

THE INTERPLAY OF NARRATIVE ECONOMICS, PUBLIC POLICY, AND MENTAL HEALTH: IMPLICATIONS AND INSIGHTS

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ABSTRACT

The way the government handles a possible pandemic may have an impact on the general public's mental health. In reaction to the COVID-19 epidemic, Britain, Italy, and Sweden have taken different approaches: putting in place a lockdown quickly, putting one in place gradually, and opting not to impose one at all, respectively. Our method, known as story economics of language culture-based development, is distinct. After examining Google trend data for certain terms like "death" and "suicide," we have come to two main conclusions: (i) While pre-existing culturally relative inclinations toward death fear were evident in several countries, the degree to which these countries responded to COVID-19 governmental initiatives differed as well. (ii) Nevertheless, when particular national lockdown policies from one country were adopted by another, significant consequences on mental health were seen.

Keywords: public policy, health, COVID-19, cultural hysteresis, cultural based development, cultural narrative, and shocks.

I. INTRODUCTION

Under the influence of one and the same negative shock, the Covid-19 pandemic, three different European countries adopted a very different public policy response. Generating in essence a natural quasi-experiment with regard to public policy response to pandemics. In Italy and the UK, public policy switched (with different speed and timing in the response) from "business as usual" to "complete lockdown". In Sweden, they endured the "business-as-usual" policy. Was this a purely economically relevant decision and was it just a matter of internal policy or did the behaviour of every country affected anyhow the rest of the world?

Firstly, within each country, the effect is related to what is called local resilience. The recent years marked with series of economic crisis had left us with a new term of importance in economics – economic resilience, which in essence is the durability of an economy to negative shocks (Bristow & Healy, 2020; Reggiani et al., 2002). We argue however that in fact another aggregate resilience – the psychological one – is of a much greater importance for handling any – economic or health – crisis. That is why maintaining the faith of people in the public policy is an instinctively felt necessity (Norpoth et al., 1991; Goldberg & Richey, 2020; Ponticelli & Voth, 2020). We venture into documenting why this is so.

Mental health exists on a spectrum of normality (Spijker et al., 2010; Gotts et al., 2012). The ability to maintain an individual's (or a societal's aggregate) mental health around that spectrum's central value is defined as psychological resilience (Fletcher & Sarkar, 2013).

The public policy towards managing the scarce economic resources and our public goods such as our nations' health, are causing what an economist would call an economic endogeneity of psychological resilience. Put differently, psychological resilience is partially dependent on the economic and public policy implemented in a country (Cornum et al., 2011).

The reason for this is our deeply rooted survival drive which is the main evolutionary concern and fear for survival is one of the most important elements of the human psychological state (LeDoux, 1995; Akerlof & Shiller, 2010; Kahneman & Tversky, 1979). Therefore, the central anxiety due to fear for survival is naturally the psychological response to the current COVID-19 pandemic.

This means that the social context created by the public policy is a source either of increase in public anxiety or of better psychological resilience to survival threats. Clearly, socioeconomic context is a function of the manner in which life is organized and the security network to which people rely on for their survival (Castells, 1996; Kloosterman et al., 1999; Tubadji et al., 2020a). This importance of public policy however has not been recognized with regard to the general public's mental health.

The prominent work of Michel Foucault (1954, 1961) has opened an important debate about the importance of public mental health policy in terms of how mental institutions are handled. This approach has been widely embraced (Frank and McGuire, 2000). However, the importance of general public policy for general public health is not recognized as a clear question worth monitoring and planning.

We elaborate a filigree quantitative analytical approach relying on the Culture Based Development (CBD) paradigm (Tubadji, 2012, 2013) which allows us to study through the emerging narrative economics of language method (Tubadji, 2020a; Tubadji & Pattitoni, 2020) how public policy affects public mental health.

The novelty of this paper is that it applies this method to analyze the impact of public policy on mental health. The CBD paradigm seeks to explain economic choices that are subject to cultural bias. In this case, the choice under analysis is the public policy decision between "business as usual" and "complete lockdown". The narrative economics of language quantitative method (Tubadji, 2020b) is inspired by the father of behavioural economics Herbert Simon's treatment of Zipf's law of the distribution of words (Simon, 1955) and the recent epidemiology of language approach in narrative economics (Shiller, 2017, 2019). CBD combines these two approaches in order to study the cliometrics of language¹ as a source of

statistical record for the thinking, meaning making and history of ideas. In terms of the intensity in the social discourse, the CBD approach postulates that the thinking, meaning, making and history of ideas exists in a positive relationship to Zipf Law, which drives the statistical relationship of language with economic events and processes over time (Tubadji, 2020a). We contrast the search frequencies of two keywords, “death” (as a proxy for anxiety from death) and “suicide” (as a proxy for the propensity to seek death), on the Google search engine both before and during the COVID-19 pandemic. We analyzed the public policy of lockdown as a treatment that induces changes over time in the frequency of search for these words, which reflects the intensity of mental distress experienced in society under the fear of mortality from the COVID-19 virus. Our findings point towards public policymaking as a powerful endogenous source of information that affects public mental health.

The structure of this paper is as follows. “Economic Resilience and Socio-economic Context” discusses the definition of psychological resilience and briefly reviews the literature on mental health, public policy, discourse and meaning. “Culture Based Development: Psychological Resilience and Public Policy” summarises the regional economic literature on economic resilience of places. “Data” offers the CBD approach to identifying the causal link between public mental health resilience and public policy. “Method” describes our data and method, which relies on the use of linguistic statistics from Google trends and econometric methods for causal inference. This section offers our results and findings. “Results” concludes and draws policy implications.

Psychological Resilience, Mental Health and Public Policy

Psychological resilience has been defined in psychology at the individual level, primarily because of its proximal implications and impacts on daily life (Fletcher & Sarkar, 2013; Haddadi & Besharat, 2010). Every individual is entitled to the right to maintain their psychological resilience, and this is a basic need and human right guarantee offered by the UN and most national constitutions (Malkina-Pykh & Pykh, 2013). However, in policy evaluation, the individual is no longer the focus of attention. Mental health is considered differently and, typically, it is discussed with regard to the point of provision for institutionalized mental health care and is discussed in this manner even in some of the most social-behaviour minded studies (Dear et al., 1979; Frank & McGuire, 2000; Hatzenbuehler, 2010; Knapp et al., 2011; Wahl, 2003).

The relationship between public policy and a population’s mental health through the construction of socioeconomic context and discourse has been raised in the prominent work of Michel Foucault (Foucault, 1954, 1961). Foucault belongs to a constructionist philosophical school that assumes that

all ideas and meaning are recorded in the language of the discourse (Derrida, 1967; Derrida & Dutoit, 1992; Tubadji, 2020b). Foucault's example of this linguistic recording is based specifically on the language about madness and mental health. He explains how the mentally ill have been treated differently through public policy in different historical periods, and how this dramatically and negatively has affected their quality of life, especially institutionalized rather than allowed to remain in a social setting. Foucault's reasoning has been particularly influential on the anti-psychiatry movement (Crossley, 2006) and this was reflected in the public policy shift towards dehospitalization (Haveman, 1986), which is a policy change that has met with mixed sentiments across space (Stavis, 2000; Sercu & Bracke, 2016). We argue here that Foucault's deconstructionist theory is not only relevant for his topic of interest, clinical mental health, and that public discourse also affects the mental health of the general public. Foucault's considerations on the interplay between mental health and policymaking focused on the sufferings of an isolated vulnerable minority in the general population. The present study proposes a novel view that the Foucaultian constructionist mechanism has general applicability for the association between mental health and policymaking of the entire population. Our argument stems from the domain of positive psychology where every individual's mental health status is a finely balanced dynamic system that exists on a spectrum of normality (Seligman, 2002; Yates & Masten, 2004; Brunzell et al., 2016) and the mental health of every member of society is potentially subject to change under conditions of stress (Babazono et al., 2005). This includes those conditions of stress that are induced by the national-level context and socioeconomic narrative, such as expression of social unrest, revolts and voting patterns, which reflect contemporary and evolving socioeconomic narratives (Benabou & Tirole, 2006, 2009, 2011, 2016). It has also been noted that episodes of social unrest are closely related to public policy (Hirschman & Rothschild, 1973). The COVID-19 pandemic, and its concomitant high level of uncertainty, has created the opportunity to explore the relationship between measures of aggregate mental health and socioeconomic public policy.

Economic Resilience and Socioeconomic Context

Resilience is not consistently defined or consistently measured in economic terms. Outside of the fields of psychology and physics, the term resilience gained recognition first in ecological science where it was adopted to explain the fluctuation of animal populations (MacArthur, 1955). Subsequent ecological studies of resilience grew significantly (Neubert & Caswell, 1997; Reggiani et al., 2002) and one of the modern definitions

of resilience states that it refers to “the ability of an entity or system to “recover form and position following a disturbance or disruption of some kind” (Martin, 2012: p. 4). Some of the most prominent approaches to economic resilience can be found in Nijkamp (1999), Reggiani et al. (2002), Bristow and Healy (2020) and Östh et al. (2018), which maintain concerns predominantly with the economic rather than the socioeconomic aspects of resilience. The use of resilience as a concept that connects the economy with aggregate mental health has not been attempted thus far even though the link is evidently clear. We summarise that in socioeconomic terms, Psychological Resilience of a Population (PRP) is a stability of the general public’s mental health state that ensures the productive operation of the economic system.² We argue that public policy can significantly affect the aggregate mental health and its resilience in any locality.

Complexity theory argues that context is exceptionally important for the entire economic system. Context is a major factor underpinning entrepreneurial research, and the cultural historical institutional roots of a local context determines entrepreneurial success in a path-dependent manner (Acemoglu & Robinson, 2010, 2012). Diversity and entrepreneurship studies show that contemporary contexts affect the efficiency of a team and its ability to be innovative and achieve success (Brunow & Nijkamp, 2018; Brunow et al., 2015). The more general cultural context is a source of multiple complex interactions in the socioeconomic system that vary across geographies and over time. These interactions made Nijkamp (2007) reason that no economic system can be studied successfully if the researcher assumes the *ceteris paribus* condition with regard to the cultural context.

Context and psychological characteristics (particularly personality traits) have been studied thoroughly in the literature as two closely interlinked entities. Economists have embraced the quantification of the Big Five personality traits for the study of the psychological milieu of places across Europe and the USA (Rentfrow, 2014; Schmitt, 2004; Steel et al., 1997). Modern entrepreneurship studies use the Big Five data as an indirect way to quantify the cultural contexts in which entrepreneurs are embedded (Fritsch et al., 2019, 2020; Obschonka et al., 2013). These studies align with earlier research employing the World Values Survey to explore daring attitudes as proxies for a psychological culture that is conducive to innovation (Shackle, 1949; Tubadji et al., 2020b).

The influence of context on socioeconomic behaviour in relation to anxiety has a deep evolutionary behavioural explanation. Although the importance of socioeconomic context was suggested first in relation to financial behavioural economics (Akerlof & Shiller, 2010), we argue from an evolutionary perspective that people are another type of herd animal. It is

possible to draw parallels with populations by studying herd animals who effectively decrease their anxiety from threats by using the herd as a signalling tool to identify the presence of a danger (Hall, 1966).

Culture Based Development: Psychological Resilience and Public Policy

The Psychological Resilience of a Population (PRP) should be regarded as a spatially evolving endogenous element that affects our response to and was effected by the COVID-19 pandemic. This study examines the mental health effects of the Covid-19 pandemic directly, yet these mental health effects represent a secondary source of influence in the public's reaction to all further public policy interventions. The main operational definitions of the CBD paradigm (Tubadji, 2012, 2013, 2020a) relevant to this study are culture, cultural capital, cultural milieu and cultural gravity. These operational definitions have been defined and analyzed elsewhere, but can be summarised as:

- 1) Culture is the set of beliefs and attitudes that exist in a place and inspire choice and action (Tubadji, 2013).
- 2) Cultural capital is the endowment of material and immaterial assets that quantify the stock of culture available in a place. Cultural capital has two main dimensions: cultural heritage (assets constructed in and inherited from historic periods that create path dependence) and living culture (assets that are being constructed in the present and represent cultural innovations and cultural change in the place) (Tubadji et al., 2020a; Tubadji & Montalto, 2021).
- 3) Cultural milieu is the amalgam of predominant attitudes that form a context (or general discourse) which is created by the culture of a place and in which the rest of the socioeconomic processes are embedded (Tubadji et al., 2020a).
- 4) Cultural gravity is the appeal of a place that attracts and concentrates human capital, and is based on the type of cultural milieu that the place has (Tubadji & Nijkamp, 2015).

From this CBD paradigm point of view, mental health is part of the cultural milieu; it creates the current context and records in the cultural heritage of a place.

Therefore, preservation of a locality's healthy, favourable and attractive cultural milieu maintains care not only for the current members of the place but also for its regional development.

From a methodological perspective, the Narrative Economics of

Language (Tub- adji, 2020a) is a novel CBD analytical method that is used to investigate the link between socioeconomic development and the context of thinking, meaning and ideas through the information recorded in the statistical characteristics of language. This CBD method is based on two priors: (i) statistical reasons to consider language as a reliable evolutionary record of thinking and meaning and (ii) empirical advances for analyzing relationships between phenomena using time series of detailed big data. Thus, this approach is motivated by two considerations:

- 1) Zipf's distribution³ (Zipf, 1935, 1949) was noted by Herbert Simon to underlie the distribution of many socioeconomic phenomena, such as the growth of cities, population and firms. The CBD narrative economics of language perspective builds on Simon's (1955) observation and suggests that the statistical dominance of a word among a distribution of words, which accords to the Zipf Law ranking, also corresponds to the dominance of the narrative in the contemporary public discourse. Similarly, psychology uses words as verifiable signifiers of emotional states (such as anxiety for mental health) (Löwe et al., 2008).⁴ Thus, the CBD method considers words that are signifiers for a certain emotional state and that have a higher Zipf ranking to have stronger prevalence of the respective psychological trait in the local cultural discourse (or context).
- 2) Publicly available big data from online sources, such as Google, Instagram, Facebook and Twitter, provide records of information in granular time-series form (see for instance Banerjee, 2018). For instance, Google search volume data can be mined for any keyword and timestamped for every 7.95-min period over the past 15 years. We use this data here. Long time series of high frequency sample data provide an opportunity for causal econometric inference and predictions. It can be used for historical and continuous monitoring and for the forecasting of the public response to endogenous and exogenous treatments, such as a pandemic crisis. Above all, this is real behavioural data, which outsmarts any simulation model and allows for real-time analyses of public opinion and reactions to any public communication and economic policy.

DATA

Our linguistic dataset contains the frequency of keyword searches using Google trends. The keyword of primary interest is the word 'death', which we claim to be the best proxy for the mental state of anxiety from death during the Covid-19 pandemic. We also obtained the frequency of the word 'suicide' as a control for the opposite mental state of anxiety

motivated by the desire for death. Finally, we obtained frequencies for a word that is neutral to anxiety, 'chair', in order to control for increases in keyword search behaviours due to the increased need to stay at home during the lockdown, and this enables us to distinguish between the increase in the use of the internet during the lockdown and the increase in the levels of anxiety as an experienced mental state.

Previous research shows that Google keyword searches vary depending on the day of the week (Boy & Tubadji, 2020) and therefore it is present also in our Google trend data. We employed day of week dummy variables in our regressions, which we use in the sense of fixed effects to capture the weekly seasonality in the data, but also use these dummy variables to reconfirm and analyze differences in experienced anxiety during the week.

It is noteworthy here to clarify the differences and similarities that previous work with big data from Google and similar sources has done with regard to COVID-

19. The literature with big data divides importantly in two types: using the internet search frequency for cultural linguistic markers to approximate the mental state in the big data (see for example Brodeur et al., 2021) or analytical approach to identifying the mental state relying on sentiment analysis of internet posts. The first approach has the advantage that it is the directly observed intensity of the mental state marker, while the sentiment analysis is the inferred by the researcher second-guessed mental state of the observed electronically interacting population (which may carry a lot of error in the identification of the mental state). Meanwhile, the use of a single proxy variable (such as a key word frequency) is always potentially narrowing down the information, while relying on a pool of indicators (as the sentiment analysis does) may have the advantage of more fully quantifying the mental state. Our study adopts to the first, more clearly identified measurement approach. This approach has been validated also through the comparison between the internet big data search frequencies and the self-reported survey on mental health for the UK (see Boy et al., 2022).⁵

We augmented the linguistic big data with official statistics that record the number of deaths due to COVID-19 within each country of interest. Next, we added information about the dates for the imposition of the lockdown rule, which varies across countries. These dates were 12/03/2020 for Italy and 23/03/2020 for the UK. We created a dummy variable for each day, where the pre-lockdown periods were assigned a value of zero and a value of one for the lockdown period. We interacted these dummy variables with a time trend in order to obtain the policy impact interaction terms.

We considered the day of the WHO statement on the meeting of the International Health Regulations related to the COVID-19 pandemics, which was released on 23rd January 2020. This date has a particularly strong association with the Swedish data, which experienced a spike in keyword

search behaviour for the word ‘death’ on this particular day. Finally, we constructed a model where the variation in the number of keyword searches in the linguistic data was explained by mortality data and the public policy decision to undertake a lockdown.

II. METHOD

Culture is considered as a “programming of the mind” (Hofstede & Hofstede, 1991; Signorini et al., 2009) and is our motivation to claim that cultural differences in the lockdown policy will affect the general public’s mental health. The rationale to believe that public policy has an effect on mental health is rooted in the evolutionary behavioural economics perspective that public behaviour is a response to the herd signalling uncertainty and anxiety (Akerlof & Shiller, 2010; Hall, 1966). In the contemporary era of a free flow of information, the public can observe, compare and contrast what their own and other nations do as a response to the pandemic. Our herd is ultimately beyond our cultural national herd and instinctively we perceive ourselves as part of the universal human herd. Thus, from a Culture Based Development viewpoint, we test three hypotheses relating to society’s mental health behavioural response to the COVID-19 pandemic: *H01: Public policy on lockdown decreases public anxiety from death in the country of residence.*

H02: Increases in the number of reported deaths escalates public anxiety from death in the country of residence.

H03: A country’s decision to employ a lockdown policy increases public anxiety from death in other countries that have different lockdown policy regimes.

The above hypotheses rest on the assumption that public mental health is a function of quantifiable objective factors (such as death rates) and the public’s emotional sensitivity to policy employed for handling the objective factors. This public policy reflects the culture of management of the Covid19 problem within a country, and in relative terms can be expressed as the difference in the time of imposition of a lockdown rule (or its complete avoidance) relative to other countries. The operational model through which we test our working hypotheses is:

$$ANXIETY_FROM_DEATH = a + \beta_1 LOCK_DOWN + \beta_2 DEATH_NUM + \beta_3 X + e_1 \quad (1)$$

where *ANXIETY_FROM_DEATH* is the frequency of search for the keyword ‘death’ on a particular day in a particular country, which our CBD

methodology uses as a linguistic signifier for mental health anxiety at the national level. *LOCK_DOWN* captures the nation's psychological sensitivity to the imposition of a lockdown policy; it is a vector that includes a time trend on a daily basis and a dummy variable equal to one on and after the day of imposing the lockdown, as well as the interaction of these two variables. *DEATH_NUM* is the official number of reported deaths, and this is the salient number that affects the cognition of the public. X is a vector of other confounding factors, such as the date of lockdown in neighbouring countries. The inclusion of data capturing the lockdown date of neighbouring countries can be justified from the perspective that it signals the behavioural inconsistency in handling the same anxiety employed by another group of people and their different survival strategies under conditions of uncertainty. Such differences in policy choice and asymmetries in hesitation can raise anxiety further.

First, we employ a difference-in-differences approach using an OLS with time trend where the day of lockdown in the home country is considered a treatment and the effect of the difference-in-differences is the interaction between the daily time trend and the dummy equal to one from the day of treatment onwards (Conley & Taber, 2011). We correct for weekly seasonality and explore the impacts of the national and international lockdowns on anxiety levels as expressed in the keywords. Second, we employed an interrupted time series analysis (ITSA), where the interruption is the national or international lockdown, and used the above-mentioned seasonalities, the lockdown date in home country, and additional lockdowns as confounding factors.⁶

III. RESULTS

An initial look at the temporal evolution of the frequency of search for the word 'death' demonstrates that this word has grown in interest since the start of the Covid-19 pandemic, as shown in Fig. 1a. This pattern is sinuous and varies in magnitude but the trajectory is upward for both Italy and the UK, which means that the pandemic has generally increased the experienced anxiety on average for both countries. We interpret the differences in the trends observed in Fig. 1a as a reflection of the cultural differences across space in terms of cultural relativity. We also see different magnitudes in the responses to the same treatment across space, and this effect is termed by CBD as cultural hysteresis (Tubadji et al., 2016).

To crosscheck that we are observing a death anxiety effect and not simply a general increase in the volume of online searches due the requirement to stay at home during the lockdown, we compared the trend in searching for the word 'death' with the trend in searching for the word 'suicide', as shown Fig. 1b. Instead of an upward trend, the search trend for the word 'suicide' was downward. This is a confirmation that our linguistic analysis approach

captures the public mental state in a constructivist and deconstructionist manner, where notions and mental states build up attitudes towards the reality in a culturally contextualized manner and keywords signify and statistically record the evolutionary development of the context.

A closer look at the tendencies in the three countries under analysis can be gained by comparing descriptive statistics of the variables of interest before and during the pandemic, as shown in the Appendix. We compared keyword searches in the UK and Italy against the control country of Sweden and three main insights emerge.

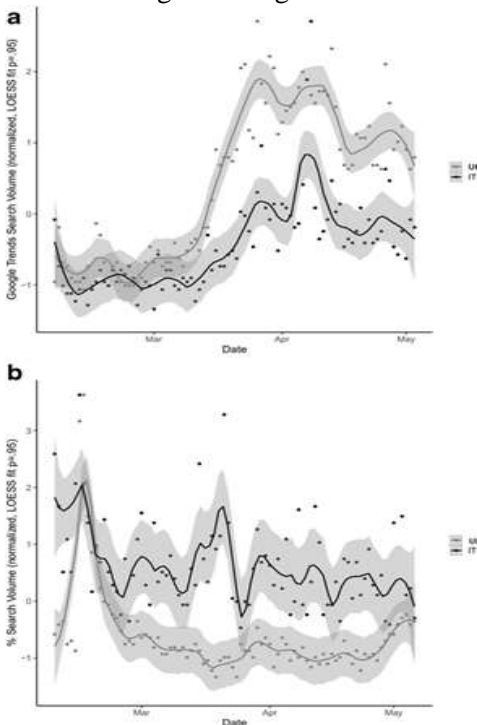


Fig. 1 (a) Searches for ‘death’ before and during the pandemic

(b) Searches for ‘suicide’ before and during the pandemic. Note: Figure 1a & b are derived using Google trend data

First, the population of Sweden (Italy) searched for the word ‘death’ least (most) often both before and during the pandemic.⁷ Second, the pandemic increased the frequency of search for the word ‘death’ across all countries.

Difference-in-Differences Analysis

A difference-in-differences approach is selected to obtain deeper empirical insight into the preceding descriptive statistics. Table 1 presents the results for within country differences in anxiety from death before and after the

implementation of the lockdown policy. Table 1 exhibits three specifications. Specification (1) tests H01 and explores the effects of lockdowns on national levels of public anxiety from death. Specification (2) tests H02 and explores the effects on national levels of public anxiety from death associated with the publically announced number of deaths, which signals uncertainty for life. Comparison of the results in Specifications (1) and (2) helps to distinguish whether the effects hypothesized in H01 or H02 dominates in model (1). Specification (3) augments the model by adding the treatment effect and its temporal and spillover interaction terms, thereby considering the effect of the Italian lockdown on anxiety in the UK and vice versa. This captures international spillover effects and tests H03.

Table 1 offers several insights. First, the early imposition of a lockdown in Italy had a detrimental effect on the mental health of both the Italian and UK populations. Once the lockdown was subsequently imposed in the UK, this decreased anxiety especially in the UK. This result is consistent with CBD assumptions about herd signalling and anxiety effects, as described in Hall (1966): the UK was experiencing increased anxiety because it was observing Italy taking much more intensive precautions under the same pandemic threat. The inconsistency of the UK policy was effecting negatively Italy as well. Across all countries, greater mortality had a positive statistically significant effect on anxiety by increasing both the explanatory power of the model and influencing the rest of the effects in the estimations, and this mortality effect on anxiety was more intense in Italy.

Between country differences in death reporting practices existed (e.g. whether deaths occurred in hospitals, care homes or domiciles), yet what plays a comparable role is the fact that the reported number of deaths is the salient effect of the pandemic that people observe. Thus, the response to the differences in the methods of counting and public announcement of numbers has an important behavioural effect rooted in cognitive biases (Kahneman & Tversky, 1979). The effect of the UK's decision to introduce a lockdown seems to have decreased anxiety in Italy; our interpretation of this is rooted in a behavioural explanation of signalling confirmation of the chosen strategy for survival.

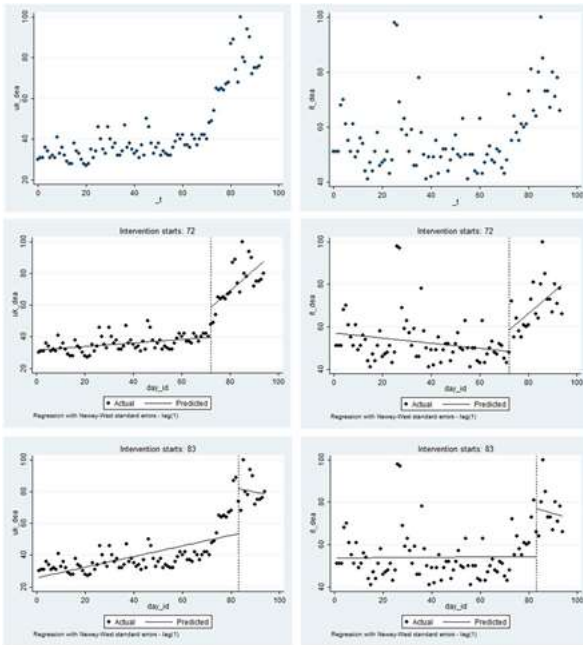


Fig. 2 Death anxiety with different lockdown effects: UK vs. Italy. Notes: the left column are figures for the UK while those for Italy are on the right. The first row of figures shows the frequency of searches for the word 'death' in Google. The second row of figures considers the day of lockdown in Italy as a treatment for the interruption of the time searches in both UK and Italy (12 March 2020). The third row presents the interruption of the time series associated with the lockdown in the UK (23 March 2020)

IV. CONCLUSION

Public policy establishes the framework within which society functions and plays a significant role in shaping the intricate socioeconomic choices and actions that are ingrained in a particular location. The presence of context helps to elucidate the variations in reactions and outcomes of identical situations in different locations, as well as the uneven responses to the same unexpected event. This research proposes a Culture-Based Development framework to analyze and comprehend the culturally ingrained spatially different variations in public policy responses to the Covid-19 outbreak, specifically focusing on decisions on lockdown policies. Analyzing the sensitivity, or mental health response, of the population to the lockdowns in the UK and Italy, and comparing it to the "business as usual" approach in Sweden, allows for the examination of three broad categories of consequences. Initially, we conducted a comprehensive analysis of the impact of the public policy on lockdown in the country where it was implemented, as well as its geographical influence on a neighboring country. Italy and the UK

were actively involved in the global monitoring of the pandemic issue through their media, making them ideal for examining cross-country spillovers. The analysis successfully differentiated the impacts resulting from various public policy initiatives from the impacts resulting from the objective factor of the number of deaths. The analysis differentiated between inter-country cultural relativity, which refers to the populations' sensitivity towards public policies that are considered culturally relevant by institutions in different countries, and inter-country cultural hysteresis, which refers to variations in the degree of sensitivity to the same trigger, namely the COVID-19 pandemic. Consequently, variations in death-related anxiety were observed in Sweden, Italy, and the UK both before and after the epidemic. Similarly, variances were found in how the populations of these countries psychologically reacted to the public lockdown measures.

In other words, our study aims to clarify the moral responsibility of public institutions in mitigating the detrimental effects of mental health issues, as well as the variations in their success in doing so across different regions. We provide evidence that public institutions have an impact on the mental well-being of individuals in all countries through their public health policies. However, the varying degree of success that institutions have in reducing the negative effects on mental health in different countries is not solely attributed to the type of public policy implemented, but also to cultural differences within the populations. In this case, these cultural differences refer to the varying levels of anxiety experienced by local populations in relation to death. It is evident that institutions play a role in reducing public mental distress through their operations. However, the extent to which they are successful in alleviating mental distress depends on the local population's inclination to experience mental distress related to the specific issue handled by the institutions.

We utilize Google trend data on the frequency of searches for the term "death" as an indicator of the level of anxiety about death in a country. We use difference-in-differences and interrupted time series analysis methods to determine whether there are any effects of the public lockdown policy in the UK and Italy. In order to capitalize on the existence of a natural quasi-experimental environment, we used Sweden as a control group due to its lack of a public lockdown policy. The findings of our study validate that the prompt implementation of a lockdown in Italy resulted in heightened anxiety levels in both Italy and the UK. This may be attributed to the disparities in policy decisions, which indicated a considerable amount of uncertainty in effectively addressing the Covid-19 outbreak. In keeping with this perspective, we observe that the implementation of the lockdown in the UK resulted in a decrease in anxiety levels in both the UK and Italy. This could be attributed to the fact that the lockdown served as confirmation that the prevailing belief was that lockdowns were the appropriate approach for survival. Although the current findings indicate that a country's lockdown measures had an impact on the mental well-being of its populace, the influence of

comprehending the daily death toll data had a stronger effect on mental health. Due to the larger fatality numbers in Italy, they had a significant impact on the country, overshadowing other consequences. In contrast, public policy in the UK remained influential throughout the whole pandemic. The results were verified by comparing them with different words associated with concern about death (such as "suicide") and a neutral word (like "chair") that is related to the concept of the "IKEA-effect". The robustness checks conducted provide evidence that the narrative economics of language method, proposed by the Cultural-Based Development approach, is sufficiently strong to generate evidence supporting economically significant policy. Additionally, we demonstrated how this approach can be utilized to assess the effects of public policy and public statistics on the mental well-being of the general population. In conclusion, we conducted a comprehensive examination of death-related anxiety across a 24-hour period. Our findings indicate that the periods of highest vulnerability, characterized by heightened concerns about mortality, occur during the late evening and early morning hours.

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