The Relationship between the Colombian 2016 Peace Accords, Agricultural Production, Quality of Life, and Education

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Introduction

Colombia and the United States have been intertwined since the independence of Colombia in 1822 (Bureau of Western Hemisphere Affairs, 2022). In 2012, the U.S.-Colombia Trade Promotion Agreement (CPTA) was signed to support environmental and social economic growth in both countries (Bureau of Western Hemisphere Affairs, 2022). The U.S. remains Colombia's largest trade partner while the U.S. government has provided $1 billion following the Colombia and Revolutionary Armed Forces of Colombia (FARC) 2016 Peace Accords (Bureau of Western Hemisphere Affairs, 2022). The Colombian government has focused on rural development and agriculture in their post-conflict environment (Jimenez et al., 2021). The focus of the Colombian government and the support of the U.S. government falls in line with AAAE National Research Agenda Priorities: *Vibrant, Resilient Communities* and *Addressing Complex Problems* (Roberts et al., 2016). As a part of Colombian government programs many farmers are being encouraged to switch to legal crops such as bananas, coffee, and cacao (Carvajal-Garcia et al., 2019; Castro-Nunez et al., 2020; Graser et al., 2020). The importance of building communities and rural development in one of the major trade partners of the United States is vital to maintaining quality of life in the United States and abroad. Therefore, the objectives of this research were to (1) determine if the years after certification of the 2016 Peace Accords with the FARC can significantly predict agricultural production in the country and (2) determine if there is a significant relationship between the enacting of the rural development programs, national quality of life, and educational enrollment. These objectives can provide guidance on the possible impact of these new policies on the Colombian people.

Theoretical Framework

This research was guided by Social Innovation Theory (Nicholls et al., 2015) and Rogers' (2003) Consequences of Innovation. Social Innovation Theory (Nicholls et al., 2015) identifies three different levels of innovation (incremental, institutional, and disruptive). These three levels consider different means on innovation: products, markets, and politics (Nicholls et al., 2015). By looking at variables across the three levels (agricultural products, year and regions, quality of life and national enrollment), this research aims to look at the relationships between these levels of innovation following the 2016 Peace Accords. Social Innovation Theory requires the need of the public sector, private sector, and civil society to work to promote social innovation (Nicholls et al., 2015). There is a constant need to look at the innovation and decide if its consequences are desired, intended, and anticipated (Rogers, 2003). By looking at data points across the three levels of social innovation, the relationships among them can illuminate the possible impacts of the 2016 Peace Accords.

Methodology

This study used data from the National Administrative Department of Statistics (DANE) of Colombia. This data is collected by DANE to strengthen communication between the public and private sector, set government priorities, and allow for the monitoring and evaluation of government endeavors (DANE, n.d.). The data sets used were the 2017-2020 Formal Education survey enrollment educational levels by sector, grade, and sex; the 2017-2020 National Quality

of Life Survey satisfaction with life in general, health, security, work, and income; and the 2012-2019 National Agricultural Survey.

For objective one, *SPSS Version 26* was used to perform a multiple linear regression with the year, region (Andina = 1, Caribe = 2, Pacifica = 3, Orinoquia = 4, Amazonia = 5), and product type (beans = 1, corn = 2, banana = 3, cacao = 4, coffee = 5) as the independent variables and national agricultural production (tons) for beans, corn, cacao, coffee, and bananas as the dependent variable. For objective two, a Pearson's *r* correlation was run with the variables of enrollment, year, quality of life average (Likert scale 1-10, 1 = not satisfied and 10 = most satisfied). For both objectives, *a priori* was set at $p < .05$.

Results

For objective one, a multiple linear regression was used to test if year, region, and product type significantly predicted agricultural production. The overall regression was statistically significant ($R^2 = .22$, $F(3, 171) = 15.72$, $p < .001$). The regression equation was:

Agricultural Production = 8197.17 (year) – 57290.93 (region) + 18781.03 (product)

It was found that year did not significantly predict production, while region ($\beta = -57290.93$, $p < .001$) and product ($\beta = 18781.03$, $p = .038$) did significantly predict agricultural production.

For objective two, there was a significant relationship between year and quality of life ($r = -1.00$, $p = .012$). There was also a significant relationship between income satisfaction and health satisfaction ($r = .998$, $p = .044$). There was no significant relationship between quality of life and educational enrollment.

Discussion and Implications

Since the certification of the 2016 Peace Accords, agricultural production was not affected as time went on, however, certain goods and where they are produced have fluctuated. Since the coefficient of crop is positive this is good despite the lack of significance. The lack of significance could be to the limited data available for certain years. The negative relationship and statistical significance of region could mean that while there are efforts to increase legal crop production in the more rural regions (Pacifica and Amazonia), infrastructure and other support are not reaching these regions. The positive relationship and significance of product could indicate that rural farmers in different regions of Columbia are planting more legal crops (bananas, cacao, coffee, beans, and corn). This can directly affect the supply of these crops which in turn can increase their exports and increase their net income. These results suggest that both practice and policy should aim to reach the most rural regions; this could increase overall agriculture production and provide more opportunities for rural development and trade.

Based on the collected data, the overall quality of life has decreased since 2016 Peace Accords. This is slightly surprising, however, since there was no data collected by DANE prior to 2016 on overall quality of life, further research should target citizens retrospective quality of life. There was also a positive relationship between income and health satisfaction. This relationship was also found in Frijters et al. (2005) but does not reflect a low-income low-health satisfaction found in Deaton (2008). Therefore, further research should be done to look at the difference between income and income satisfaction on health and well-being. National enrollment was not significant for any of the factors, including year. The social innovation of the 2016 Peace Accords may be seen more clearly in other realms of daily life rather than in aggregate information.

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