

## **The Theoretical Framework of Aggregate Demand and Aggregate Supply of Truths and Public Lies in the United States**

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### **Abstract**

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*The study uses the fundamental aggregate demand (AD) and aggregate supply (AS) model to show that some political leaders in the United States, the digital information technologies (DITs), and social media platforms (SMPs) have contributed to the propagations and amplifications of public lies, which some people willfully consume, thus the noticeable increase in the consumption of public lies relative to the truths. Simply put, some political leaders – who are truths-tellers or propagators of public lies – DITs, and SMPs are the key exogenous variables that can shift the aggregate demand and aggregate supply curves of truths and public lies. The AD-AS model is used to construct a monotonically increasing truths expansion path when people prefer the truths and a monotonically decreasing public lies expansion path when people prefer public lies. In addition, a unique social welfare maximization model is utilized to underscore the assertion that the truths generate positive externalities with social welfare-enhancing outcomes while public lies generate negative externalities with social welfare-retarding outcomes. Importantly, public lies undermine personal safety and security when political leaders use public lies to target certain individuals and groups. History shows that the political process of twisting the truths and spreading public lies existed in the 20th century with adverse consequences, but in this era of DITs and SMPs, some political leaders have rediscovered that public lies are the most effective lethal weapons of democracy destruction in order to achieve political power and control. Overall, public lies will undermine public trust and national security and defense.*

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**JEL Classification:** D12, D62, I31, O30, O33, Z18

### **1. Introduction**

Studies have acknowledged that human beings, around the world, are all liars [Ekman (2022), Jones (2021), Fox (2018)], and on the positive side, people are more truthful and honest since the average person tells “white lies” once to twice daily. Studies have also shown that there are different categories of people in every country, worldwide. On the one hand, there are those people who tell little white lies with little or no consequential effects. On the other hand, there are prolific liars who tell public lies as a political strategy designed to achieve political power and control. The consensus is that everyone tells “white lies,” which can be dubbed private lies, among their family members, friends, and neighbors. There are instances when people give disingenuous compliments to friends and coworkers, tell someone they are doing well contrary to their true conditions, and tell people they are busy in order to avoid any time consuming engagement [Hammond 2018)].

In other words, human beings are liars because they tell little personal “white lies” on daily basis with no perceivable damages. The major issue is the magnitude of the political/public lies from political leaders, especially presidents, who are prolific pathological liars whose political/public lies are intended to alter the political process in order to achieve political power in countries such as the United States. According to Kessler (2020), every president lies for various reasons: to protect national interests and security, to shield the public from damaging information that can undermine sensitive missions, to cover up important crimes, for policy deceptions, and inadvertent due to sloppy staff work; and that the pace of deception has quickened exponentially since Trump.

This study contributes to the literature in some important ways by providing the conceptual frameworks, which are complementary to the studies that have examined the concept of lying from different dimensions. First, the aggregate demand and aggregate supply (AD-AS) model is used to highlight the exponential amplifications of public lies in this era of the rapid diffusion of digital information technologies (DITs) in the United States where repeated public lies resonate more through social media platforms to grab the attentions of voters. The main assertion is that the rapid diffusion of DITs, through the disruptive SMPs and political leaders with active aggressions who are pathological liars, have contributed enormously to the shifts in the aggregate demand for public lies (ADLs) and the aggregate supply of public lies (ASLs). Essentially, DITs, SMPs, and public liars political leaders (PLPLs) are the key exogenous variables in the unique ADLs-ASLs model.

Conceptually, DITs, SMPs, and PLPLs are considered as the exogenous shifters of the ADLs and ASLs curves thus leading to the sacrifice in honesty-decency-integrity-dignity as people consume public lies in different social media platforms. In contrast, DITs, SMPs, and TTPLs have minimal or no perceived impact on the aggregate demand for truths (ADTs) and aggregate supply of truths (ASTs) because people rarely pay close attention to what they believe to be the truths told. Simply put, pathological PLPLs are more active in spreading public lies than the passive ethics abiding TTPLs in this era of rapid diffusion of DITs and disruptive SMPs. In the process, the pathological PLPLs have managed to socialize and normalize public lies, thus public lies resonate much louder than the truths because the pathological PLPLs have abundant access to DITs and SMPs required to spread public lies for political power. What is unique about the AD-AS model used in this study is that both the ADTs and ASTs curves slope upward to emphasize that the demanders and the suppliers of the truths cherish honesty-decency-integrity-dignity because they are lies averse. On the contrary, both the ADLs and ASLs curves slope downward to illustrate that the demanders and suppliers of public lies will sacrifice honesty-decency-integrity-dignity for their political goals of achieving political power and control. Sandhu (1997) underscore the significance of honesty, dignity, decency, and integrity in fostering global peace.

Second, this study uses the concept of welfare economics to underscore the externalities associated with the aggregate consumptions of truths and the public lies. Based on economic theory, truths and public lies are considered as two socio-cultural-political *public goods* consumed collectively in every society. For clarity, a public good is nonrival and nonexcludable, which implies that each member of society gains satisfaction from the total output and consumption, and no one can prevent others from consuming the public good. Applying the definition of public good to the aggregate consumptions of truths and public lies within the concept welfare economics, the central assertion is that truths generate positive externalities, which can be *social welfare-enhancing* in achieving personal safety and security thus solidifying national security. In contrast, public lies generate negative externalities, which can be *social welfare-retarding*, and thus corrosive to the economic and socio-political environments.

Given the social welfare implications that truths can be *social welfare-enhancing* while public lies can be *social welfare-retarding* in terms of public health care outcomes, this study uses the presidential leaderships of Obama and Trump as good illustrative examples of two political leaders with different records on telling the truths and public lies [McCarthy 2017]. One of these two leaders can be classified as transparent and truths-telling political leader (TTPL) while the other is a public liar political leader (PLPL). Obama’s transparency and truthfulness in handling different episodes of pandemics minimized the fatalities due to the pandemics, and thus saved lives. In contrast, Trump’s opaqueness and unsubstantiated public lies about COVID-19 pandemic caused the highest cases, massive spreads, and fatalities [Owoye and Onafowora (2022)] in the world despite the United States’ unparalleled medical infrastructures and technologies.

Third and more importantly, this study is an acknowledgment of the confluence of the rapid diffusion of DITs, disruptive SMPs, and PLPLs, especially the most mendacious presidents [Kessler (2020)] whose political philosophies are driven by destructive public lies that they can use to incite political chaos and violence at national and international levels. In addition, this study uses fundamental concepts in economics to provide a new dimension to draw the attentions of research scholars to the reality that twisting the truths and the normalizations of public lies tantamount to twisting and sacrificing honesty-decency-integrity-dignity in the United States; and this will have dire economic and socio-political consequences.

The rest of this paper is organized as follows. Section 2 provides some background studies that have addressed the importance or costs/prizes of truths and lies. Section 3 provides the conceptual framework based on the aggregate demand and aggregate supply model. Section 4 discusses the effects of truths and public lies with respect to safety and security, especially national security. Section 5 provides the discussions and conclusions with political-policy implications.

## 2. Background Studies

Over the years, researchers have conducted voluminous studies, which examined the issues of lying and prolific liars [Serota *et al.* (2021), Serota and Levine (2015)], and the consequences of telling lies. In these plethora of studies, researchers have been able to reveal the characteristics of liars in different regions of the world. For example, the Global Deception Research Team (2006), which consisted of 90 members, provided two worldwide detailed studies that covered 75 different countries in 43 different languages to highlight the stereotypes about liars. In the first study, 2,320 lifelong residents in 58 counties were required to respond to the open-ended question: “How can you tell when people are lying?” These participants provided 11,157 responses, which listed the nine different ways (avert gaze, nervous, incoherent, body movements, facial expression, inconsistent, uhs, facial color, and pauses) by which one can tell when people are lying. With respect to gaze aversion, 63.6 percent of the participants have the most common beliefs that liars avoid eye contact when in the process of telling lying. The participants also identified 10 other common ways with which one can detect liars, and among these are the noises like sighs that liars make, their tone of voice and sweating when lying, and liars play with their hair, clothes, or objects.

In the second study by the Global Deception Research Team (2006), 2,520 participants made up of 20 male and 20 female native lifelong residents of each of the 63 countries in their sample were required to complete 10 survey questionnaires designed to reveal the attributes of people when they are in the stage of telling lies. Even though the participants in the second study did not participate in the first study, 71.5 percent of the respondents in the second study have the same beliefs as those in the first study that liars avoid eye contact. This is higher than the 63.6 percent reported by the first group of participants. In addition, among the respondents of the second study, 62.5 percent worldwide believe that liars shift their posture more than usual; 64.8 percent believe that liars touch and scratch themselves; 62.2 percent think liars tell longer stories than usual; roughly 60 percent believe that liars stutter more; 58 percent believe that liars pauses are longer; 57 percent consider liars to be nervous; 52 percent believe that liars hand gestures more; 55.4 percent think liars tell stories that are inconsistent; and 44 percent judge liars to be more serious.

In another study that involved different groups, Sprigings *et al.* (2023) used three different group studies to highlight that social connections, which are fundamental to human intentions can be impeded by deceptions or lies. Basically, these three group studies are designed to show how trustworthy communications and honesty support social connections and vice versa. Study 1 consisted of 776 participants in a correlational study of video conversations in which participants were required to do self-ratings of trustworthiness and reported feelings of closeness with a conversational partner during the video conversations. Study 2 consisted of 416 participants in an experimental study of text conversations, which is colloquially referred to as ‘fast friends.’ Study 2 was designed as an experimental manipulations of closeness among strangers in a laboratory setting to highlight truth versus lie. The authors paired participants who acted as “senders” with “receivers” in their text-based conversations, and the senders were randomly asked to be as complete, open, and honest as possible, or to lie to their partner at the receiving end throughout the entire text-based conversations. In contrast, all receivers were instructed to be as complete, open, and honest as possible.

Study 3 consisted of a group of 399 participants in a dispositional tendencies in which participants were required to complete four scales – Lying in Everyday Situations Scale, General Trust Scale, the revised UCLA Loneliness Scale, and the Social Network Index Revised – in random order. From these three different study groups, Springs *et al.* (2023) found consistent evidence that people who lie tend to assume or believe that others are lying too, thus the inability to develop the needed social connections.

Also, Hu *et al.* (2012) used randomly selected 48 participants grouped into three categories: the control group, instruction group, and the training group. The goal was to examine whether a repeated lie, which is considered to be trainable, could be construed to be a truth or whether lying is more or less task demanding than telling the truth. The authors asked each group to complete a reaction time-based differentiation of deception paradigm (DPP). While those participants in instruction group were asked to repeat the same task, those participants in the training group were asked to speed up their deceptive responses before proceeding to the second attempt of DPP. Based on this experimental study, Hu *et al.* (2012) suggested that trained deception could be malleable subject to voluntary control with intention.

Other studies have also provided different dimensions with respect to the truths and lies. According to the American Counseling Association (ACA, 2019), “we live in a world where lying has become a fairly common occurrence,” and over the past two or three decades, this has compelled some fact-checking organizations to award Pinocchio’s nose to indicate the magnitude of the public lies that political leaders made. Ekman’s (2022) multidisciplinary perspectives as to why people tell lies in this era where human beings consume lies at varying degrees support the ACA’s (2019) contention that we live in a world of rapid diffusion of lies. To highlight the rapidity with which false news can spread worldwide in this era of DITs, Vosoughi *et al.* (2018) utilized a data set of 126,000 stories tweeted by 3 million people more than 4.5 million times. They classified news as true or false based on information from six independent fact-checking organizations. And they found that “falsehood diffused significantly farther, faster, deeper, and more broadly than the truth in all categories of information, and the effects were more pronounced for false political news about terrorism, natural disasters, science, urban legends or financial information.” More importantly, they indicated that false stories motivated fear, disgust, and surprise in replies, which could incite domestic and international violence whereas true stories inspired anticipation, sadness, joy, and trust.

Studies by Evangelista *et al.* (2014), Patel (2018), and the United Nations (2020) highlighted the economic impact of digital technologies in Europe using composite information communication technology (ICT) indicators to capture the access to ICTs, the capacity to use them, and the digital empowerment of individuals in key social and economic domains. The overarching argument is that mere access to ICT facilities is only a pre-condition for progress towards a digitized society, and that the level, the quality, and the conditions facilitating or hampering the use of these technologies play a much more important role. Based on multiple econometric regression models, they concluded that digitalization may enhance productivity, employment growth, and that inclusive policies may effectively bridge the gap in different parts of the European population [see Serra-Garcia (2018)].

In a related study, Bright Futures (2023) provided some key lying statistics, which highlighted five reasons for lying, six major recipients or consumers of lies and the five most vulnerable recipients of lies. The study pointed out that “politicians lie on average once every five minutes during a debate.” Notably, the study laid out four important consequences of lying. First, lying can damage trust and relationships, which a study conducted by the University of California at Santa Barbara confirmed. Second, lying can have negative effects on mental health, and that research has also confirmed that individuals who frequently lie experience more anxiety, depression, and stress than those who are more honest. Third, lying can lead to legal consequences; and according to a survey conducted by the American Management Association, 21% of respondents reported that they had been involved in a lawsuit where lying was a major contributing factor. Fourth, lying can damage one’s reputation and credibility and that the study conducted by CareerBuilder found that 58% of employers have caught an employee lying on their resume, which could lead to termination or difficulty finding future employment opportunities.

Finally, Stewart *et al.* (2019) provided a straight forward mathematical analysis designed to uncover a phenomenon, which they dubbed as information gerrymandering and how this could lead to undemocratic decisions. According to the authors, information gerrymandering reflects the structure of the influence that networks could exert to sway the vote outcome in favor of one party, even though both parties could have equal sizes and each voter has the same influence.

When a small number of political zealots strategically occupy influential positions in various networks, they can engage in information gerrymandering that would lead to bias vote outcomes. To confirm the effects of information gerrymandering in social network experiments, Stewart *et al.* (2019) used a sample of 2,520 human subjects to identify extensive information gerrymandering in the real world in terms of network influence, which includes online political discussions leading to the United States federal elections, and in historical patterns of bill co-sponsorship in United Congress and European legislatures. Their analysis revealed the degree of vulnerabilities with respect to collective decision-making in an era of information distortions enhanced by restricted information flow. Notably, their analysis also highlighted a group-level social dilemma in which information gerrymandering enables one party to sway election decision in its favor and that when both parties engage in gerrymandering they lose the ability to reach consensus leading to deadlock outcomes.

### 3. The Conceptual Framework

This study asserts that the average American cannot avoid the consumption of truths and public lies given its current socio-cultural-political environment, and that truths and public lies are also normal social-public goods that Americans consume at varying proportions in this era of intrusive and rapid DITs and disruptive SMPs. In other words, the assertion is that the consumption of truths and public lies varies among people in different states based on the reality that some states are governed by political leaders who are pathological liars with little or no room for the truths while other states experience more truthful environment with less tolerance for public lies, and others are truths-lies neutral. To illustrate these two naturally normal socio-cultural-political public goods, let us assume that the aggregate demand for truths ( $ADTs$ ) and the aggregate supply of truths ( $ASTs$ ) in the current political environment in the United States take the functional forms:

$$ADTs = ADTs (P_T, CT, DITs.SMPs_T) \tag{1}$$

$$ASTs = ASTs (P_T, TTPLs, DITs.SMPs_T) \tag{2}$$

where  $P_T$  is the aggregate prize or reward, which represents honesty-decency-integrity-dignity ( $HDID$ ) for telling the truths,  $CT$  stands for the consumers of truths,  $TTPLs$  represents the truths-telling political leaders, and  $DITs.SMPs_T$  is the composite variable capturing the importance of social medial platforms ( $SMPs_T$ ) in spreading the truths in this period of intrusive and rapidly diffusive  $DITs$ . In this modern world of  $DITs$  [United Nations (2020)], a logical research question could be: How fast do truths travel through  $SMPs_T$ ?

Similarly, the aggregate demand ( $ADLs$ ) and the aggregate supply of the public lies ( $ASLs$ ) in the current political environment can also be expressed in functional forms as:

$$ADLs = ADLs (P_L, CL, DITs.SMPs_L) \tag{3}$$

$$ASLs = ASLs (P_L, PLPLs, DITs.SMPs_L) \tag{4}$$

where  $P_L$  is the aggregate prize/penalty or opportunity costs of telling public lies, which is indicative of declining  $HDID$ ,  $CL$  captures the consumers of public lies, and  $PLPL$  represents those political leaders who are actively aggressive in propagating public liars, and  $DITs.SMPs_L$  is the composite variable showing the importance of social medial platforms ( $SMPs_L$ ) in spreading public lies using  $DITs$ . Another logical research question could be: How fast do public lies travel through  $SMPs_L$ ? To answer the first question, equations (1) and (2) are used to derive the equilibrium where the aggregate amounts of truths demanded equal the aggregate amounts of truths supplied. That is:

$$ADTs = ASTs \tag{5}$$

To answer the second question, equations (3) and (4) are used to derive the equilibrium where the aggregate consumption levels of public lies equal their aggregate output levels. That is:

$$ADLs = ASLs \tag{6}$$

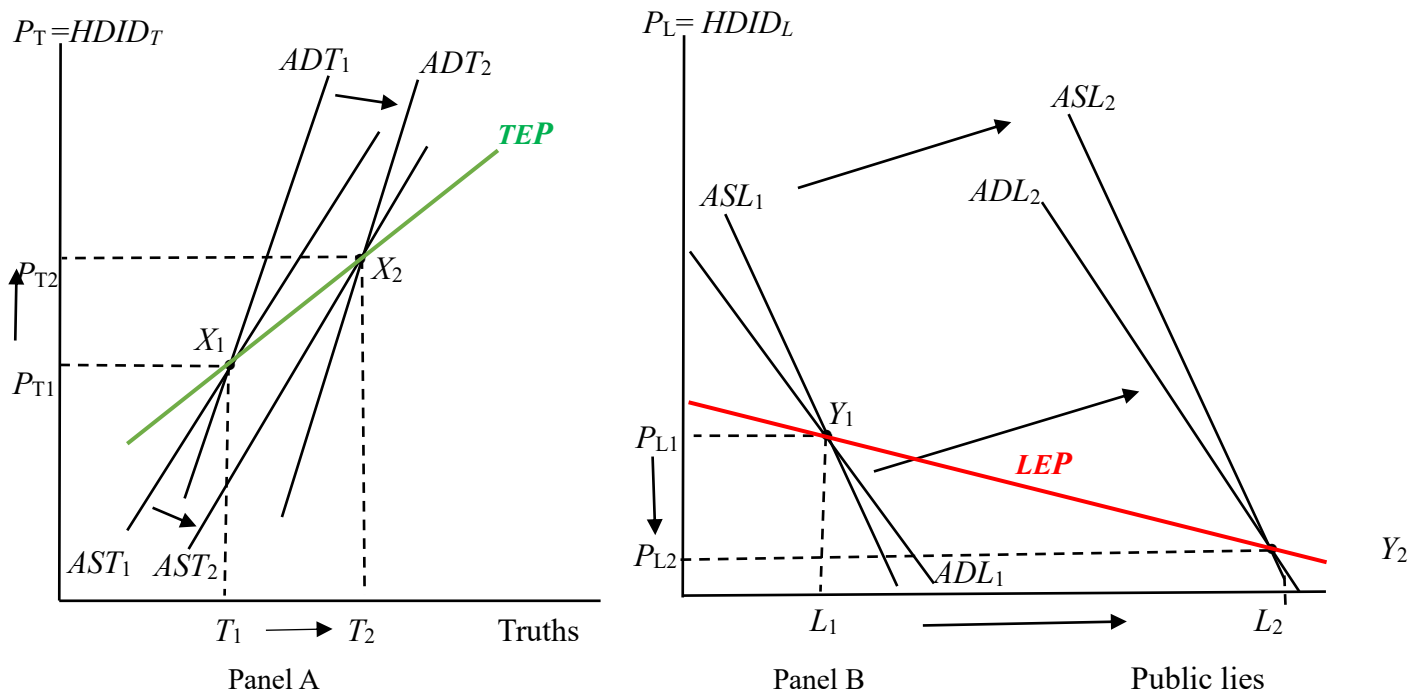
The equilibrium aggregate amounts of the truths ( $Ts$ ) and public lies ( $Ls$ ) consumed in the United States and their respective prizes ( $P_T$  and  $P_L$ ) are the endogenous variables while  $CT$ ,  $CL$ ,  $TTPLs$ ,  $PLPLs$ ,  $DITs.SMPs$  are the exogenous variables. For this study,  $P_T$  and  $P_L$  are viewed from the socio-cultural-political dimension and not the usual price that consumers pay to purchase goods and services in different markets. For comprehension,  $P_T$  is considered as an equivalent measure of honesty-decency-integrity-dignity, thus  $P_T = HDID_T$  can be viewed as the gains for truths-telling and that  $P_L$  is equivalent to a decrease in  $HDID_L$ ; therefore,  $P_L = HDID_L$  can be taken as the penalty for spreading public lies.

It should be noted that honesty encapsulates good behavior that is morally acceptable to society that cherishes integrity, which is embedded in the unwavering adherence to strict ethical standards, and also human dignity, which is at the essence of worthiness in terms of esteem [Sandhu (1997), Roach (2019)].

It is noteworthy that human beings as demanders and suppliers of the truths have one thing in common: they want to earn or be rewarded with honesty-decency-integrity-dignity to the highest levels achievable. Those who are demanders and suppliers of public lies are willing to surrender their honesty-decency-integrity-dignity for public lies in order to achieve some desired socio-political goals. These rewards and sacrifices are aptly illustrated in Figure 1. Panels A and B of Figure 1 provide the visual illustrations of equations (5) and (6), respectively. In Panel A, point  $X_1$  shows the initial equilibrium with  $P_{T1}$  as the aggregate prize or the aggregate  $HDID_{T1}$  and  $T_1$  as the aggregate amounts of the truths in the  $ADTs-ASTs$  model. In Panel B, point  $Y_1$  also shows the initial equilibrium with  $P_{L1}$  as the aggregate prize or the aggregate  $HDID_{L1}$  and  $L_1$  as the aggregate consumption levels of public lies in the  $ADLs-ASLs$  model in the United States. The exogenous variables ( $CT, CL, TTPLs, PLPLs, DITs.SMP_{ST}$ , and  $DITs.SMP_{SL}$ ) are key shifters in both panels.

Interpretatively, for Panel A, the exogenous variables:  $CT, TTPLs$ , and  $DITs.SMP_{ST}$  specified in equations (1) and (2) shifted the  $ADT$  and  $AST$  curves with noticeable increase  $P_T$  (rises from  $P_{T1}$  rises to  $P_{T2}$ , which means  $HDID_{T1}$  rises to  $HDID_{T2}$ ) and the amounts of truths ( $T_2 - T_1 = \Delta T > 0$ ).

**Figure 1: ADTs-ASTs and ADLs-ASLs Models in the United States**



One can infer from Panel A that political leaders ( $TTPLs$ ), who are morally or ethically driven to tell the truths, are usually not fixated in reaching out to the consumers of truths ( $CTs$ ) because those truths-telling political leaders do not see the need or relevance in any aggressive engagements in what may be considered as redundant repetitions of the truths. In other words,  $TTPLs$  are not very pro-active in engagements with respect to the amplifications of the truths.

In contrast, the exogenous variables –  $CL, PLPLs$ , and  $DITs.SMP_{SL}$  – specified in equations (3) and (4) have enormous impact in shifting the  $ADL$  and  $ASL$  curves with noticeable reduction in  $P_L$  as  $P_{L1}$  falls to  $P_{L2}$ , thus the remarkable increase in the aggregate consumption of public lies ( $L_2 - L_1 = \Delta L \gggg > 0$ ). Given that the  $\Delta L \gggg \Delta T$  as shown in Figure 1, then one can concur with Vosoughi *et al.* (2018) that public lies travel faster than the truths in the era of  $DITs, SMP_{SL}$ , and  $PLPLs$ .

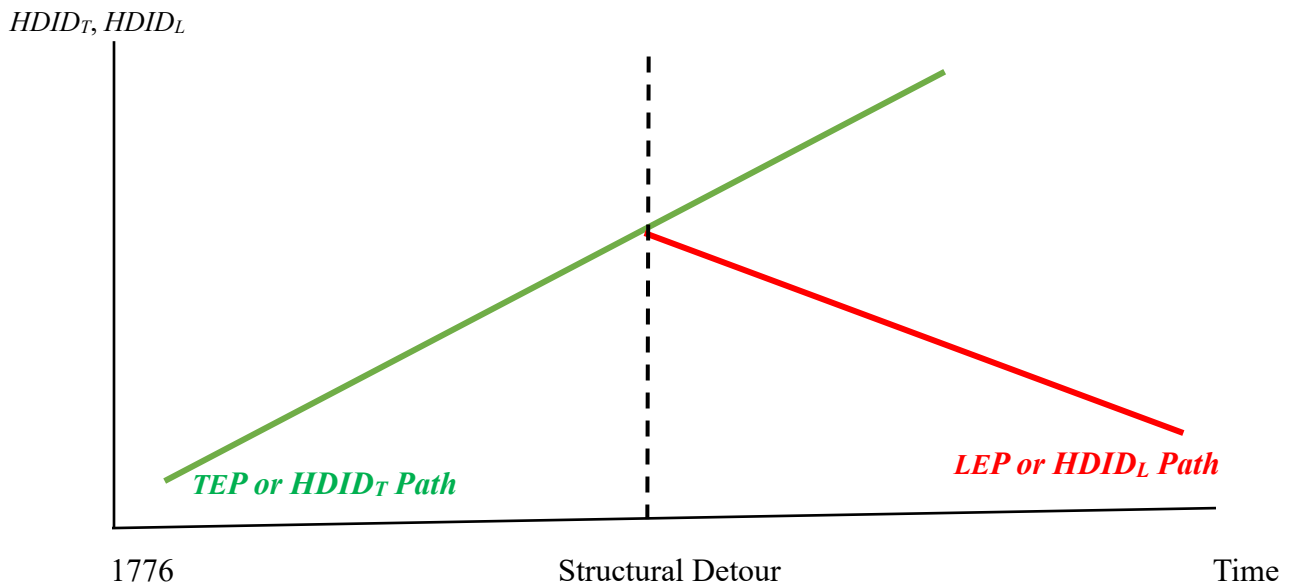
Interpretatively, the reduction in  $P_L$  is an indication that political leaders are willing to sacrifice their honesty-decency-integrity-dignity in order to propagate more public lies, thus the increase in public lies ( $\Delta L$ ) in the past couple of years, which appeared undeniably larger in comparison to the increase in the truths ( $\Delta T$ ). It is important note that  $CLs$ ,  $PLPLs$ , and  $DITs.SMPs_L$  are fundamental in the remarkable shifts in  $ADL$  and  $ASL$  curves in Panel B because we live in a new world of  $DITs$  with various unregulated social media platforms ( $SMPs_L$ ) where  $PLPLs$  can propagate unsubstantiated public lies. Today, it is obvious that the consumers of public lies ( $CLs$ ) are the followers of  $PLPLs$ , and importantly, they have easy access to  $DITs$  and  $SMPs_L$ , thus the willful consumption of public lies without verifications.

Arguably, the huge increase in the aggregate quantities of  $L$  can be attributed in part to the fact that  $PLPLs$  are much more creative with active aggressions in amplifying public lies than the  $TTPLs$  in amplifying the truths, thus public lies travel much faster than the truth in the era of  $DITs$  and unregulated  $SMPs$ . In essence, we live a world in which public lies resonate more and drown out the truths because the  $PLPLs$  use  $SMPs_L$  as the quickest and easiest transmission channels to spread public lies intended to reach their supporters who are willful consumers of lies ( $CL$ ); and these lies can lead to political chaos and domestic violence [Vosoughi *et al.* (2018)].

Importantly, both panels in Figure 1 also provide visual answers to some pertinent research questions: What is the payment/reward for telling the truths? What is the opportunity cost of propagating public lies? Do the truths and public lies grow at the same rate? To answer these questions, let us start at the initial equilibrium point  $X_1$  with  $P_{T1}=HDID_{T1}$  as the aggregate prize/reward and  $T_1$  as aggregate quantities of truths. We obtain the new equilibrium at point  $X_2$  due to those identified exogenous variables. One can infer that telling the truths can be rewarding (as  $P_{T1}=HDID_{T1}$  rises to  $P_{T2}=HDID_{T2}$ ) in achieving additional honesty-decency-integrity-dignity. Joining points  $X_1$  and  $X_2$  yields the truths expansion pathway (TEP) or the honesty pathway deemed to be monotonically increasing over time and thus it will be beneficial to the United States. With respect to the opportunity cost of spreading public lies, one can see that moving from point  $Y_1$  to point  $Y_2$  leads to  $P_{L1}=HDID_{L1}$  dropping to  $P_{L2}=HDID_{L2}$ , thus the sacrifice in honesty-decency-integrity-dignity in the process. Connecting points  $Y_1$  and  $Y_2$  yields what is dubbed as the public lies expansion path (LEP) or the dishonesty pathway, which is monotonically decreasing because we have current and future  $PLPLs$  who are engulfed with active aggressions in spreading public lies to achieve political power and control. Surrendering honesty-decency-integrity-dignity in order to gain political power and control will be detrimental to the United States.

In summary, Figure 2 provides a good illustration of the clear directions with respect to  $TEP$  and  $LEP$ , and what it means to the United States and other democracies around the world. The  $TEP$  curve shows the desirable pathway for any country to follow in a normal world of highly productive  $DITs$ , nondestructive  $SMPs$ , truth-telling political leaders, and genuine consumers of truths. Importantly, Figure 2 shows that the United States detoured, at some point over the past couple of years or decades, from the  $TEP$  to  $LEP$  because  $DITs$ ,  $SMPs$ , and  $PLPLs$  have enabled

**Figure 2: Trajectories of Honesty-Decency-Integrity-Dignity in the United States**



the propagations and amplifications of baseless public lies. From Kessler’s (2020) analysis, every president lies and regarded “Donald Trump as the most mendacious president in US history;” therefore, one can easily deduce that the noticed detour point to *LEP* occurred in 2016 in the United States when Trump won the presidency and then lied to the public that the “popular votes were stolen” from him. Simply put, this has been the most stressful political era in the United States. In this “age of Trump, there is evidence that Republicans have grown less concerned about presidents being honest than they were a decade ago;” therefore, one should expect the Republican Party to sacrifice their human honesty-decency-integrity-dignity as they consume more lies from Trump.

Now that we live in a world in which people are ready to sacrifice honesty by compromising with public lies in order to ‘get along’ [Wax (2020)], where *DITs*, *SMPs<sub>L</sub>*, and *PLPLs* have enabled the propagations and amplifications of public lies, it is obvious that the opportunity costs of spreading public lies can be seen from the further decrease in honesty-decency-integrity-dignity. As the curves shifted due to the exogenous variables, the new equilibrium at point  $X_2$  in Panel A shows that the rewards for telling the truths increased. In contrast, the new equilibrium, at point  $Y_2$  in Panel B, shows the sacrifice in honesty when *PLPLs* propagate public lies in a world of *DITs*, *SMPs*, and *PLPLs* with active aggressions in spreading public lies. For growth rates, one can also conjecture,

based on the graphical illustration, that public lies are growing a lot faster than the truths (that is,  $\frac{\Delta L}{L_1} \gg \gg \frac{\Delta T}{T_1}$ ).

There are other implicit costs due to public lies, which one cannot extricate from both figures or quantify for statistical or econometric analysis.

It is also important to note that one cannot extract from the graphical illustrations the degree to which the *DITs* and *SMPs<sub>L</sub>* have made it easy for the current *PLPLs* in the United States to engage in dubious political fund raising based on public lies, self-aggrandizements, self-projections, and self-deceptions. Evidently, *PLPLs* now find public lies to be more useful and productive than the truths in their quests to achieve political power and control, thus the structural detour point. Therefore, it should come as no surprise if we see many future political leaders embrace the strategic template of propagations and amplifications of public lies if the current *PLPLs* are not accountable for the damages caused by the public lies they spread nationwide.

**4. The Consequences of Truths and Public lies**

If the consensus is that it is less expensive to propagate and amplify public lies through various social media platforms, the challenging research questions are: What are the consequences of telling the truths? Or what are the dire consequences of spreading public lies in the United States?



The answers to these research questions can come from different dimensions and/or perspectives because there are the personal, national, and socio-political consequences associated with telling the truths and spreading public lies. Let us begin with the impact of public lies on personal safety and security (PSS), which Woodward (2022) detailed because every American witnessed the threats to personal safety and security due to the unsubstantiated public lies about the “2020 stolen election.” These dangers included, among others, protests outside the homes of officials at all levels, personal phone numbers posted online, harassments through daily phone calls, death threats to election officials, elected Democrats and their family members, and home break-ins.

With respect to the effects of public lies on national security and defense (NSD) of the United States, the national intelligence agencies refused to consume the public lies propagated by Trump and the Republican Party about the “2020 stolen election.” For refusing to consume the public lies, the Republicans in the House of Representatives, in the 118th Congress, called for the reduction in defense spending and the investigations of these intelligence agencies such as the CIA and FBI; therefore, the effects of public lies on PSS and NSD can be expressed in functional forms as:

$$PSS = PSS (TE.TTPLs, LPE.PLPLs) \tag{7}$$

and

$$NSD = NSD (PT.TTPLs, PMT.PLPLs) \tag{8}$$

where the composite variables (*TE.TTPLs* and *PT.TTPLs*) are meant to emphasize the essence of a truthful environment (*TE*) and public trust (*PT*) fostered by truths-telling political leaders (*TTPLs*). The other two composite variables (*LPE.PLPLs* and *PMT.PLPLs*) highlight the public lies-polluted environment (*LPE*) and the public mistrust (*PMT*) nurtured by aggressive political leaders who are pathological public liars (*PLPLs*).

The partial differentiations of equation (7) yield:

$$\frac{\partial PSS}{\partial TTPLs} = \frac{\partial PSS}{\partial TE} \frac{\partial TE}{\partial TTPLs} > 0 \tag{9}, \text{ and}$$

$$\frac{\partial PSS}{\partial PLPLs} = \frac{\partial PSS}{\partial LPE} \frac{\partial LPE}{\partial PLPLs} < 0 \tag{10}.$$

Similarly, the partial differentiations of equation (8) yield:

$$\frac{\partial NSD}{\partial TTPLs} = \frac{\partial NSD}{\partial PT} \frac{\partial PT}{\partial TTPLs} > 0 \tag{11},$$

and

$$\frac{\partial NSD}{\partial PLPLs} = \frac{\partial NSD}{\partial PMT} \frac{\partial PMT}{\partial PLPLs} < 0 \tag{12}.$$

Interpretatively, equation (9) and (11) show that a truthful environment (*TE*) and public trust (*PT*) fostered by truths-telling political leaders should enhance personal safety and security (*PSS*) as well as the United States’ national security and defense (*NSD*). In contrast, equations (10) and (12) show that public lies-polluted environment (*LPE*) and public mistrust (*PMT*) nurtured by the pathological public liars political leaders can endanger personal safety and security when personally targeted for retribution, which the *PLPLs* signal to supporters. This also holds true for national security and defense.

Next, this study follows the concept of social welfare economics developed by many famous economists such as Arrow (1950, 1951), Rawls (1972), Henderson and Quandt (1980), Deaton (1997), Lambert (1993), and Champernowne and Cowell (1998) to show the effects of truths and public lies on social welfare outcomes in the United States and elsewhere worldwide. In using the concept of welfare economics, the simplifying assumption is that maximum social welfare outcomes (*SWO*), in the United States, depend on the aggregate consumption of truths and public lies; and that the emergence of digital information technologies and social media platforms has enabled American citizens to consume truths and public lies. Algebraically, this takes the form:

$$SWO = SWO [T_s(DITs, TTPLs), L_s(DITs, PLPLs), CCG(TDSs, LISs), PMEV|_{C_{Ts}, C_{Ls}}] \quad (13),$$

where  $T_s$ ,  $L_s$ ,  $DITs$ ,  $TTPLs$ , and  $PLPLs$  are as defined earlier,  $CCG$  represents the combination of capital and consumer goods that are essential to sustainable economic growth and development outcomes in a modern world of digital information technologies, which are fundamental to social welfare maximization. It is important to know that capital goods are goods used to produce other goods and services – infrastructures, investment in roads, bridges, electric power supply, and many social amenities such as the supply of clean water in towns and cities. In addition,  $TDSs$  represents the truths-dominated states,  $LISs$  captures the public lies-infested states across the United States while  $PMEV|_{C_{Ts}, C_{Ls}}$  captures the provisions of medical equipment and vaccinations required to control the spreads and fatalities due to infectious diseases outbreaks in order to achieve social welfare-enhancing outcomes.

Obviously, it is not an easy task to achieve the maximum social welfare outcomes in different groups “where lying has become a fairly common occurrence” [ACA (2019)]. This is particularly intriguing in this era of DITs in which political leaders now engage in endless propagations of socio-political public lies with no ethical considerations and with little or no room for the truths. As we may recall, Stewart *et al.* (2019) argued that information gerrymandering, which this paper interprets as information distortions or public lies, by political leaders tends to yield undemocratic outcomes. For simplicity, let us assume that equation (13) is differentiable with respect to the composite variables, that is:

$$\frac{\partial SWO}{\partial DITs} = \frac{\partial SWO}{\partial T_s} \frac{\partial T_s}{\partial DITs} > 0 \quad (14),$$

$$\frac{\partial SWO}{\partial TTPLs} = \frac{\partial SWO}{\partial T_s} \frac{\partial T_s}{\partial TTPLs} > 0 \quad (15),$$

$$\frac{\partial SWO}{\partial DITs} = \frac{\partial SWO}{\partial L_s} \frac{\partial L_s}{\partial DITs} < 0 \quad (16),$$

$$\frac{\partial SWO}{\partial PLPLs} = \frac{\partial SWO}{\partial L_s} \frac{\partial L_s}{\partial PLPLs} < 0 \quad (17),$$

$$\frac{\partial SWO}{\partial TDSs} = \frac{\partial SWO}{\partial CCG} \frac{\partial CCG}{\partial TDSs} > 0 \quad (18),$$

$$\frac{\partial SWO}{\partial LISs} = \frac{\partial SWO}{\partial CCG} \frac{\partial CCG}{\partial LISs} < 0 \quad (19),$$

$$\frac{\partial SWO}{\partial PMEV} \Big|_{C_{Ts} > C_{Ls}} > 0 \quad (20),$$

and

$$\frac{\partial SWO}{\partial PMEV} \Big|_{C_{Ts} \geq C_{Ls}} \geq 0 \quad (21).$$

Equations (14) and (15) show that  $DITs$  can also enable the dissemination of truths through different social media platforms, especially if the truths-telling political leaders are active and persistent enough in spreading and amplifications such that the truths can resonate more than public lies; therefore, truths-telling can be *social welfare-enhancing*. In contrast, equations (16) and (17) show the negative effects of digital information technologies [United Nations (2020)]. In this cyberspace era of DITs and SMPs, some political leaders in the United States, and elsewhere around the world, have become pathological public liars who are determined to spread public lies in order to achieve political power and control.

These public lies can be *social welfare-retarding*, especially given the velocity with which public lies spread through DITs transmitted through SMPs, which are easily accessible to rural and urban areas across the United States.

The question yet to be answered or resolved is whether the negative consequences of public lies will outweigh the effects of truths-telling in the foreseeable future. It is noteworthy to point out that equations (16) and (17) also reflect what many autocratic countries, such as Russia, China, Venezuela, and North Korea are experiencing in this current era of globalization, which has enabled the ease with which the citizens in these countries can consume the truths and public lies without verifications. From equation (18), one can infer that the social welfare will improve with more consumption of consumer and capital goods in truths-dominated states (TDSs). Simply put, when people are more truth-loving in any state in the United States, they tend to demand transparency and accountability from their political leaders with respect to the utilization of their scarce economic resources, which are required to achieve improvements in the social welfare. Economic theory suggests the importance of producing more capital goods and consumer goods in order to achieve improved living standards in an environment of truth-telling where political leaders are entrenched in building of public trust, which normally plays a very tangible role in government effectiveness. According to the OECD (2017), “governments cannot function effectively without the trust of citizens, nor can they successfully carry out public policies, notably more ambitious reform agendas.”

On the contrary, equation (19) shows the degree of deterioration in social welfare maximization in what we dubbed as the lies-infested states (LISs) in the United States, that is,  $\frac{\partial SWO}{\partial CCG} \frac{\partial CCG}{\partial LISs} < 0$ . Interpretatively, the emergence of DITs and SMPs, over the past two or three decades, can be deemed to have contributed negatively to social welfare outcomes in different states across the United States. The negativity is more pronounced in states where political leaders are the least transparent and are not held accountable for propagating egregious public lies using disinformation and conspiracy theories, which the citizens of their states willfully consume. In contrast, if political leaders are truthful and transparent, they tend to earn the desired public trust needed for strategic formulations and implementations of political-public policies designed to achieve the preferred utilization of their scarce economic resources such as capital infrastructures (bridges, highways, rural roads) and human capital, which are essential in order to improve the living standards of citizens in their states.

Equations (20) and (21) show that the impact of the provisions of medical equipment and vaccinations (*PMEV*) on social welfare outcomes (*SWO*) depends on whether or not there are more truth-lovers relative to those willful consumers of public lies or vice versa. Importantly, both equations aptly captured what the United States experienced with respect to the episodes of epidemics and pandemics over the past two decades. For instance, President Obama provided the medical truths about the pandemics experienced during his tenure in the White House, thus many people complied with the vaccinations required to mitigate the spreads and fatalities of the pandemics. In 2020, President Trump twisted the medical truths and lied repeatedly [Markowitz (2021)] about the COVID-19 pandemic, and this led to the massive spreads and fatalities in the United States [Owoye and Onafowora (2022)] as many people disregarded the medical guidelines and became vaccine-hesitant because they still believe the public lies.

Some research scholars may question the validity of classifying states into *TDSs* and *LISs*, thus this could prompt a relevant research question: How can research scholars distinguish the truth-dominated states from the public lies-infested states? Obviously, there is no index with which to identify states in the categories of *TDSs* and *LISs*, however, Americans witnessed the truths and public lies about the medical guidelines on how to handle COVID-19 pandemic. To answer this question, we provide the available data evidence obtained from the Center for Diseases Control and Prevention in Appendix A. The data ranked states including the District of Columbia based on the percentage of their population fully vaccinated against the COVID-19 pandemic. Using the university grading method, one can deduce that 20 states and the District of Columbia can be grouped in the *TDSs* category while the remaining 30 states can be grouped in the *LISs* category.

As for the social and political consequences of telling the truths and spreading unsubstantiated public lies, this can be illustrated by linking truths and public lies to the *stability-strength-survival of representative democracy* (*SSSRDEM*) in the United States. Arguably, *SSSRDEM* depends on many factors, some of which can be easily expressed and explained in algebraic form as:

$$SSSRDEM = SSSRDEM (EPS.PLs, RL.PLs, CP.PLs, PT.PLs, DITs.SMPs.PLs) \tag{22}$$

where *EPS.PLs* is the composite variable intended to capture the economic, political, and social institutional pillars of representative democracy and how political leaders (*PLs*, which can be *TTPLs* or *PLPLs*) can manipulate these vital institutions to achieve their political aspirations [Owoye (2020)]. According to many institutional scholars [North (1990, 1971), North and Thomas (1973), Acemoglu (2020, 2009, 2003), Acemoglu and Johnson (2008, 2006), Acemoglu, *et al.* (2005), Rodrik (2002), and Rodrik, *et al.* (2002)], the EPS institutions are the “rules of the game” that set democracies apart from autocracies around the world. Similarly, *RL.PLs*, *CP.PLs*, *PT.PLs*, and *DITs.SMPs.PLs* are also composite variables intended to show the importance of the rule of law (*RL*), consumers’ preference (*CP*), public trust (*PT*), and the confluence of *DITs.SMPs*, which political leaders can also manipulate to achieve political power and control. Conceptually, equation (22) is designed to highlight the fragility of representative democracy in the United States in this period of *DITs*, *SMPs*, and *PLPLs*; and this is also applicable to other countries with democratic governance process worldwide.

To show the degree of fragility and the extent to which the truths-telling political leaders or public liars political leaders can change the trajectories of *SSSRDEM* in the United States, we rewrite equation (22) in exponential form based on studies [Dizikes (2018), Fox (2018), Vosoughi *et al.* (2018), and Lemire (2020)] that alluded to the speed at which truths and lies diffuse. Kessler (2020) also pointed out that the pace of deception has quickened exponentially; therefore, one can express these exponential effects of truths and public lies on the *SSSRDEM* in algebraic form as:

$$SSSRDEM = (EPS.PLs)^{\alpha-\lambda} + (RL.PLs)^{\sigma-\tau} + (CP.PLs)^{\delta-\gamma} + (PT.PLs)^{\theta-\eta} + (DITs.SMPs.PLs)^{\beta-\phi} \tag{23}$$

Rewriting equation (23) in logarithm form (for example,  $\log SSSRDEM = sssrdem$ ) yields:

$$sssrdem = (\alpha-\lambda)[eps.pls] + (\sigma-\tau)[rl.pls] + (\delta-\gamma)[cp.pls] + (\theta-\eta)[pt.pls] + (\beta-\phi)[dits.smpls.pls] \tag{24}$$

and differentiating *sssrdem* in equation (24) with respect to the composite variables yields:

$$\frac{\partial sssrdem}{\partial eps.\partial pls} = \alpha - \lambda \tag{25}$$

$$\frac{\partial sssrdem}{\partial rl.\partial pls} = \sigma - \tau \tag{26}$$

$$\frac{\partial sssrdem}{\partial cp.\partial pls} = \delta - \gamma \tag{27}$$

$$\frac{\partial sssrdem}{\partial pt.\partial pls} = \theta - \eta \tag{28}$$

and

$$\frac{\partial sssrdem}{\partial dits.\partial smpls.\partial pls} = \beta - \phi \tag{29}$$

To comprehend what these coefficients mean, recall that *pls* in equations (25)-(29) is meant to signify two categories of political leaders: *TTPLs* or *PLPLs*. Interpretatively, the coefficients  $\alpha$ ,  $\sigma$ ,  $\delta$ ,  $\theta$ , and  $\beta$  capture the extent to which *TTPLs* can adhere to the ethical norms of telling the truths at all costs in order to build trust necessary to ensure the stability, strengthen, and survival of representative democracy in the United States. On the contrary, the coefficients  $-\lambda$ ,  $-\tau$ ,  $-\gamma$ ,  $-\eta$ , and  $-\phi$  capture the degree to which *PLPLs* can disregard ethical norms in the quest to use public lies to undermine and manipulate the democratic process. Interpretatively, these coefficients  $\alpha-\lambda$ ,  $\sigma-\tau$ ,  $\delta-\gamma$ ,  $\theta-\eta$ , and  $\beta-\phi$  capture the impact on the *SSSRDEM* when the *TTPLs* tell the truths relative to the propagations and amplifications of public lies by the *PLPLs*.

If on the one hand one assumes that the truths will always catch-up and overtake the public lies, the net effects will be positive (that is,  $\alpha-\lambda > 0$ ,  $\sigma-\tau > 0$ ,  $\delta-\gamma > 0$ ,  $\theta-\eta > 0$ ,  $\beta-\phi$  as  $T > L$ ); therefore, one should expect that democracy in the United States may continue to exist on the stability-strength-survival path, which is synonymous with the green *TEP* line depicted in Figure 2 – a pathway that the United States needs in order to build a “more perfect union.” If on the other hand one assumes that the *DITs*, *SMPs*, and *PLPLs* have enabled the endless propagations and amplifications of public lies, then it is logical to deduce that public lies could overpower and drown out the truths, thus the net effects could be remarkably negative (i.e.  $\alpha-\lambda \lllll 0$ ,  $\sigma-\tau \lllll 0$ ,  $\delta-\gamma \lllll 0$ ,  $\theta-\eta \lllll 0$ , and  $\beta-\phi \lllll 0$  as  $T \lllll L$ ) as illustrated by the red *LEP* line in Figure 2; and this could be a dangerous pathway for the United States and other democracies worldwide.

Some countries in the past twisted the truths to achieve the desired political power and control, and this is analogous to switching from the monotonically increasing *TEP* to the monotonically decreasing *LEP* – a destructive pathway. In other words, if the pathological *PLPLs* in the United States can succeed in twisting the truths and normalize public lies, and in the process, they achieve  $T \lllll L$ , this may also signal to future political leaders around the world to adopt the political strategy of public lies in order to attain political power and control. This could be globally contagious because some countries will replicate the January 6, 2021 Capitol Hill insurrection as the political template needed to achieve political power and control in democracies worldwide.

## 5. Discussions and Concluding Remarks with Political-Policy Implications

This study provides the theoretical aggregate demand and aggregate supply (AD-AS) model with which to examine the costs or consequences of truths-telling and the amplifications of public lies in the United States. This is the first study to identify the modern world of digital information technologies, social media platforms, and political leaders who are pathological public liars as the key exogenous variables that have contributed remarkably to the propagations and amplifications of public lies in the United States and elsewhere around the world where democracies exist. Applying the AD-AS model in the analysis of truths and public lies, this study shows that the rewards/prize for telling the truths increased while the rewards/prize associated with public lies decreased over the years because the consumers of public lies now have easy access to social media platforms where they can quickly consume huge amounts of public lies without verifications. In other words, consumers of public lies do so by sacrificing their *honesty-decency-integrity-dignity*. This study shows that the truths and public lies have different effects and/or consequences, which include personal safety and security, national security, maximization of social welfare outcomes, and the *stability-strength-survival of representative democracy* in the United States.

Pundits who may be skeptical of the unique graphical and algebraic illustrations of the consequences of truths, which are *social welfare-enhancing* in contrast to public lies, which are *social welfare-retarding* provided in this study need to know that tyrannical leaders in some democratic countries twisted the truths in the early 20th century. Given the corrosive effects of the public lies, those countries experienced political chaos and extreme violence. Historians have pointed out that many countries descended into chaos and political violence in the 20th century, especially in the late 1930s, when the truths were devastatingly twisted during which the natural human response was complete obsequiousness and acquiescence. By then, *DITs* and *SMPs* did not exist. In other words, twisting the truths in the 21st century is not a new phenomenon, except that the impact may be more devastating now because we live in a world of *DITs*, *SMPs*, and dedicated *PLPLs*. Today, it appears as if the costs of clinging to the truth may be overwhelming to certain segments of society; therefore, they are willing to accept public lies, despite the detrimental effects on *human honesty-decency-integrity-dignity*. The political divisions in the United States, which many studies [Owoye and Josi (2022)] pointed out, provide a glaring indication that many members of the Republican Party are willing to tradeoff their *human honesty-decency-integrity-dignity* for public lies used to incite and nurture hatred [Owoye and Onafowora (2021)] because their overriding objective is to achieve complete political power and control.

Nonetheless, it is important to point out that some of the dire consequences of public lies include the losses in personal safety and security, national security and public trust, social welfare, and the *stability-strength-survival of representative democracy* in the United States. The January 6, 2021 Capitol Hill insurrection, during which some innocent law enforcement officers died, provided an irrefutable evidence that public lies actually caused political chaos and violence due to implicit incitements that *PLPLs* triggered. President Trump’s public lies about the “stolen 2020 presidential election” almost eviscerated the normal protocol regarding the transition of power in American politics. These public lies almost succeeded as the “*weapons of democracy destruction*.”

In terms of political-policy implications, the United States witnessed one of the dire consequences of public lies propagated by Trump and his political allies in the Republican Party about the 2020 presidential election. It is therefore imperative for the United States to address the ease with which political leaders now propagate and amplify public lies through social media platforms in this era of DITs because the cumulative public lies will ultimately undermine public trust and destabilize the political process. This is particularly important because some political leaders now find public lies to be the most useful strategy in achieving political power and control.

Americans need to be well-informed that public lies are detrimental to the governance process; therefore, this is the time to demand for complete truthfulness, accountability, and the return to the normal ethical standards, otherwise the proliferations of public lies will escalate into the foreseeable future because those voters with preference for public lies will continue to willfully consume public lies propagated by their political leaders who are strategic pathological liars. Based on the data evidence provided in Appendix A, the amplifications of public lies should concern every American because there are 30 states that can be classified as public lies-infested where the consumption of public lies will continue to manifest relative to the 20 truths-dominant states and the District of Columbia. Rational Americans should not embrace the normalization of public lies as the new political norm because doing so will tarnish *human honesty-decency-integrity-dignity*. More importantly, the amplified public lies, which became the American carnage over the past eight years, will eventually undermine the rule of law, eviscerate all the democratic norms, and put American democracy on the precipice of destruction, which many studies highlighted [Diskin *et al.* (2005), Levitsky and Ziblatt (2018, 2016b, 2016a), Owoye (2020, 2022)].

In this modern world of highly intrusive and rapidly diffusing DITs along with artificial intelligence (AI), disruptive SMPs, and pathological PLPLs, public lies are globally contagious; therefore, we should not be embroiled in delusional thinking that the truths will eventually prevail over public lies. The era of DITs, AI, and SMPs will not disappear and public lies will continue to be amplified for consumption if Section 230 of the Communications Act prevents the Federal Communications Commission (FCC) from issuing its cease-and-desist order on SMPs for enabling the propagations of unsubstantiated public lies. Arguably, the ongoing political chaos and divisions across the United States as well as the growing public distrust of our vital institutions, especially the Congress and the Supreme Court of the United States [Owoye (2022)], can be attributed to some degree on the countless propagations and amplifications of public lies on SMPs in the United States. Above all, this study is a scholarly reminder that the political strategy of twisting the truths to achieve political power and control occurred many times in the past; therefore, it is not a new phenomenon. However, we live in a different time in which contagious public lies travel in nanoseconds and resonate much louder than the truths with Section 230 providing the immunity for SMPs, thus the inability of the FCC to control the disruptive SMPs; therefore, we cannot ignore the amplifications and the ultimate normalizations of public lies. These baseless and reckless propagations of public lies could be the greatest threat to representative democracy in the United States and other democracies around the world. Today, Americans live in an era in which their political leaders maliciously use public lies to fuel anger, anxiety, frustration, racial and gender hatred or discrimination, chaos, and political violence in order to retain political power and control.

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**Appendix A: Table 1A: Data on Full Vaccination Against COVID-19 Pandemic in 2023**

Districts and States	Percentage Fully Vaccinated	Grade Based on Vaccination
1. District of Columbia*	89.9	B+/A-
2. Rhode Island*	87.5	B+
3. Vermont*	85.4	B
4. Massachusetts*	84.0	B
5. Maine*	83.1	B-
6. Connecticut*	82.9	B-
7. Hawaii*	81.4	B-
8. New York*	80.6	B-
9. Maryland*	79.5	C+
10. New Jersey*	78.9	C+
11. Virginia*	76.4	C
12. Washington*	75.8	C
13. New Mexico*	75.0	C
14. California*	74.5	C
15. Colorado*	73.3	C-
16. Delaware*	73.1	C-
17. Pennsylvania*	73.1	C-
18. Oregon*	72.2	C-
19. Minnesota*	72.0	C-
20. New Hampshire*	71.5	C-
21. Illinois*	71.1	C-
22. Florida†	69.3	D+
23. Wisconsin†	68.0	D+
24. North Carolina†	66.9	D/D+
25. Utah†	66.5	D/D+
26. Nebraska†	66.1	D
27. South Dakota†	66.0	D
28. Arizona†	65.9	D
29. Kansas†	65.1	D
30. Alaska†	65.0	D
31. Iowa†	64.2	D
32. Nevada†	63.6	D
33. Texas†	63.1	D-
34. Michigan†	62.2	D-
35. Ohio†	60.3	D-
36. Oklahoma†	60.3	D-
37. South Carolina†	59.8	F/D-
38. West Virginia†	59.6	F/D-
39. Kentucky†	59.5	F/D-
40. Montana†	59.0	F
41. Missouri†	58.9	F
42. North Dakota†	58.5	F
43. Indiana†	57.6	F
44. Georgia†	57.1	F
45. Arkansas†	56.8	F
46. Idaho†	56.3	F
47. Tennessee†	56.2	F
48. Louisiana†	54.9	F
49. Mississippi†	53.6	F
50. Alabama†	53.1	F
51. Wyoming†	53.0	F

**Source:** Centers for Disease Control and Prevention, 2023. The author provided the grade using the university grading method. \* = states presumed to be truths-dominant on the *TEP* or the honesty pathway, and † = states presumed to be public lies-infested on the *LEP* or dishonesty pathway.