for women to become involved politically, so they are unable to fight for rights to go to school, be employed, or become involved in local organizations that would strengthen the community.

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#### 4. Simulation Model

The formulas used in the S&F diagram are what drive the model simulation. Equations for functions in the S&F diagram that break down the two most important variables and describe how they are used in the model are shown in Table 1. Women’s wellbeing determines how many women are treated with respect and given opportunities at any given time (calculated using female role models, women’s political involvement and empowerment, women’s education, and women’s employment rate) minus the rate of family instability (Godoy, 2020; “Health Status of the Population,” 2017). Gang control is measured as a rate to show the number of community members that are controlled by the gang over time. The number of gang members and gang influence over community are measured in people that are part of or controlled by the gang. Gang violence is measured by crime rates, gang profitability by corruption, bribe, and drug rates, and level of crime by the overall crime rates per country (“Crime Rates”, n.d.). All rates are then multiplied by the adjustment time and divided by the total people controlled by the gang.

Table 1. Descriptions of and Relationships between Key Study Variables

Name	Description	Equation	Unit
Women’s Wellbeing	Number of women treated fairly and given opportunities without family instability	$Women's\ Wellbeing = Treatment\ of\ Women + Women's\ Opportunities - Family\ Instability$	People
Gang Control	The rate at which community members become controlled by the gang	$Gang\ Control = \frac{Gang\ Members + Gang\ Influence\ over\ Community}{((1 - Gang\ Violence) * (1 - Gang\ Profitability) * (1 - Level\ of\ Crime) * (Adjustment\ Time))}$	People/Year

A unique aspect of the model is that it has the capability of running independently for each country. The five Central American nations each have their own initial values for gang members, crime, women’s education, and other variables that decide which organization will exert the greatest influence over the community (gang or community control).

#### 5. Testing

Figure 5 illustrates the variability of the model, both by changing the rates and changing the country being analyzed. The variables that may be changed are shown with a slider bar. The variables in blue boxes rely on lookup functions, pulling data from each country depending on which number the “country” slider shows.

Certain variables in the model may be changed to test the effects of how the variables impact the simulation results at different levels. The variables, all rates, include the strength of local organizations, migrant risk rate, adjustment times, zero tolerance policies, gang member loyalty, and fear of retaliation for leaving the gang. Adjusting these rates, illustrates that a shorter adjustment time allows for greater community control and that more zero tolerance policies and local organizations also add to the power held by community leaders regardless of the country that is being tested. Although each country started with its own distinct total population, gang members, and women’s rights, each country still illustrated that regardless of the gang’s initial size, it has the potential to decrease in control. The difference between countries was how long the gang’s demise took.

Because 20 of the 30 variables in the model are lookup functions that pull data from the respective country selection, they are not able to be manipulated as they would be if there was only one constant rate for each of the five countries. For example, strength of local organizations is held constant at 0.25, but women’s employment and education vary by country. This means that as local organizations get stronger, you can see community control grow, but as more women get educated, their individual rates would need to change by country in the lookup table (they may not be changed through an adjustment of the variables in the simulation). Additional research will focus on the changing effects of the treatment of women and women’s opportunities as the variables affecting the two rates are adjusted.

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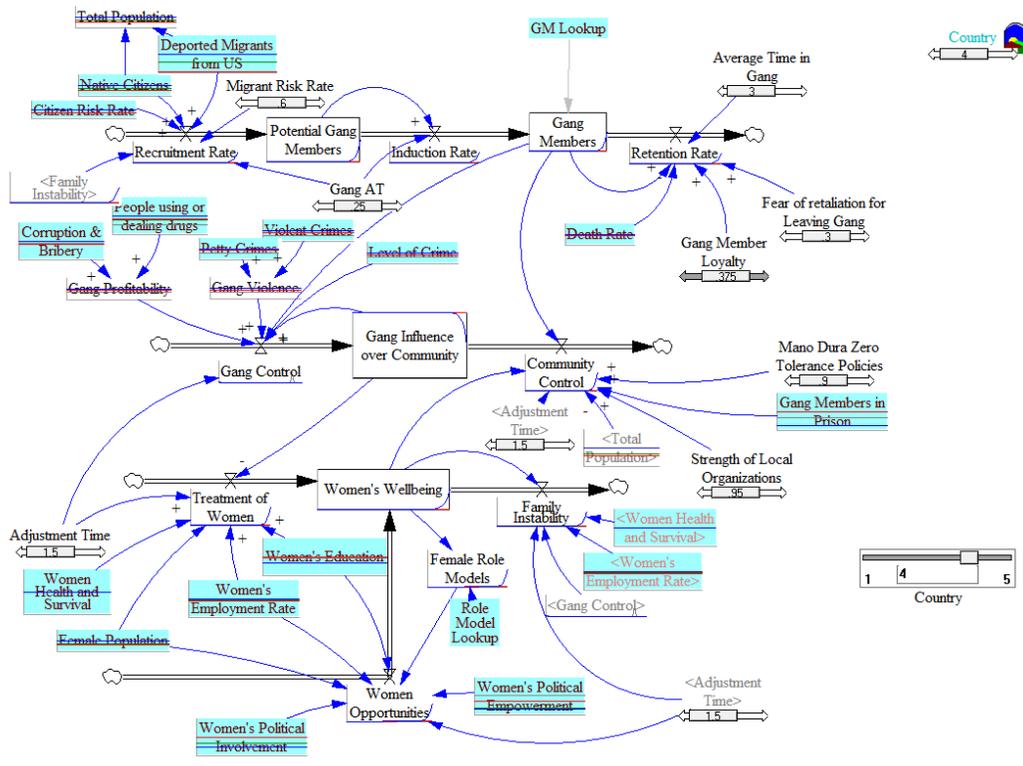


Figure 5. S&F depicting changeable variables, an area for future research and adjustment

### 6. Policy Design and Evaluation

Community control will increase by enforcing zero-tolerance policies used by police, providing resources to help its citizens combat gang influence by having greater protective measures to ensure their safety, and incentivizing local businesses to invest in gang prevention, intervention, and rehabilitation programs. The process of increasing women’s wellbeing, as shown in Figure 6, takes a considerable amount of time because of the support and resources required to better the treatment of women and increase the opportunities for women. By promoting the positive influence of women’s education, employment, and the family stability that comes with women’s involvement in society, communities will grow stronger as well.

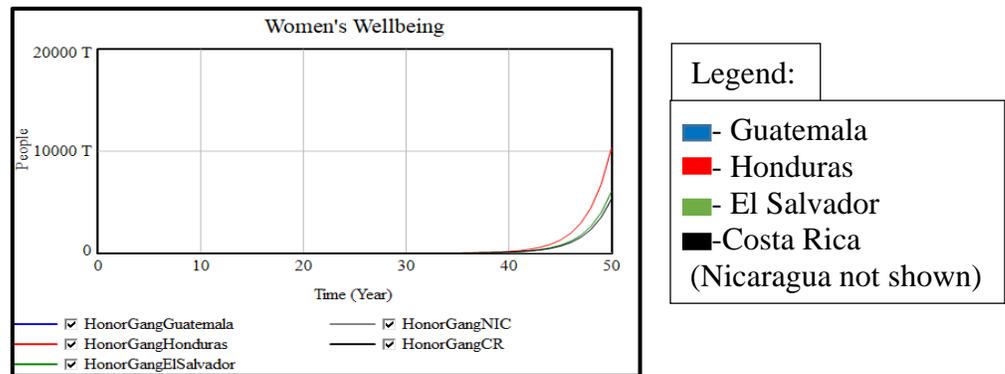


Figure 6. Women’s Wellbeing when measured across Central America in relation to gang control.

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This simulation model illustrates which country would be most successful in curbing gang control and increasing women's wellbeing as compared to the other countries in the region of Central America. All countries were run as case studies against each other to see how the region reacted to changes in the system and to show macro trends in policies across the region. Future work on this model would be to isolate one country to see which variables affect it the most based off government policies and changes specific to a country or region. Other ways to expand this model would be to add time steps, delays, and/or different lengths of time that show the growth in variables like women's education and employment.

## 7. Conclusion

This research provides Central American governments with a framework to better understand gang related conflict, the control gangs hold over communities, and how gang control may decrease by supporting the wellbeing of women in their communities. It is essential to start implementing policy changes now that will reduce the power of gangs because, as shown in the models resulting from this report, it will take more than forty years to see a difference. Change will require increasing community involvement, investing in women's futures, and working with local law enforcement to hold gangs accountable for their actions. Specific steps that Central American governments can take are implementing quotas requiring female representation in government positions, run a national advertisement campaign that highlights female role models in the country's past or present, such as past presidents or members of parliament, and providing job fairs specifically for women. Fostering the education, employment, and representation of women in Central America will increase the stability of families, strengthen communities, and decrease gang influence.

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