Venezuela's Socio-Political Dynamics: Rethinking Oil Dependency for Economic Resilience

A Research Paper submitted to the Department of Engineering and Society

Presented to the Faculty of the School of Engineering and Applied Science University of Virginia • Charlottesville, Virginia

> In Partial Fulfillment of the Requirements for the Degree Bachelor of Science, School of Engineering

> > Isabella Felaco

Spring 2024

On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

Advisor

William J Davis, Department of Engineering and Society

Introduction

For the last decade, Venezuela has endured profound crises encompassing economic collapse, political turmoil, and deteriorating public health. The magnitude of these challenges is starkly evident by a surge in emigration (Buschschlüter, 2024), escalating incidences of preventable diseases (Schreiber, 2019), and persistent political instability marked by attempted coups. Against this backdrop, urgent intervention is imperative to address the plight of this South American nation.

The start of Venezuela's current predicament can be traced back to the crash of the oil industry in the 2010s, which precipitated a cascade of economic hardships. Consumer prices rose by more than 50% per month starting November 2017, and poverty rates doubled (Pérez, 2019). Concurrently, anti-government demonstrations surged, met with forceful police responses, and emigration soared, with an estimated 7.5 million people having departed since 2015 (Buschschlüter, 2024).

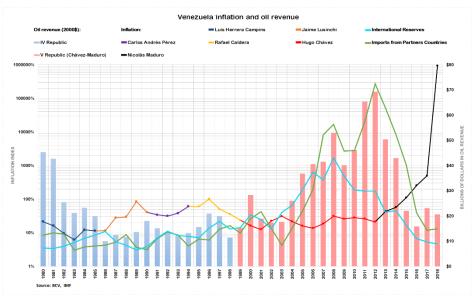


Figure 1: Venezuelan Economy Throughout Presidencies

Consequently, the oil price decline rendered Venezuela incapable of sustaining its extensive food imports and triggered a severe food crisis exacerbated by a lack of public health

data (Human Rights Watch, 2019). However, certain trends can be seen from a report released in 2017, such as a 1050% increase in malaria cases since 2009 and a resurgence of measles and diphtheria (Schreiber, 2019). Notably, much of the country's emigration has been due to citizens seeking medical care, with about a tenth of the population emigrating in recent years for this reason (Schreiber, 2019). All of these factors are deeming of a health crisis, which makes the situation that much more dire.

To chart a path forward, it is imperative to reflect on the historical factors that led here. How did Venezuela get to this point? How do we prevent history from repeating itself? Amidst a tumultuous government that overturns itself frequently, there is one institution that has remained deeply engrained in the country: the oil industry. While independent political decisions certainly led to the current volatile state of the country, the oil industry has long played a role in the political, social, and economic landscapes of the country. <u>Venezuela's oil industry has</u> <u>precipitated current events.</u> As such, the institution's impact must be analyzed in the context of the Sociotechnological System Theory in order to devise a solution to the plethora of issues faced.

Literature Review

The politics of Venezuela have held a close link to the oil industry (Rosales & Sánchez, 2020, pp. 645-6). The two serve as the social portion and the technical portion, respectively, of the sociotechnical system and must be analyzed in tandem. The analysis of Venezuela's political history sheds light onto how the oil industry has impacted society. Venezuela is a clear example of a "petrostate," which can be defined as a country where "the government is highly dependent on fossil fuel income, power is concentrated, and corruption is widespread" (Cheatham & Roy, 2023). An overview of the country's political history highlights the prevalence of dictatorships

and autocracy, which can be traced back to implications of the oil industry and charts the course for the current predicament.

Political History in Context

With more than 20 constitutions having been drafted since its founding in 1811 (Manwaring, 2005, p. 3), Venezuela retains a long and tumultuous history of autocratic and dictatorial governments. When the originally established republic fell, military leader Simon Bolivar faulted it for being too weak (Núñez M. & Pérez-Perdomo, 2022, p. 282), which resulted in later constitutions validating the power of *caudillos*, the political and military leaders of the time. In the early 20th century, once the *caudillos* united under Cipriano Castro in an autocracy, scholars and political analysts debated whether this represented the best form of government. Some defended the current regime and argued the need for a strong central government to provide order while others condemned dictatorship and called it barbaric. This disagreement cumulated in several more political coups which later culminated in a military governmentturned-dictatorship led by Perez Jiminez from 1952 to 1957.

Even when a democracy was re-established with the Punto Fijo Pact in 1958, the government did not favor limited state power and civil liberties but behaved authoritarian in nature and expected individuals to sacrifice personal freedoms in order for the government to secure the will of the people as a whole; a poignant ideology inspired by the French Revolution. As a result, the government became oligarchical and again controlled by modern pseudo*caudillos*. While the complaints with the democratic system more directly led to the political crisis of the 1990s (Núñez M. & Pérez-Perdomo, 2022, p. 285), Venezuela's history of teetering along the fine line between authoritarianism and militaristic rule has generated current corruption in Venezuelan politics. Citizens fall for populism instead of trusting the government and political leaders make empty promises, including giving government subsidized food handouts during a food crisis (Hammond, 2023, p. 207), with the aim of gaining more power (Manwaring, 2005, pp. 3-4). The recent presidencies of Hugo Chávez, a military leader who staged several political coups in 1992, and his successor Nicolas Maduro, are no exception.

Modern Politics

During his presidency, President Hugo Chávez not only ratified a new Constitution that eliminated checks and balances, minimized separation of powers, and degraded the Supreme Court (Hammon, 2023, p. 207), further increasing corruption in government, but he also altered the oil industry's legal framework, marking a significant turning point in Venezuela's history. His policies included redirecting a larger share of oil revenues toward social programs, with the goal of alleviating poverty and reducing income equality. Political scientists refer to this as the "rentier effect," where governments relieve social problems via oil revenues for the purpose of diverting attention from the government (Ross, 2001, p. 332). While these initiatives lowered poverty rates for a few years, the national oil company, PdVSA, failed to reinvest in technology upgrades due to the redirection of funds and political figures' desire to remain in power (Aslaksen & Torvik, 2006, p. 572). This failure to reinvest deteriorated the oil industry and contributed to the economic collapse of 2013 (Rosales & Sanchez, 2020, pp. 653-4).

In 2013, Nicolas Maduro and the United Socialist Party gained control of the presidency following the untimely death of his predecessor, Hugo Chávez. Since then, Maduro has led a particularly unpopular government with Venezuelans referring to him as a dictator and lodging complaints that he is purposefully postponing elections and attempting to rewrite the constitution to stay in power (Casey, 2017). Furthermore, at the time came of Maduro's reelection in 2019, reportedly only 46% of citizens voted, and rumors spread of opposing candidates fleeing the

country in fear of imprisonment (Hammond, 2023, p. 208). The National Assembly even refused to recognize the reelection and opposition leader Juan Guaidó declared himself interim president on the grounds that the election was rigged (Specia, 2019). This has been a catalyst for years of ongoing political instability and demonstrates the need for intervention.

Connection Between Politics and Oil

Political scientist Michael Ross has found that there is a tie between oil wealth and dictatorship and that oil "impedes" democracy (Ross, 2001, p. 325). He provides three causal mechanisms that contribute to the alleged link between oil exports and authoritarian rule: the "rentier effect," the "repression effect," and the "modernization effect." The rentier effect resides in the context of Chávez's and Maduro's presidencies as a strategy for lowering the accountability of the government. There are three main components of the rentier effect, with the first being the "taxation effect," where the government redirects money from oil revenues to lower taxes and therefore lessen the demand for representation and accountability (Ross, 2001, p. 332). This is founded in the theory that there is a correlation between taxation and desire for representation in many cases (Crystal, 1990). The next component is the "spending effect" which entails spending from large and unconstrained government budgets from oil wealth to reduce dissent (Ross, 2001, pp. 333-4). Lastly, the "group formation effect" consists of the government using its wealth to block the formation of independent social groups to undermine democracy (Ross, 2001, p. 334). Together, these components constitute the rentier effect and support the claim that "governments that fund themselves through oil revenues and have larger budgets are more likely to be authoritarian" (Ross, 2001, p. 335).

The "repression effect" defines resource-rich states' action to invest in internal security to repress the population and further quell democratic aspirations (Ross, 2001, p. 335). As Maduro

has maintained control of the military (Hamond, 2023, p. 210), he has been able to use it to remain in power and silence those that question the legitimacy of his presidency. Lastly, the modernization theory posits that economic development fuels social and cultural changes, which in turn promote democracy. As such, the corollary can be assumed: if economic developments do not produce these changes, then democratization will not occur (Ross, 2001, p. 336). It can be argued that a lack of economic development in the oil sector has hindered social changes and thus democracy in Venezuela.

Oil Dependence in Venezuela

Venezuela's profound oil dependence traces back to the early 20th century when President Gomez allowed foreign oil companies into the country. This pivotal moment catalyzed an enduring socio-economic rift, pitting those benefiting from oil against those that were displaced or marginalized by extraction activities (Rosales & Sánchez, 2020, p. 645). Since then, the rentier model has deepened Venezuela's dependence on the oil industry. A "rentier state" is a state that receives substantial rents from foreign actors (Ross, 2001, p. 329). In the case of Venezuela, the rents to the government are from foreign oil companies. The rentier model causes Venezuela to become even more dependent on the oil industry as most of the government's budget relies on oil revenues, with an estimated two-thirds of the government's budget coming from oil exports in 2023 (Armas, 2022).

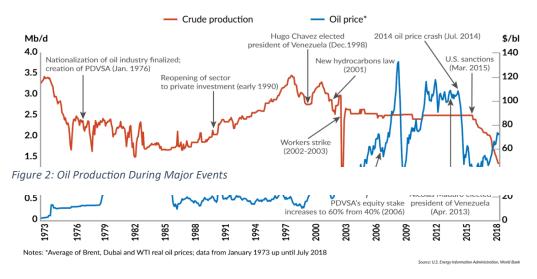
Due to Venezuela's economy's heavy reliance on oil exports, which currently make up approximately 90% of its GDP (Hammond, 2023, p. 211), it is also extremely vulnerable to fluctuations in global oil prices. Policies, such as the Organic Hydrocarbons Law (Ellner, 2009, p. 113), and a lack of technical expertise due to a mass firing of PdVSA employees in 2003 declined Venezuela's oil production (Rosales & Sanchez, 2020, p. 653). Additionally, in response

to the country's increasing fiscal deficit (Rosalez & Sanchez, 2020, p. 654) and the corruption of the political institution (Hammond, 2023, p. 206), capital markets stopped lending money. As a result, when oil prices decreased in 2014, the country faced a myriad of economic challenges, including inflation, fiscal deficits, and shortages of essential goods, which significantly impacted the socio-economic fabric and stability.

Research Approach

Amid ongoing discussions surrounding technological determinism, where some argue that technology alone does not exclusively drive societal transformations (Wyatt, 2008), it remains indisputable that technology wields a significant influence on society. The question regarding Venezuela follows: How could policy reform regarding Venezuela's oil industry provide positive societal impacts?

My analytical approach is grounded in the Sociotechnical Systems Theory, which posits that technological systems are intricately linked with societal structures and must evolve in tandem with societal changes (Appelbaum, 1997, p. 456). Technological systems are regarded as "socially constructed and society shaping" and include physical artifacts as well as organizations



and both scientific and legislative components (Hughes, 1987, p. 51). Venezuela's oil industry is a clear example of such a technological system, as it involves not only technology but politics, economics, and social implications. Furthermore, the symbiotic relationship within this organization (Cooper & Foster, 1971, p. 467) involves the political institution, which has had an ongoing entanglement with the industry. As such, this framework provides a holistic lens through which to examine the evolution of Venezuela's oil industry, considering both technological advancements and socio-economic dynamics.

My analysis encompasses a range of evidence related to Venezuela's oil industry, including historical data, industry reports, academic studies, and socio-economic indicators. I examine the trajectory of the oil industry from its inception to the present day, considering technological innovations, policy decisions, market dynamics, and societal impacts. The first step in my analysis consisted of historical review. I began by conducting a comprehensive review of historical literature to understand the interdependence of Venezuela's oil industry and its political institution. This includes examining key milestones and policy interventions that have shaped the industry's development.

Next, I gathered quantitative data on oil production, exports, revenues, and investments, as well as qualitative data on regulatory frameworks, political dynamics, and socio-economic indicators. This provided a nuanced understanding of the industry's evolution. Employing qualitative and quantitative analysis techniques, I identified patterns and trends within the data, discerning how technological advancements and societal changes have influenced the trajectory of the oil industry. For instance, the passing of the hydrocarbons law in 2001 and the workers strike from 2002 to 2003 caused a sharp decrease in crude oil production.

Lastly, I delved into the causal relationships between technological innovations, policy decisions, and societal dynamics, exploring how shifts in global energy markets and political instability have impacted Venezuela's oil sector. From this, I found a link between oil wealth and authoritarianism, and that this wealth can encourage political decisions that impact broader social patterns.

The Sociotechnical Systems Theory provides a robust framework for understanding the evolution of Venezuela's oil industry, as it acknowledges the interdependence between technological systems and societal structures. By examining the industry through this lens, I can elucidate how technological advancements, regulatory frameworks, and socio-economic factors have shaped its trajectory over time.

The evidence synthesized through my analytical approach offers valuable insights into the complex dynamics of Venezuela's oil industry. By integrating historical analysis with contemporary data, we reveal the drivers and constraints influencing the industry's evolution, providing a nuanced understanding of its past, present, and future prospects. In summary, my research approach grounded in the Sociotechnical Systems Theory is instrumental to the unraveling of the intricate relationship between technology and society within Venezuela's oil industry. By synthesizing diverse sources of evidence, I aim to contribute to scholarly discourse on the socio-economic dynamics of resource-dependent economies and inform policy decisions aimed at fostering sustainable development in the oil sector.

Synthesis

Venezuela's socio-economic landscape has long been shaped by the relationship between its political institutions and the oil industry. This synthesis endeavors to critically analyze this

relationship through the framework of the Sociotechnical Systems Theory, highlighting the cyclical nature of influence between political decisions and oil market dynamics. Moreover, it emphasizes the urgent necessity for Venezuela to transition away from its heavy dependence on oil, particularly in light of recent crises directly linked to the industry.

The Sociotechnical Systems Theory posits that complex interactions between social and technical elements drive systemic change. In Venezuela, this theory manifests through a symbiotic relationship between political entities and the oil industry, wherein political forces guide oil sector policies, while fluctuations within the oil market in turn influence political narratives. Further synthesis reveals a pivotal understanding: the current crisis in Venezuela can be attributed to the country's disproportionate dependence on oil. This conclusion emerges not only from the theory that oil wealth is linked to authoritarianism, but through the Sociotechnical Systems Theory which reframes this reliance as a systemic vulnerability.

Based on the presented evidence, there is a clear correlation between Venezuela's oil wealth, its political landscape, and the resulting societal impacts. Firstly, it has been shown that authoritarianism manifests from oil wealth in several ways. The rentier effect elucidates the motivation behind many political decisions. The spending effect exposes the redirection of oil revenues towards social programs as not wholly altruistic, but to distract the public from the controversies of the current regime. The taxation effect accounts for the stark dip in the tax rate around 2010 when President Chávez was trying to pass self-serving legislation. Additionally, the repression effect explains how President Maduro has held his position via military force, despite strong opposition from domestic and foreign actors. And finally, the modernization effect shows how the stagnancy of the oil industry has hindered the growth of democracy and led to an authoritarian state.

Next, we see that these decisions that appear to be positive were actually harmful in the long run. Ultimately, the redirection of funds caused oil production to deteriorate. As such, investors stopped lending money, and when oil prices eventually dropped in 2014, Venezuela suffered a massive economic downturn. This economic downturn has caused a myriad of problems, including both food and health crises. All of this is on top of an already volatile social landscape, with the president using police and military force to suppress outrage over his illegitimate reelection. The recent turbulence in Venezuela, particularly under the presidencies of Chávez and Maduro, serves as empirical evidence validating this hypothesis.

Scholars such as Rosales and Sanchez (2020) argue that it is "impossible to abandon the oildevelopment model." However, the need for diversification is substantiated in claims that technologies need to evolve in order to remain viable (Appelbaum, 1997, p. 452), and Venezuela's institution has not. The technology is outdated and policymakers are largely uninformed on the intricacies of the industry. As the country is currently in severe debt and facing sanctions from many foreign countries, it is not my recommendation that the country invests more money in the oil sector. Instead, there is a need to diversify the economy through increased exports in order to sustain the country's many imports. Doing so will not only reduce the country's reliance on oil, thus making them less susceptible to the current predicament, but it may also help promote democracy. As political decisions shaped the trajectory of the oil industry, subsequent repercussions – including economic downturns and social unrest – have underscored the need for economic diversification.

The culmination of this synthesis is a compelling call to action. By advocating for economic diversification away from oil, the argument transcends a mere diagnosis of systemic issues to a offer a pragmatic solution rooted in theoretical insights. This contribution represents a critical

perspective shift, transitioning from retrospective analysis to a proactive recommendation. It underscores the transformative power of theory in illuminating the path forward, urging policymakers and stakeholders to recalibrate Venezuela's economic trajectory towards sustainability and resilience beyond oil-centric paradigms. This has been demonstrated throughout the country's history and in recent years with the presidencies of Chávez and Maduro. As recent events involving the oil industry have led to a country in crisis, it can be concluded that Venezuela needs to diversify its economy and lessen its dependence on the oil industry in order to survive.

Conclusion

In conclusion, this paper has critically analyzed the interplay between Venezuela's political institutions and its oil industry, as analyzed through the Sociotechnical Systems Theory. The core claim elucidates a reciprocal relationship where political decisions impact the oil sector, which in turn shapes broader political and economic landscapes. This analysis is substantiated by historical and recent examples, particularly under presidencies of Chávez and Maduro, showcasing how the oil industry's fluctuations have catalyzed crises within Venezuela.

The implications of this argument are profound. By recognizing the systemic dependency on oil as a primary driver of instability, the paper underscores the urgent need for economic diversification. This shift is not merely a theoretical recommendation but a pragmatic imperative for Venezuela's sustainable development. Diversifying the economy away from oil can mitigate vulnerability to global oil market fluctuations, enhance economic resilience, and promote inclusive growth.

However, this recommendation is not without limitations. Implementing economic diversification requires comprehensive policy reforms, institutional capacity-building, and strategic investments, which can be challenging amid political instability and economic crises. Moreover, transitioning away from oil must be managed carefully to avoid abrupt disruptions in livelihoods and social welfare tied to the industry.

Moving forward, stakeholders must heed the lessons learned from Venezuela's tumultuous history with oil, embracing a diversified economic landscape that prioritizes resilience and inclusive growth. By recalibrating economic trajectories beyond oil-centric paradigms, Venezuela can forge a path towards sustainable development, economic stability, and enhanced societal well-being.

References

- Appelbaum, S. H. (1997). Sociotechnical systems theory: An intervention strategy for organizational development. *Management Decision*, 35(6), 452-463. https://doi.org/10.1108/00251749710178279
- Armas, M. (2022, December 5). Venezuela Sees Oil Exports Financing Almost Two-Thirds of 2023 Budget. Reuters. https://www.reuters.com/world/americas/venezuela-sees-oilexports-financing-almost-two-thirds-2023-budget-2022-12-05/
- Aslaksen, S. & Torvik, R. (2006). A Theory of Civil Conflict and Democracy in Rentier States. *The Scandinavian Journal of Economics*, 108(4), 571–585. http://www.jstor.org/stable/4121594
- Buschschlüter, V. (2024, January 31). *Venezuela Crisis In Brief*. BBC. https://www.bbc.com/news/world-latin-america-48121148
- Casey, N. (2017, May 1). Nicolás Maduro, Venezuela President, Calls for a Rewrite of the Constitution. New York Times. https://www.nytimes.com/2017/05/01/world/americas/venezuela-nicolas-maduroconstitution.html?smid=url-share
- Cheatham, A. & Roy, D. (2023, December 22). *Venezuela: The Rise and Fall of Petrostate*. Council On Foreign Relations. https://www.cfr.org/backgrounder/venezuela-crisis
- Cooper, R., & Foster, M. (1971). Sociotechnical systems. *American Psychologist*, 26(5), 467–474. https://doi.org/10.1037/h0031539
- Crystal, J. (1990). Oil and Politics in the Gulf: Rulers and Merchants in Kuwait and Qatar. Cambridge University Press.

Ellner, S. (2008). *Rethinking Venezuelan Politics: Class, Conflict, and the Chávez Phenomenon*. Boulder, Colo: Lynne Rienner.

Hammond, S. (2023). How Can Oil End the Venezuelan Presidential Crisis? *Tulane Journal of International & Comparative Law*, 31(1), 205–233. https://web-s-ebscohost-com.proxy1.library.virginia.edu/ehost/pdfviewer/pdfviewer?vid=7&sid=d3ea86e2-9ece-482e-8f8d-730652ad70b3%40redis

Hughes, Thomas P. (1987). "The Evolution of Large Technological Systems". In W. E. Bijker, T.
P. Hughes, & T. Pinch (Eds.), *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (pp. 51-82). MIT Press.

Human Rights Watch. (2009, April 4). Venezuela's Humanitarian Emergency: Large-Scale UN Response Needed to Address Health and Food Crises. Human Rights Watch. https://www.hrw.org/report/2019/04/04/venezuelas-humanitarian-emergency/large-scaleun-response-needed-address-health

- Lasala Calleja, P., García Marco, F.J., & Galindo Ayuda, F. (2009). *Electronic Government*. Prensas Universitarias de Zaragoza. https://www-digitaliapublishingcom.proxy1.library.virginia.edu/a/34534
- Manwaring, M. G., & Army War College (U.S.) (2005). Venezuela's Hugo Chávez, Bolivarian Socialism, and Asymmetric Warfare. Carlisle, PA: Strategic Studies Institute, U.S. Army War College.
- Núñez M., A. C., & Pérez-Perdomo, R. (2022). Constitutional Law in Venezuela. In C. H. Mendes, R. Gargarella, & S. Guidi (Eds.), *The Oxford Handbook of Constitutional Law*

in Latin America (pp. 281–301). Oxford University Press; Oxford Academics Press. https://doi-org.proxy1.library.virginia.edu/10.1093/oxfordhb/9780198786900.013.14

- Pérez, S. (2019, March 25). Venezuela's Economic Collapse Explained in Nine Charts. The Wall Street Journal. https://www.wsj.com/articles/venezuelas-economic-collapse-explained-innine-charts-11553511601
- Rosales, A. & Sánchez, M. (2020). The Energy Politics of Venezuela. In K. J. Hancock & J. E. Allison (Eds.), *The Oxford Handbook of Energy Politics* (pp. 644–662). Oxford University Press. https://doi-org.proxy1.library.virginia.edu/10.1093/oxfordhb /9780190861360.013.30
- Ross, M. L. (2001). Does Oil Hinder Democracy? *World Politics*, 53(3), 325–361. http://www.jstor.org/stable/25054153

Schreiber, M. (2019, April 5). Researchers Are Surprised By The Magnitude of Venezuela's Health Crisis. NPR. https://www.npr.org/sections/goatsandsoda/2019/04/05/709969632/researchers-aresurprised-by-the-magnitude-of-venezuelas-health-crisis

- Specia, M. (2019, May 1). Venezuela Crisis: What We Know So Far. New York Times. https://www.nytimes.com/2019/05/01/world/americas/venezuela-uprisingcrisis.html?smid=url-share
- Wyatt, S. (2008). Technological Determinism Is Dead; Long Live Technological Determinism. In
 E. J. Hackett, O. Amsterdamska, M. Lynch, & J. Wajcman (Eds.), *The Handbook of Science and Technology Studies* (pp. 165–180). The MIT Press.