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THE ENTREPRENEURIAL LANDSCAPE AND IMPACTS OF COVID-19

Robert J. Lahm, Jr., Western Carolina University

ABSTRACT

Numerous sources of data that are traditionally used by small businesses and entrepreneurship researchers, primarily from government entities, have not caught-up with actual conditions on the ground. COVID-19's impact on the social and economic picture around the globe has been like watching a train wreck taking place on "Main Street" in slow motion. Doomsday "preppers" and at least some of their prognostications and suggestions moved towards the mainstream, having greater acceptance than before. One of the more popular books on Amazon, covering the topic of canning and preserving foods, was on backorder for at least several weeks, and as of the time of this writing, it has been months since one could easily acquire canning supplies such as jar lids on retailers' shelves. There were shortages on major websites of sewing machines, elastic, and other materials—even those that are substitute goods such as coffee filters, when individuals and groups engaged in making their own masks. Panic buying also wiped out inventories of hand sanitizers, disinfecting aerosol sprays, bleach, toilet paper, and numerous other products that consumers felt they might need, including guns and ammunition. A vast majority of businesses have not fared well. Hospitality, tourism, and the restaurant industries have been hit hard, and there are also disparate impacts among certain demographic groups relative to small-business owners. Bad actors are also hard at work, launching scams. Many have essential items for resale on websites such as Craigslist and eBay. This research presents a systematic review of the impact of COVID-19 on small businesses. It further examines the phenomenon in a broader socioeconomic and cultural context.

Keywords: COVID-19, small business, entrepreneurship, innovation, U.S. and global economy

INTRODUCTION¹

"COVID-19 constitutes both a health crisis and an economic crisis" (Stephens, Jahn, Fox, Charoensap-Kelly, Mitra, Sutton, & Meisenbach, 2020). Three key themes arise in connection with this study: Implications for economic development; public policy; and, the role of free enterprise in a pre- and post-COVID-19 economy. Gopinath (2020), writing on the International Monetary Fund's blog, declared via a post title that: "The 'great lockdown' has

¹This paper, while it is a unique work product, is connected to an ongoing research stream (including literature review databases) pertaining to the small business and gig economy.

been the ‘worst economic downturn’ since the Great Depression.” Impulse buying has created major fluctuations in the availability of certain goods (Ahmed, Streimikiene, Rolle, & Duc, 2020). Certain industries and jobs have been affected more than others (Brown, 2020). Travel, hospitality, restaurant, and other industries (which involve higher degrees of personal contact) have been among the hardest hit (Brown, 2020). Sports arenas, movie theaters, amusement parks and other venues that engage large gatherings have been closed, opened under restrictions, and might close again (Gunay & Kurtulmuş, 2021). Small-business owners have been threatened with the loss of business licenses, fines, forced closures, and jail time; individuals as well, have been subjected to stay-at-home directives (Knowles, Ettenson, Lynch, & Dollens, 2020) that often directly correspond with business operations (or the lack thereof). Education is in a state of upheaval (Goings, 2020) as well as government services (Bana, Benzell, & Solares, 2020) of all kinds. Another term, “non-essential” (Cowling, Brown, & Rocha, 2020), is also now in popular use. There are non-essential jobs and non-essential businesses, as well as some argument as to what constitutes the opposite of these, i.e., essential (the same logic is being applied relative to vaccine eligibility and distribution). “Governments have also imposed the forced closure of businesses and subsequently placed severe restrictions on how they do business. Not since the Second World War have governments assumed such a managerial role in capitalist economies” (Greene & Rosiello, 2020, p. 586).

At the same time, evidence of abundant ingenuity (and resolve) can be found on social media (as they are amplified by traditional media). DIY’ers organized in groups and shared information about how to make breathing masks and other personal protective gear. Policy mandates, lessened demand, health concerns and other considerations have resulted in the closing of stores, factories, and many other businesses (Fairlie, 2020). Toilet paper was wiped out from store shelves (Kirk & Rifkin, 2020). Terms such as “social distancing” (Bana et al., 2020; Gunay & Kurtulmuş, 2021) have become familiar. One company that has been affected in a positive way by social distancing is Zoom, which has gone from a relative niche player in business communication (i.e., videoconferencing) services to being a household name (Galgani, 2020). According to Kickul and Lyons (2012), social entrepreneurs and their efforts are directed toward a “social mission, using the processes, tools, and techniques of business entrepreneurship” (p. 19). The aforementioned anecdote about mask-making and community organizing exemplifies social entrepreneurs’ efforts well. Bad actors are also hard at work, launching scams (Federal Trade Commission, 2020; Consumer Action, 2020) and hoarding (Kirk & Rifkin, 2020) essential items (including for the purpose of resale on websites such as Craigslist and eBay). With the above as a brief sketch to depict some highlights of 2020, this research aims to more systematically review COVID-19 impacts and entrepreneurs’ responses.

LITERATURE REVIEW

As previously noted (Footnote 1), the topic of interest outlined hereunder is part of a continuing research stream, the aim of which is to make meaningful contributions to the literature of the small business and entrepreneurship discipline (which in turn, is integral to the economy and well-being of a citizenry at large). Version 9.1 of the list entitled, “*Core*

publications in entrepreneurship and related fields: A guide to getting published,” compiled and maintained by Jerome Katz (2019), has been regarded as authoritative in determining coverage of the topics at hand in the scholarly literature that is associated with these disciplines. As an observation, scholarly research—often with a long publication cycle—has a limitation relative to exploring the impact of COVID-19 in terms of providing immediacy.

Other kindred go-to sources for small business and entrepreneurship researchers, also have demonstrated themselves to have a similar limitation. For example, the U.S. Small Business Administration’s (SBA) Office of Advocacy publishes an oft-quoted FAQs document, updated annually (US Small Business Administration, 2020a). In reviewing the SBA’s most recent release, which is dated October 2020, one would likely not even imagine that a global pandemic (crisis) existed until arriving at a footnote at the bottom of the first page and then headings on the second page of the document. The web page which hosts the SBA’s *December Economic Bulletin* states [a rather apparent lament]: “the lack of recent data on business closures makes it difficult to assess the overall state of small business” (US Small Business Administration, 2020b). As observed by Fairlie (2020), “the early effects of COVID-19 on small business and entrepreneurs are not well-known because of the lack of timely business-level data released by the government” (p. 727).

A local computer database comprised of approximately 220 items associated with small business/entrepreneurship, freelance and gig economy (current through February 2020, but pre-COVID-19) has been a key resource for this present research, relative to benchmarking the state of the entrepreneurial landscape before the disruptions of a global pandemic inserted themselves. This earlier database has been combined with results from post-COVID-19 searches using library databases current through mid-January 2021. Library database collections including those from *ABI/INFORM*, *Ebsco*, and *ProQuest* have been consulted. Filters have been applied to these library database searches, setting limits as follows: scholarly sources and full text available. A filter was also applied to limit results to business disciplines. Most importantly, for the benefit of other future researchers who may wish to discern a breadcrumb trail, the reasons for narrowing results to business disciplines are two-fold. First, across disciplines and around the globe, there are millions of results relative to scholarship pertaining to all aspects of COVID-19 (medical/health care disciplines being a prime example, as one might easily guess). Secondly, as stated, this present research is focused on contributing directly to the literature that is associated with small business and entrepreneurship (for the benefit of future scholars whose work is focused in these areas).

Cross-referencing the aforementioned core publications list by Katz (2019), in the mid- to latter part of 2020, articles addressing aspects of COVID-19 included: (one) article in *Entrepreneurship Theory and Practice* (Audretsch & Moog, 2020); six appeared in the *International Small Business Journal* (Cowling et al., 2020; Greene & Rosiello, 2020; Manolova, Brush, Edelman, & Elam, 2020; Morgan, Anokhin, Ofstein, & Friske, 2020; Nummela, Paavilainen-Mäntymäki, Harikkala-Laihinen, & Raitis, 2020); and one article was published in the *Strategic Entrepreneurship Journal* (Alvarez & Barney, 2020). Both of the latter two journals are in the UK; no slight is intended in any context—this is merely to support the

observation that the literature that is specific to small business and entrepreneurship still has some catching-up to do.

The software used for the resulting main database for this paper as a whole—approximately 375 artifacts/records—allows for attachments (e.g., PDF, Excel, and images) in connection with individual bibliography items (or if one prefers: database record). Additional local databases, in support of research on topics such as social entrepreneurship, innovation, and new product development, comprised of hundreds of artifacts have served to further inform this present research on the periphery (it is assumed under a qualitative framework that the relevance of an item might come to the attention of the researcher as analysis ensues). Multiple search strategies have been used to develop databases like the ones mentioned above, as an ongoing stream of research has been pursued over a period of several years.

Finally, and relative to the grand total and description of artifacts available to inform this research, items of interest have also been collected from numerous other sources beyond well-known library databases such as those indicated above. As examples, reports from research organizations such as the NFIB Research Foundation; documents produced by government agencies, e.g., Congressional testimony from hearings (typically captured as transcripts and publicly available video content); and content from popular press sources have been captured. As is well known to scholarly researchers, one would normally prefer to avoid popular press sources. However, it has been necessary to include these under the circumstances, given scholarly research (and traditional sources of data as discussed above) are slowly emerging. Even if such popular press sources such as the business press and blogs may be lacking in rigor and regarded with some suspicion, they do at least recognize that conditions on the ground for small businesses and millions of others, such as individuals who are now displaced and unemployed, have drastically changed; they can also sometimes point to original source materials that are more authoritative.

METHODOLOGY

Under a qualitative researcher's framework, the role of the researcher is to ask questions, collect data, and to identify patterns and themes under a qualitative paradigm; the researcher's concurrent objectives are to interpret meaning(s) and report findings. Attachments, as discussed above, are identified as artifacts (besides attachments as described, other types are allowable in qualitative studies of a different nature: pictures, film, sketches, ethnographers' field notes, as examples). All artifacts may be regarded as sources of data, and these may in-turn be analyzed under a qualitative research paradigm (Creswell, 1994; Hodder, 1994; Strauss & Corbin, 1994). Where similar or the same patterns may present themselves through multiple forms or sources of data, confidence in researchers' findings may be increased through triangulation (Caporaso, 1995; Maxwell, 1992). On the other hand, data that is lacking in credibility (or fitment relative to the study of a given phenomenon) may be discounted or dismissed (Caporaso, 1995). From patterns in data, the qualitative researcher seeks to establish theoretical frameworks while using a constructivist approach (Barry, 1996; Schwandt, 1994). Such frameworks are not intended to be or presented as being generalizable. Rather, where little is known about a phenomenon due to a

lack of prior scholarly research or other foundational resources, such qualitative research approaches may be deemed necessary.

DISCUSSION

Overview

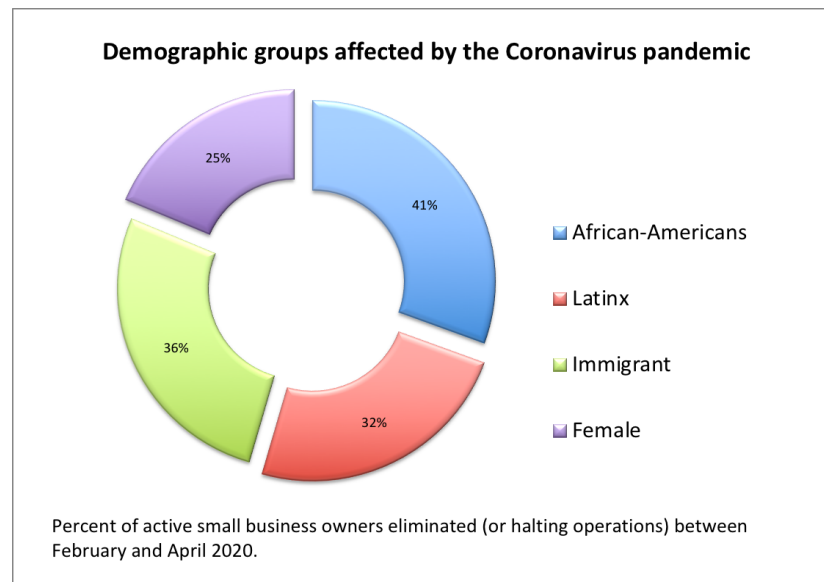
Freelancing, home-based business pursuits, self-employment, and the gig economy had been trending upward (Lahm, 2020), at least, prior to the insertion of COVID-19 into the global social and economic picture. For instance, Dourado and Koopman (2015) utilized IRS 1099-MISC form data and concluded: “The shift toward more contract work is a real and dramatic change in the labor market.” Following the Great Recession (Katz & Krueger, 2016; Larrimore, Durante, Kreiss, Park, & Sahm, 2018), small business start-ups have also been rebounding. The U.S. Small Business Administration’s (SBA) Office of Advocacy defines what constitutes a small business based on size: businesses with fewer than 500 employees.

According to the SBA’s latest FAQ document (“Frequently asked questions about small business,” 2020), there were 31.7 million such small businesses in 2017, according to the most recent published data as of October 2020. In fact, 99.9 percent of all firms in the U.S. fall under this employees-size-based threshold. Just over eight out of ten (81 percent or 25.7 million) small businesses do not have any employees (labeled non-employers); the other 19 percent (6 million), do have paid employees. However, as suggested, now we are just not completely sure exactly where small businesses stand (researchers are extrapolating as best they can). Post-COVID-19, data are coming in. What we do know, is that many small businesses and industries, government entities, and economies—in fact the entire global economy—has been hit hard; individuals in all walks of life have tried to adapt; some have failed to do so altogether, and others have demonstrated resiliency to some degree or another. We also know that history has demonstrated that there is often opportunity in times of adversity (Bacq, Geoghegan, Josefy, Stevenson, & Williams, 2020; Dobson, Nieto, Dobson, & Ochoa, 2019; Greene & Rosiello, 2020).

Hardest-Hit Businesses

Fairlie (2020), extrapolating from CPS (Current Population Survey) data from the Bureau of Labor Statistics, found demographic patterns among small-business owners who have been hit the hardest as shown below in Figure 1:

Figure 1
Small businesses that have been eliminated or have halted operations².

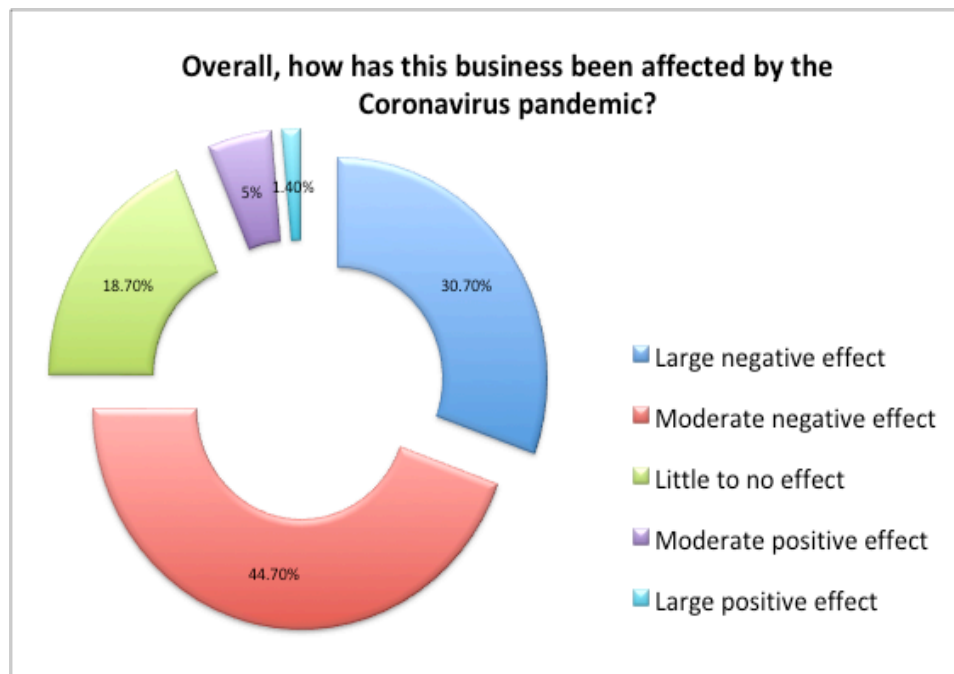


Fairlie (2020) characterized findings relative to patterns that were discernable across gender, race, and immigrant status as “alarming” (p. 728). Figure 1 illustrates that between February and April 2020, 41% of active African-American business owners experienced the largest losses, i.e., were eliminated; 32% of Latinx business owners halted activity; 36% of immigrant business owners, and 25% of female business owners, suffered drops in business activity as well. Although to a somewhat lesser degree, impacts from COVID-19 along demographic lines were found to persist through May and June 2020 (with June marking the end of the data set/period employed, included in Fairlie’s research).

The U.S. Census Bureau’s *Small Business Pulse Survey* (US Census Bureau, 2021), is shedding some light on business owners’ perceptions of the impact as illustrated in Figure 2:

²Figure developed from analysis in Fairlie (2020). The impact of COVID-19 on small business owners: Evidence from the first 3 months after widespread social-distancing restrictions. *Journal of Economics & Management Strategy*. doi:10.1111/jems.12400; “Patterns across gender, race, and immigrant status reveal alarming findings” (p.728).

Figure 2
Coronavirus pandemic's effect on small businesses (national averages)³.



As shown in Figure 2, at the end of 2020 and the beginning of 2021, just over 30% of businesses reported a “large negative effect.” This percentage is down from that in 2020, when just over half of businesses reported significant distress (Brown, 2020). On the other end of the spectrum, only about one-and-a-half percent reported a “large positive effect.”

COVID-19: An Evolving Story

Table 1 below presents a collage of fifty subject lines collected between February 2020 and January 2021 in a researcher's email account (in order of newest first, to oldest last). Since some email account search tools vary in robustness, it may be helpful to know that the account provider is Google's Gmail service, using the search term “COVID-19.” Numerous email subject lines are not included as they were similar, along the lines of “what we are doing to help” from banks, insurance companies, consumer organizations, etc. Many are articles forwarded

³Figure developed from data published by The U.S. Census Bureau's *Small Business Pulse Survey* [extracted using pull-down menus; survey data collected from 12/28/2020 to 1-3-2021]. Percentages in the chart presented are rounded. Retrieved January 15, 2021, from <https://portal.census.gov/pulse/data/>

from news organizations' websites. Being regarded as data—which they are under a qualitative frame—such subject lines could be useful as one means of documenting an evolving story.

Table 1
COVID-19: Subject Line Collage

Unemployment claims jump to highest level since August amid COVID-19 surge
UC San Diego places COVID-19 test kits in vending machines throughout campus
COVID-19 restrictions force military veteran to close candy shop
CEO of BrewDog offering bars as COVID-19 vaccination venues: 'We have waiting areas, huge refrigerators'
COVID-19 vaccine outlook prompts businesses to dust off return-to-office plans
COVID-19 upended Americans' finances, just not in the ways we expected
SimpliSafe's holiday 'Social Distancing Sweater' sells out, supports COVID-19 charity
Celebrity chef José Andrés transforms shuttered restaurants to feed the hungry amid COVID-19 pandemic
COVID-19 pandemic puts squeeze on pension plans
Coronavirus tracking apps having 'modest' impact amid pandemic, expert says
Coronavirus breathalyzer test is a 'game changer' for economy
'Very dark couple of weeks': Morgues and hospitals overflow
Coronavirus passports with vaccination info in development: Report
Nail salons fear for survival during COVID-19's latest spike
NYC bar in COVID-19 hotspot refuses to shut down after state yanks liquor license
Macy's Thanksgiving Day Parade will go on with no audience due to COVID-19
Coronavirus sickens nearly 1,000 Cleveland Clinic health care workers
Rich New Yorkers are hiring line-waiters to sit in COVID-19 testing queues
Retailers brace as COVID-19 bears down on consumers and economy
Airport COVID-19 symptom screening 'ineffective,' CDC report says
Coronavirus tests delivered by drone pilot project in Texas
Chipotle faces employee shortages as COVID-19 cases spike
American shoppers panic-buying as coronavirus spike aggravates year of upheaval
Home is where Americans feel safest amid coronavirus pandemic, survey finds
WHO warns against COVID-19 lockdowns due to economic damage
Grocery stores, food producers beef up inventory for potential second wave of COVID-19, holiday shopping rush
Small business leaders urge Congress to pass standalone COVID-19 relief package
Hard ball: COVID-19 slams Cleveland's baseball bars, clubs
Maine inn linked to coronavirus outbreak from wedding gets license reinstated
Friday night takeout is keeping U.S. restaurants afloat during economic, COVID-19 crises
We need to take care of long-term COVID-19 patients
Safely reopening schools and providing students with quality education
This COVID-19 "long-hauler" has had symptoms for 120 days
Which hand sanitizers are toxic or ineffective?
Scam Gram: Saving you from COVIDiocy
Temporary emergency video notarization
Communicating on social media during COVID-19
Harvard prof calls homeschooling 'dangerous,' says it gives parents 'authoritarian control' over kids
Apple, Google announce joint COVID-19 contact tracing tech
Las Vegas doctor explains how 'proning' COVID-19 patients can be 'difference between life and death'
Coronavirus: Was your flight cancelled?
Coronavirus: Financial help ahead; more left to do!
Professors: Tips during COVID-19

Tax deadline extended to July 15
GOP senator told donors about COVID19...but no one else
An important update on coronavirus
Coronavirus update: Operation Purple
Coronavirus can remain in air for 3 hours, live on plastic for days, new study says
Complementary software offering for organizations transitioning to remote environments
Scam gram: Inoculate against coronavirus cons

Societal Responses: Pivot (or Else)

Consumer reactions to COVID-19 have included panic buying and severe shortages; some of the hoarding behaviors of consumers were likely exacerbated by their actual witnessing of empty store shelves and the heightened credibility of extreme survivalists, a.k.a. doomsday “preppers” (Kirk & Rifkin, 2020, p. 125). “The COVID-19 pandemic paralyzed the world and revealed the critical importance of supply chain management—perhaps more so than any other event in modern history—in navigating crises” (Craighead, Ketchen, & Darby, 2020, p. 838). Sales of Consumer-Packaged Goods (CPG) in numerous categories, especially of goods related to basic hygiene and personal protective gear spiked. Consumers caused widespread shortages when they spent more on toilet paper in mid-March (2020) than on any other category (340 of these are tracked) in grocery stores; toilet paper sales spiked again to 5th place in November (NC Solutions, 2020). There were hand sanitizer shortages; also, masks, gloves, face shields, and similar gear was depleted (Güntner, Magro, van den Broek, & Pratsinis, 2021; Thomson & Bullied, 2020). Small breweries, liquor distilleries, and larger businesses in the cosmetics industry such as L'Oréal, LVMH and Nivea, realized that they could pivot and stepped-in to use their facilities for making hand sanitizers (Obrenovic, Du, Godinic, Tsoy, Khan, & Jakhongirov, 2020; Thomson & Bullied, 2020; Von Krogh, Kucukkeles, & Ben-Menahem, 2020).

Pivoting on the part of small businesses may occur at any time; the motivation to alter a business model could be exogenous shocks (Cowling et al., 2020; Morgan et al., 2020), such as the pandemic, or opportunism in circumstances that are less dire. However, some would argue that “all businesses must pivot their business models in times of tumultuous change, simultaneously reducing risk and seizing new opportunities” (Manolova et al., 2020, p. 481). There are numerous accounts in the popular business press of creative responses on the part of entrepreneurs, many of which are off-the-beaten-track. For instance, a \$1.5 million face masks, widely publicized as the world’s most expensive, was commissioned by an unidentified buyer from an Israeli-luxury jewelry brand, Yvel. Proceeds were used to provide back pay for the firm’s employees, who had endured shortages for several months (Davis, 2020).

Pivoting is not limited to small business. Organizations of all kinds shifted operations, at least in part, to workers’ homes, with some inconclusive results in terms of impacts on productivity (Bolisani, Scarso, Ipsen, Kirchner, & Hansen, 2020). Working from home created both hardships and opportunities for products and services to arise (Bana et al., 2020; Bolisani et al., 2020; Obrenovic et al., 2020). “The pandemic has also drastically increased the presence of digital technology in our personal lives” (Gunay & Kurtulmuş, 2021, p. 2). Collado-Borrell, Escudero-Vilaplana, Villanueva-Bueno, Herranz-Alonso, and Sanjurjo-Saez (2020) conducted a

descriptive study of smartphone apps associated with COVID-19. Their method included systematic searches in Apple's app store (iOS platform) and the Google Play Store (Android platform); searches were conducted between April 27 and May 2, 2020. They identified at that time 114 apps, and categorized these by their primary use(s), concluding that "the most common purposes of the apps are providing information on the numbers of infected, recovered, and deceased patients, recording of symptoms, and contact tracing" (p. 1). According to their analysis, about half of the apps studied were developed by government agencies; origins were global in scope. One limitation is that their findings were tied to medically-oriented applications.

Many other types of apps have been emerging. In an article addressed to an audience of mobile app developers, Agrawal (2020) outlined opportunities in light of new conditions brought about by COVID-19. These included E-commerce apps—which would be inclusive of myriad mobile shopping apps for grocery and food delivery, pharmacy apps and others that would facilitate consumers' access to shopping goods while they may be in lockdown or restricted access situations; fitness apps—these may serve to aid consumers in the absence of complete access to gyms and fitness centers; proper diet apps; recreational activities apps; video calling apps; mobile payment gateway apps; learning apps, and cooking apps. The author noted that the list provided was just the tip of the iceberg relative to needs and development opportunities.

Morgan, et al. (2020) described instances of small businesses pivoting while focusing on social value. Healthcare workers and other employees who were deemed essential, for example, received donated meals from locally-owned restaurants during periods when shelter-in-place orders had been issued by government authorities. Mandatory shutdowns, however, were more difficult for some types of businesses to contend with via pivoting. It's one thing for a restaurant to be partially open with outdoor dining and take-out services operating, but another altogether to cease operations entirely.

Innovation

There are some key differences relative to COVID-19, as compared to the last major pandemic, which took place approximately 100 years ago: the Spanish flu of 1918–1920 (Greene & Rosiello, 2020; Smith, 2020). While we still do not know the full impact of COVID-19, and additional strains appear to be emerging, technologies have evolved such that "ultrafast innovation" (Von Krogh et al., 2020, p. 9) has been made possible in a variety of fields. Among the newer technologies making a difference are artificial intelligence (AI), cloud computing, and data analytics (Taylor & Francis Online, 2020; McCausland, 2020b; Von Krogh et al., 2020). McCausland (2020b) provided several examples of AI applications in use which "helped fill the gap when COVID-19 strained medical staff and healthcare systems around the world" (p. 2). One such AI example was a hospital in Florida which was attempting to identify and separate visitors who might have been infected from its personnel and other patients using screening at entrances to identify signs of infection using thermal scans, sweating, or facial discoloration.

As observed by Gunay and Kurtulmuş (2021), "Through acceleration of the digital transformation, remote work, e-learning, and even remote health services have become practicable" (p. 2). Related to this transformation, digital manufacturing, e.g., 3D printing, had

been arising as a game changer prior to COVID-19; but in response to the pandemic and shortages of Personal Protective Equipment (PPE) “companies big and small began manufacturing face masks, face shields, swabs, and parts for ventilators to help solve the shortage” (McCausland, 2020a, p. 62). Larger businesses such as Ford Motor Company, 3M, and General Electric, partnered to produce protective medical equipment (Obrenovic et al., 2020); Dyson, known for its innovative vacuum cleaners, is using air compression technologies for medical patient ventilators (Von Krogh et al., 2020).

These same authors cited immediately above also discussed repurposing in the pharmaceutical industry. Repurposing generally refers to finding new uses for existing drugs, which can lead to accelerating the development of treatments to impede the progression of a given adverse condition, to cures, and/or preventative interventions, e.g., as suggested here: a COVID-19 vaccine (Gopinath, 2020; Smith, 2020). The notion of repurposing is not limited to pharmaceuticals; “Jeff Bezos and Elon Musk repurposed manufacturing capacity and expertise from their respective rocket enterprises, Blue Origin and SpaceX, and to 3D-print face shields for health care workers” (Von Krogh et al., 2020, p. 9).

CONCLUSION

The intent of this research has been to advance a greater understanding of where we are going from here in the pandemic era. The COVID-19 pandemic has “afflicted the health, economy, politics, culture, and psychology of almost the whole global system” (Tuncer, 2020, p. 1). Cowling, Brown and Rocha (2020) studied the savings patterns of SMEs, while acknowledging a limitation to their findings in that they were specific to the United Kingdom. Nevertheless, some authors suggested that SMEs shared similar overall savings patterns around the globe (i.e., they typically have very limited access to capital regardless of location) and suggested: “If hundreds of thousands of smaller businesses are at risk of running out of cash, given a lengthy period of time when sales incomes are either falling, or have stopped completely, this represents a systemic risk to most economies given the predominance of SMEs in the economic landscape” (p. 594). Anecdotal as some sources of data for further analysis may be, we have been witnessing a “train wreck on ‘Main Street.’” Before COVID-19, small businesses had their challenges. With some unfortunate irony, access to affordable health care was at the top of the list for decades, according to NFIB (National Federation of Independent Businesses) research (Wade, 2016).

Glimpses of entrepreneurs’ reactions and innovations have emerged, along with hope for recovery. Smith (2020) has declared the beginnings of a “COVID Renaissance” (p. 60):

From the destruction of the COVID-19 pandemic will spring thousands of innovations, large and small. Hundreds of new businesses already offer goods and services—like simple face masks and Plexiglas shields—designed to protect healthcare and service workers and customers in accordance with new regulations and social norms. Companies are developing new sanitation products, new designs for airline seats, and new restaurant layouts. Business office layouts and fitness center designs are changing, and new software is being developed to assist with selling event tickets for entertainment venues. Online grocery shopping and telemedicine have exploded from a tiny niche to a major business trend (p. 60).

Now, small business and citizenries at large continue in their struggle to address a far more complex problem: How to rebuild a sustainable economy in a world that is being ravaged by a global pandemic?

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THE IMPACT OF THE COVID-19 PANDEMIC ON GLOBALIZATION AND FOREIGN DIRECT INVESTMENT FLOWS

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ABSTRACT

The COVID-19 pandemic has inflicted economic pain on the global community as well as physical pain. The pandemic has compounded a series of global problems that preceded the outbreak. These problems include growing nationalism, protectionism, and other forms of anti-globalization. Sharp declines in foreign direct investment (FDI) flows have been recorded, particularly in those developing countries with the greatest need for capital infusions. The short-term effects of the pandemic are already visible with both demand-side and supply-side shocks damaging the global economy. Traditional supply chains have been particularly disrupted. The long-term impact is more difficult to forecast. Whether anti-globalization and declining FDI flows continue over time depends on how national governments, global health agencies, and multinational enterprises ultimately address the underlying economic issues of the pandemic.

Keywords: Pandemic, Multinational Enterprises (MNEs), Foreign Direct Investment (FDI), Global Supply Chains (GVCs), Globalization.

INTRODUCTION

It has been well-established in the scholarly and commercial literature that economic globalization over the past quarter of a century has contributed positively to global growth. An important part of globalization has been the promotion of foreign direct investment (FDI) including the free movement of capital, goods, services, and personnel across international borders (Erixon, 2020). Capital-poor developing countries have been beneficiaries of capital infusions by multinational enterprises (MNEs). Manufacturing companies have been attracted by favorable labor market conditions in developing countries and by the related cost advantages of establishing supply chains in these regions.

Historically, it can be demonstrated that FDI, as a component of globalization, has produced a positive-sum game, bestowing benefits on MNEs, on capital-exporting industrialized countries, and particularly on capital-importing developing nations (Public Response Team of the OECD, 2020; Zhan, 2020). Even before the destabilization effect of the pandemic, other global events have combined to discourage outward FDI by MNEs, including the great recession of 2008 and the global financial crisis of recent memory. Unfortunately, the pandemic has compounded these problems, leading to accelerated disinvestments.

Following an outlining of the economic benefits of globalization and FDI flows, this paper will then examine the pre-pandemic FDI climate, leading to a comprehensive analysis of the negative effects of the pandemic and of pandemic-induced government policy reactions. A

concerted effort is made to project short-term and long-term forecasts about what the future holds in this regard.

THE ECONOMIC BENEFITS OF GLOBALIZATION

This paper takes the position that the COVID-19 pandemic and the government policies it has nurtured are threatening the continuation of the efficient international allocation of resources through globalization. This is important for various reasons.

Globalization in the extreme involves the free movement of goods, services, personnel, capital, and other resources across international borders without artificial restrictions or barriers. These freedoms create a business environment that MNEs look for in locating and managing their international operations. Accordingly, this business environment nurtures and supports the flow of FDI capital abroad which in turn creates efficiencies and benefits to (a) investing companies, (b) FDI-exporting countries, and, (c) FDI-importing countries. (Erixon, 2020).

For the investing MNE, outward FDI has enabled firms to capture positive returns from their investments in research and development (R & D), innovations, and new technologies. It has opened access to new markets, thus producing new revenue streams. Outward FDI has also produced cost savings by creating supply chain linkages in areas where labor productivity/wage rate ratios are favorable. For FDI-exporting countries, benefits are linked to the success of MNEs in creating new markets and in translating production cost savings into cheaper imports and lower inflation rates. These benefits are also linked to the creation of expanded business opportunities, profits, and employment in home countries through the repatriation of FDI revenues (Kokko, 2006).

For the FDI-importing country, the benefits are even more visible and perhaps more important, particularly for relatively poor developing countries. For these countries, FDI provides capital, supplementing thin local capital markets as well as advanced technologies, and promoting both supply-side and demand-side efficiencies. Furthermore, exports are spurred as MNEs establish supply chain linkages within, and both income and employment growth are stimulated through the same effect (Erixon, 2020; Loungani & Razin, 2001). MNEs are particularly important as drivers of global trade, accounting for approximately 80 per cent of total exports (Saurav, Kusek, & Kuo, 2020). All countries, including developing countries, have benefitted from the effects of FDI in producing jobs and incomes.

PRE-PANDEMIC GLOBALIZATION TRENDS

It will be argued later in this paper that the current pandemic has already had a damaging effect on globalization—including adverse FDI flows—producing both supply-side and demand-side market shocks and disruptions. In fact, it is estimated that in 2020, the pandemic caused the largest and fastest decline in modern history in terms of international flows, including trade, FDI, and international travel (Altman, 2020).

However, it is important to evaluate the negative impact of the pandemic in its true context. Globalization is under attack and the backlash against the movement of goods, services, capital, and personnel across international borders predates the recent pandemic. The anti-

globalization movement has been visible for the past two decades, particularly with the political emergence globally of nationalism, populism, and isolationism (Fukuyama, 2020). Brexit is a good example of this political retreat from open borders.

Therefore, more governments, including in the U.S., have passed restrictive rules and regulations that make it more difficult to move goods and resources freely to and from foreign markets. This has weakened international trade, FDI, and foreign markets' sourcing. Accordingly, MNEs have been motivated to relocate production closer to those home markets where the goods will be sold, regardless of the cost implications (James, 2016).

Perhaps the greatest threat to globalization and to the economic benefits that it bestows is the modern version of "populism". This is an ideology which depicts the "people" as a morally good force and contrasts them with the so-called "elite". The elite are those who place their own welfare above the people (locally based) and who include among their ranks, large corporations, foreign countries, and immigrants.

Supporters of this movement globally include dominant political leaders who present themselves as leaders of the people and as enemies of the elite. Over the past several years, this group has included Donald Trump of the U.S.A., Marine Le Pen of France, Boris Johnson of Great Britain, Beppe Grillo of Italy, and Frauke Petry of Germany. All these national leaders embraced some or all aspects of modern populism and identified themselves as "voices of the people" (James, 2016).

Governmental anti-globalization policies were not the only source of global disruption over the past two decades. Financial instability has played a significant role as well. Weaknesses in the global financial system have been evident in the rise of the corporate debt burden; this has increased holdings of riskier and more illiquid assets by institutional investors, with growing reliance on external borrowing—particularly by developing countries. (Staff of the IMF, 2020).

Compounding the problems of financial instability and over-dependence on external funding are the contagious effects of business-cycle problems, such as the Great Recession of 2008 in the U.S. Such financial instability has spread with particularly damaging effects through trade and investment disruptions in the developing world (Grusky, Western, & Wimer, 2020).

SHORT-TERM IMPACT OF THE PANDEMIC ON GLOBALIZATION AND FDI FLOWS

FDI flows fell by 49 percent during the first half of 2020, and they are expected to fall during the second half of 2020, and during 2021 by 30 percent. This is a significant drop because FDI is a bellwether of globalization (Jetpissova, 2020; Staff of the OECD, 2020).

The slow growth of new investments and the accelerating rate of disinvestments were due to the negative impact of the pandemic on GDP growth in both developing and industrialized worlds. Stagnant growth, recessionary trends, and diminished export performances have all led to an erosion in investor confidence during this period. China, however, was an exception to this trend, enjoying increased FDI inflows during 2020 and early 2021 (Jetpissova, 2020).

Erosion in investment confidence was certainly based in part on the restrictive policies governments adopted in attempting to contain the virus. These restrictions worked towards anti-

globalization in the sense that they resulted in reduced international flows of goods, services, resources, and personnel.

It is expected that FDI flows to developing countries will be more affected by current global economic trends. One reason is that developing countries will suffer more because of greater dependency on external capital funding (Alfaro & Chen, 2012). Also, developing countries are vulnerable because the sectors of their economies are more severely affected by the pandemic, namely the primary and manufacturing sectors, accounting for larger shares of FDI inflows in poor countries than in the industrialized world (Seric & Hauge, 2020).

Through 2020-2021, the pandemic has certainly produced both demand-side and supply-side shocks. On the demand side, declines in export activity have accompanied a slowdown in FDI flows. With declining export volumes and revenues, MNEs have become less motivated to test out new global marketing opportunities. In developing countries in particular, the consequences of disease mitigation measures undertaken by governments have led to significant reductions in income generation and in employment. Disruptions have occurred in manufacturing, services, and transportation industries as well (Pak, 2020).

The corporate reaction to global demand-side shocks has been predictable. Faced with high corporate debt, MNEs have been motivated to develop a more conservative investment strategy, involving more of an emphasis on repatriation of earnings from overseas investments, with less of an emphasis on reinvestments of the earnings (Pak, 2020). Also, the evolving MNE strategy includes a diminished willingness to support subsidiary activity abroad, involving significant effects on global supply chain management (Keselowski, 2020).

The demand shocks caused by the pandemic, as argued above, will certainly produce at least a short-term disruptive effect on FDI outflows by MNEs. Predictably, the supply shocks will be more damaging. It may be noted that an important part of globalization is the effort by MNEs to establish global supply chains, particularly in developing countries, seeking to take advantage of favorable labor market conditions including efficient productivity-to-wage-rate tradeoffs.

The pandemic has created uncertainty about the future of complicated supply chain connections in distant global markets. This uncertainty is based in part on the risks of virus containment once the disease spreads in multiple locations (Nikolopoulos, Punia, Schaefer, & Tsinopoulos, 2020; Pak, 2020). MNEs are motivated to locate Global Supply Chains (GVCs) closer to home operations to avoid this risk. Questions arise about the ability of government policy in developing countries to contain the virus, as well as whether these countries will receive their fair share of the vaccines through global distribution channels (Curtis, 2020). According to the People's Vaccine Alliance, consisting of Amnesty International, Oxfam, Frontline AIDs, and Global Justice Now, in 70 developing countries around the world, only one in ten residents is expected to receive a COVID-19 vaccine during 2020-2021 (Oxfam International, 2020).

Supply chain management requires careful planning, particularly if GVCs extend well beyond home country headquarters. With supply disruptions, accurate forecasting becomes especially important. However, forecasting the evolution of a pandemic, including government

policy responses, is a complicated task, given the limited history of pandemic data and the multi-dimensional nature of the problem (Nikolopoulos, et al., 2020).

MNE managers are faced with a dilemma. On the one hand, the pandemic has disrupted—and may continue to disrupt—supply chains to create uncertainty about the future and about the post-pandemic government policies that may emerge. To what extent will these policies be restrictive and overly nationalistic, reducing the freedom that MNEs have enjoyed historically in allocating corporate resources efficiently across international borders?

However, abandoning supply chain linkages globally will not be easy. Home country consumers will continue to demand low prices, an historical by-product of efficient global supply chain linkages. Charging high prices for goods produced in high-cost home country markets will not be popular or even competitively feasible (Shih, 2020).

LONG-TERM IMPACT OF THE PANDEMIC ON GLOBALIZATION AND FDI FLOWS

The short-term negative effects of COVID-19 on the global economy are apparent and have been so since the outbreak of the virus. Both global supply-side and demand-side shocks have been occurring since the early 2020s, and they could last at least through 2021-2022. Furthermore, the severity of the shocks has been exacerbated by anti-globalization trends that predated the outbreak, including the political growth of nationalism, populism, and isolationism.

Forecasting the long-term future based on the prevailing pandemic era is a much more formidable task. Policymakers at three key levels—national governments, public health organizations, and MNEs—now operate in uncharted waters and must make difficult decisions without adequate historical data as guidance.

Faced with the challenge of the pandemic, national government policy planners must decide whether to move in the direction of more open or more closed national borders. Should the country in question risk the health of its population through the vulnerability of open borders to pursue economic gains? Should the country retreat further from permitting the free movement of goods, services, capital resources, and people across its borders, or should it placate isolationists by embracing the “populist” political movement? (Nikolopoulos et al., 2020).

A second major policy concern relates to the distribution of the COVID-19 vaccines. Major health organizations, pharmaceutical companies, and others involved in distribution channels must decide on the volume, timing, and direction of the distribution. Of key importance will be the ability of developing countries in poorer regions to attract their fair share of the vaccine.

Early evidence (in late 2020) indicates a problem in this regard. The Center for Global Development reveals that the most promising vaccines are largely covered by advance-purchase agreements, mostly for wealthy, industrialized nations. Poorer countries by the end of 2020 had extremely limited access to the most promising vaccines (Curtis, 2020). This is important because before the pandemic, MNEs had taken advantage of favorable labor market conditions in developing (complex yet profitable) vaccines—thus bestowing benefits both on the corporate bottom-line and on the growth and development of the poor nations.

With the serious supply chain disruptions of recent memory, perhaps the most important decision will be made by the MNEs themselves. The pandemic and its aftermath caused the typical MNE to move supply chain linkages closer to home, abandoning the advantages that favorable labor market conditions in poor countries provided. Will the retrenchment continue despite the competitive disadvantages of moving supply chain contracts out of low-cost markets to higher cost markets to take advantage of more political, commercial, and medical stability? The answer to this question will largely govern whether the disruptive effects of the pandemic will be long-term, or only short-term. In essence, the long-term disruptive effects of the pandemic will depend less on supply/demand conditions in global markets and more on boardroom decision-making in the MNEs, national governments, and in global health agencies.

CONCLUSION

It is clear from both the scholarly sources and the commercial press that globalization over the past three decades has bestowed benefits on both industrialized and developing countries. A major component of globalization has been the efficient transfer of foreign direct investment (FDI) from capital-rich countries to capital-poor countries. The COVID-19 pandemic has disrupted this efficient resource allocation by producing damaging demand-and-supply shocks globally, including the disruption of traditional supply chains used by MNEs in promoting profitability through cost control.

The pandemic did not create this problem, but rather it compounded the damage caused earlier in the decades of the 2000s through anti-globalization measures by national governments—particularly in the industrialized world—that are traceable to growing nationalism and protectionism. Although the disruptive effects of the pandemic are relatively easy to trace and measure in the short-run, long-run forecasting is much more difficult. Whether the pandemic has long-lasting effects or not depends on the policy responses of national governments, MNEs, and global health agencies.

A happy scenario would arise if (1) national government policy became more supportive of the free movement of goods, services, people, and capital across international borders; (2) MNE policy reestablished efficient supply chain linkages in capital-poor developing countries; and, (3) global health agencies instituted policies designed to assist poor countries in gaining their fair share of the anti-virus vaccines, thereby improving the investment climates within these regions.

RECOMMENDATIONS FOR FUTURE STUDY

Certainly, there is evidence that recent trends toward anti-globalization are traceable to the growing political propensity or commitment to populism and nationalism, particularly in the industrialized world. Studies are needed to identify the political, cultural, social, and economic conditions in these countries that promote these deleterious trends.

Industry case studies are also needed to examine the strategies that MNEs employ to establish supply chains on a global scale. Studies are also needed to examine the risks and returns of extending supply chain linkages to developing countries. Furthermore, studies are

needed to examine the benefits and costs of poor-country dependencies on capital inflows (particularly FDI inflows) from the industrialized world.

Finally, as the pandemic proceeds, it is necessary for global health organizations to examine not only the real cost of the extraordinary damages caused by the COVID-19 virus, but also what appears to be an inefficient and inequitable global vaccine distribution system.

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LEVERAGING STRATEGIC AGILITY IN THE PANDEMIC ENVIRONMENT

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ABSTRACT

Strategic agility is defined as the firm's capability to dynamically change its plan for achieving competitive advantage. Research on strategic agility has blossomed with over a dozen journal articles published during the last three years. Recent empirical research suggests young firms benefit more than older firms from strategic agility, especially when facing environmental turbulence. That is, firm age and environmental turbulence jointly moderate the relationship between strategic agility and firm performance. If the pandemic climate of 2020 represents a high degree of turbulence, then strategic agility may be highly beneficial for young firms struggling to survive if not prosper during pandemic conditions. This applied research article first reviews theory and prior research on strategic agility and environmental turbulence. It is argued the coronavirus pandemic ranks highly on the five components of the environmental turbulence construct, namely, the complexity, rapidity, novelty, visibility, and frequency of environmental change (Ansoff, 1984, 2019). Doz and Kosonen's (2010) strategic agility framework and Reed's (2020, 2021) empirical findings operationalizing the framework are reviewed, focusing on the unique value of strategic agility for young firms. A sensitivity analysis is conducted to identify six subfactors of the framework which most influence firm performance in high environmental turbulence. These are, in order, multiple business models, flexible organizational structures, probing the future, reflecting on past/future trajectory, modular systems and processes, and leadership empathy. The article concludes with a discussion of how these strategic agility subfactors may be leveraged by entrepreneurs and small firms during pandemic and other turbulent environments, and directions for future research.

Keywords: Strategic agility, environmental turbulence, firm-age, pandemic, sensitivity analysis

INTRODUCTION

The coronavirus-induced economic downturn of 2020 abruptly upended the strategic plans of companies worldwide. From Boeing's cancellation of their diversification and innovation plan through joint venture with Embraer, to the shift by Eclipse International (a small New Jersey manufacturer) from mattress making to medical masks, many companies large and small were forced to adapt their strategies to the pandemic environment to survive (Insider NJ, 2020; Liao, 2020). However, not all companies were negatively affected by the pandemic. Established companies like Clorox and Zoom benefited from new-found demand, scaling their production, and accelerating their growth plans. Entrepreneurs like Phil Libin at mmhmm (remote presentation technology) and Prashant Fuloria at Fundbox (PPP loan origination) saw

opportunity in the pandemic and launched new businesses or products to meet new needs (Konrad, 2020; Roll Call, 2020).

Whether positively or negatively impacted, firms capable of changing strategy quickly in turbulent environments appear to have a competitive advantage. In the field of strategic management, this capability is known as *strategic agility*. The term strategic agility was coined by Roth (1996) in an agile manufacturing sense—the ability to create the right products at the right place at the right time at the right price. Long (2000) generalized the construct as the ability to maintain the flexibility to quickly respond to changing circumstances and emerging opportunities while still concentrating on a clear strategic purpose. Research on strategic agility accelerated in 2008 based on the work of Doz and Kosonen (2008a, 2008b) who developed a three-dimensional framework for the construct involving strategic sensitivity, leadership unity, and resource fluidity. Doz and Kosonen (2010) subsequently elaborated their framework by identifying 15 underlying determinants or subfactors.

While their work was qualitative in nature, the Doz and Kosonen (2010) framework has been increasingly used by empirical researchers interested in the relationship between strategic agility and firm performance (Al-Azzam, Irtaimah, & Khaddam, 2017; Chan & Muthuveloo, 2020; Clauss, Abebe, Tangpong, & Hock, 2019; Debellis, De Massis, Petruzzelli, Frattini, & Giudice, 2020; Junni, Sarala, Tarba, & Weber, 2015; Nurjaman, Rahayu, Wibowo, & Widjajani, 2021; Ofoegbu & Akanbi, 2012; Xing, Liu, Boojihawon, & Tarba, 2020). Unfortunately, the results have been mixed due in part to different operationalizations. Reed (2020) operationalized Doz and Kosonen's (2010) framework using the 15 determinants and tested the relationship between strategic agility and performance under several contingencies. The relationship was found to be jointly moderated by firm-age and environmental turbulence, potentially explaining the earlier mixed results. Specifically, Reed (2020) found that in high turbulence environments, young firms appear to benefit from strategic agility while older firms appear to be harmed by it.

This article builds on this research stream by investigating how strategic agility may be leveraged for improved performance in the turbulence of a pandemic environment. In the theory section, both environmental turbulence and strategic agility are examined more closely. The five-factor model of environmental turbulence propounded by Ansoff, Kipley, Lewis, Helm-Stevens, and Ansoff (2019) is used to assess the degree of turbulence represented by the pandemic climate of 2020. Doz and Kosonen's (2010) 15-subfactor model of strategic agility and Reed's (2020, 2021) empirical findings are used to show young firms are uniquely positioned to benefit from strategic agility in high turbulence. But which of the 15 subfactors matter most? In the methods and results sections, a sensitivity analysis is presented which identifies six subfactors which have the greatest effect on the significance of the agility-performance relationship. The discussion section addresses how these subfactors may be leveraged by entrepreneurs and small firms. The article concludes by summarizing the findings and presenting several avenues for future research.

LITERATURE REVIEW

Environmental Turbulence

Environmental turbulence is a long-standing construct in strategic management research, often utilized as an antecedent or moderator of other constructs and relationships (Ansoff et al., 2019; Jaworski & Kohli, 1993; Khandwalla, 1977; Lichtenthaler, 2009; March, 1991; Mintzberg, 1979). Indeed, strategy itself is widely considered more important in dynamic, hypercompetitive, and high-velocity markets than in times of stability (D'Aveni, 1994; Eisenhardt & Martin, 2000; Teece, 2009). Khandwalla (1977) defines environmental turbulence as follows:

A dynamic, unpredictable, expanding, fluctuating environment is a turbulent environment. It is an environment marked by changes. It is an environment in which the information received by the organization is often contradictory. The best estimates that management can make of the future are only "guestimates" and get obsolete fairly quickly since the environment often takes unpredictable turns. It is an environment in which the ability to take calculated risks in the face of uncertainty is vital. It is an environment that attracts entrepreneurs. (p. 333)

Ansoff et al. (2019) defines environmental turbulence more precisely as a combined measure of the changeability and predictability of the firm's environment and offers a turbulence scale which is based on five factors as shown in Table 1.

Table 1
Ansoff's Environmental Turbulence Scale

Factors	1	2	3	4	5
<i>Complexity</i> of Environment	National competitors		Regional or global competitors with technology effects		Global competitors with social and political effects
<i>Novelty</i> of Change	No change	Change is slow and incremental	Change occurs faster but still incremental	Change is discontinuous but expected	Change is discontinuous and completely unexpected
<i>Rapidity</i> of Change	No change	Change occurs slower than the firm can respond	Change occurs equal to the firm's ability to respond	Change occurs more rapidly than the firm can respond	Change occurs catching the firm completely by surprise
<i>Visibility</i> of Future Events	Complete visibility of future change events	Future change events are easy to extrapolate	Future change events are predictable	Future change events become less predictable	Future change events are completely unpredictable
<i>Frequency</i> of Turbulence Level Shifts	No shifts due to no change	Low	Moderate	High	Multiple shifts per year

Adapted from: Ansoff et al. (2019), Table 6.1, p. 80.

Given the scale's detail at each level of turbulence from 1 (low) to 5 (high), the degree of turbulence created by the coronavirus pandemic is readily assessed. On complexity, the pandemic impacted firms across the globe with technological, social, and political effects, meeting the criteria for level 5 on the scale. On novelty, pandemics may not be new, but they are discontinuous, seemingly appearing randomly everyone to three decades, with the most recent being the "swine flu" (H1N1) in 2009-2010. However, a pandemic as global and severe as COVID-19 has not been seen since the "Spanish flu" of 1918-1919 which killed tens of millions. It is fair to say a pandemic of this magnitude was completely unexpected, ranking level 5 on this factor also. On rapidity, since the onset of the pandemic in early 2020, environmental change was frequent and faster than most firms could respond. Firms were surprised by continually changing infection rates, CDC guidance, medical treatments, levels of economic shutdown, supply chain instability, government loan programs, direct payments to households, and vaccine availability. All these factors support level 5 on rapidity. Likewise, on visibility, future changes due to the pandemic were completely unpredictable. Will the infection rate subside or resurge? Will the lockdown be eased or tightened? Will an effective vaccine be found or not? Visibility therefore ranks a level of 5. Finally, on frequency, the level of turbulence shifted several times during 2020 as each of at least three surges of the virus led to a roller coaster ride between emergency and semi-normalcy. This meets the criteria for level 5 also.

Overall, it appears the coronavirus pandemic of 2020-2021 qualifies at the highest level of Ansoff et al.'s (2019) environmental turbulence scale. Note, however, environmental turbulence is not inherently bad. None of the five factors presume a negative impact to financial performance or other firm outcomes. Change from equilibrium provides both hazard and opportunity, a condition well appreciated by entrepreneurs (Kirzner, 1997). This observation is important for understanding the complex interaction between environmental turbulence and strategic agility.

Strategic Agility

Doz and Kosonen (2010) and their colleagues have developed a substantial body of research on strategic agility (Doz & Kosonen, 2020; Doz & Kosonen, 2007, 2008a, 2008b, 2010, 2011; Hamalainen, Kosonen, & Doz, 2012). Originally based on a longitudinal case study of Nokia and then applied to other companies, the researchers identified three dimensions of the construct.

- *Strategic sensitivity*—An intense awareness of external trends combined with an open and participative strategy process.
- *Leadership unity* (also called collective commitment)—Alignment and transparency within the top leadership team, enabling bold decisions to be made fast.
- *Resource fluidity*—The capability to reconfigure business systems and redeploy resources rapidly.

According to Doz and Kosonen (2008b), all three dimensions are required for a firm to be strategically agile:

The three meta-capabilities underlying strategic agility operate in a multiplicative interaction over time. If leadership unity is not fully in place - as at Nokia in the early 2000s—the full benefits of agility cannot be achieved even if the other two are present to a relatively strong extent. In short, the formulation is: Agility = Sensitivity x Unity x Fluidity. (p. 111)

Doz and Kosonen (2010) identified five underlying determinants for each dimension representing leadership actions that can be taken to enable the dimension. For example, *experimenting*, described as gaining insight by probing the future through experiments and in-market tests, underlies the strategic sensitivity dimension. *Revealing*, making personal motives and aspirations explicit, underlies leadership unity. And *dissociating*, separating resource use from resource ownership to allow for resource access and allocation, underlies resource fluidity. Doz and Kosonen's (2010) most recent work explored strategic agility in the public policy and human resources domains (Doz & Kosonen, 2020; Hamalainen, Kosonen, & Doz, 2012).

Based on Doz and Kosonen's (2010) framework, Reed (2020) defines strategic agility as the firm's capability to dynamically change its plan for achieving competitive advantage through its strategic sensitivity, leadership unity, and resource fluidity. Using the 15 determinants as subfactors, he operationalized strategic agility as shown in Table 2. All items were rated from 1 (strongly disagree) to 7 (strongly agree) and strategic agility was computed as the product of the means of the three dimensions (SENSE x UNITY x FLUID) following Doz and Kosonen's (2010) prescription. Using this scale, Reed (2021) found the strategic agility construct to be valid through factor analysis and convergence with similar constructs. Using multiple regression, he tested the relationship between strategic agility and firm performance and found it to be jointly moderated by firm-age and environmental turbulence. That is, age and turbulence independently interact with strategic agility, but when both interactions are introduced to the regression, the combined effect is greater than the sum of the individual effects (Cohen, Cohen, West, & Aiken, 2015).

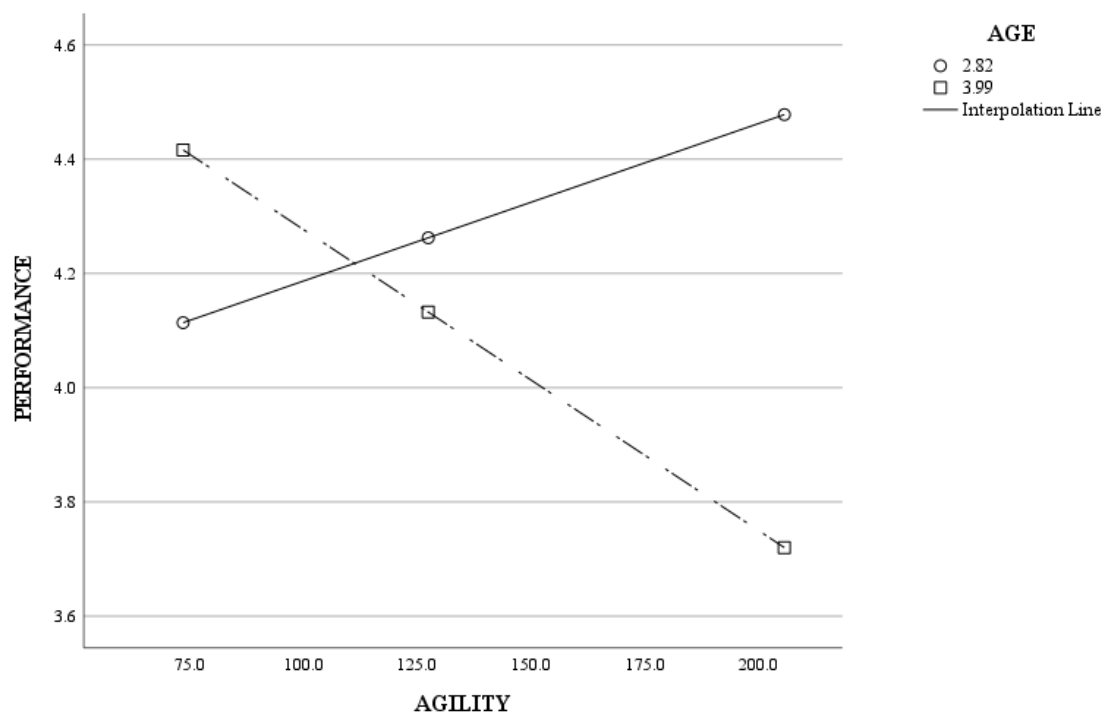
Table 2
Reed's Strategic Agility Scale

Variable	Subfactor	Survey Item
Strategic Sensitivity (SENSE)		
Sense1	Anticipating	My organization anticipates future customer needs.
Sense2	Experimenting	My organization uses experimenting (e.g., prototypes, pilots, in-market tests) to probe the future.
Sense3	Distancing	My organization reflects on the company's past evolution and future trajectory.
Sense4	Abstracting	My organization considers a wide range of potential products and services by viewing our business in abstract terms.
Sense5	Reframing	My organization recognizes the need to try new business models.
Sense6	Grafting	My organization adopts new ways of doing business from other companies.
Leadership Unity (UNITY)		
Unity1	Dialoguing	The leaders of my organization engage in open dialogue and welcome differences of opinion.
Unity2	Revealing	The leaders of my organization reveal their underlying motives including aspirations, biases, and fears.
Unity3	Integrating	The leaders of my organization operate as an integrated, interdependent, value-creating team.
Unity4	Aligning	The leaders of my organization are aligned around a common interest through a compelling mission, aspirational vision, shared values, and emotion.
Unity5	Caring	The leaders of my organization are caring and demonstrate empathy and compassion for others.
Resource Fluidity (FLUID)		
Fluid1	Decoupling	The elements of my organization (e.g., departments, lines of business) are loosely coupled and flexible.
Fluid2	Modularizing	My organization's underlying business systems and processes are modular and easily changed.
Fluid3	Dissociating	Resources in my organization are easily accessed across organizational boundaries.
Fluid4	Switching	My organization uses multiple business models for different market segments or products.

Adapted from: Reed (2021), Appendix 1.

Figure 1 graphically depicts the joint interaction when environmental turbulence is high (4.0 on Ansoff's scale). In this case, strategic agility is positively related to performance for young firms (average age 2.82 or 16.8 years) while negatively related to performance for older firms (average age 3.99 or 54.0 years).

Figure 1
Interaction of Age and Agility in High Turbulence



This crossed or disordinal interaction is striking in the context of the pandemic. It suggests strategic agility is not just more beneficial for young firms than older firms, but that older firm performance actually decreases with strategic agility in high turbulence. Reed (2021) interpreted this paradoxical finding as a “dithering effect” in which older firms may dither between strategies too much, incurring greater change costs than young firms due to their greater asset stocks and path dependencies (Ermoliev, Arthur, & Kaniovski, 1987; Dierickx & Cool, 1989). In this case, older firms may perform better by staying the course and riding out the turbulence.

Doz and Kosonen’s (2010) theory coupled with Reed’s (2020, 2021) empirical findings suggest young firms are uniquely positioned to leverage strategic agility to limit the impact or even improve performance in the pandemic environment. But how? All 15 items in the strategic agility scale are candidates for leadership action to improve strategic agility. Which subfactors should the entrepreneur or small business address? Sensitivity analysis is needed to answer this question.

METHODOLOGY

Sensitivity analysis is a statistical technique used to determine how uncertainty in the output of a model can be apportioned to different sources of uncertainty in the model input

(Saltelli, Ratto, Andres, Campolongo, Cariboni, Gatelli, Saisana, & Tarantola, 2008). With respect to regression models, we may examine how changing the values of specific independent variables affects a dependent variable under a given set of circumstances (Maddala & Lahiri, 2009). By independently increasing and decreasing (or alternatively, omitting and including) each independent variable, the difference between the revised model and a baseline model may be measured to determine the degree to which the model is sensitive to the variable.

This study uses an existing data set and regression model as the baseline (Reed, 2020). The data set consists of 73 for-profit companies randomly sampled in the State of Florida. Florida was originally selected due to its large economy (GDP) and high industry diversity but represents a convenience sample here. The companies are in the manufacturing, professional services, and construction industry sectors, and range widely in age (2 to 124 years), size (5 to 21,000 employees), and revenue (less than \$1 million to over \$1 billion annually).

The data was collected from CEO-level leaders in mid-2019 prior to the coronavirus pandemic. The regression model of interest is the joint interaction model previously described, wherein it was found that the relationship between strategic agility and firm performance was jointly moderated by firm-age and environmental turbulence. The strategic agility and environmental turbulence constructs were measured as discussed in the prior section. Firm-age was taken as the natural logarithm of the number of years since founding. Firm performance was operationalized as a combined measure of revenue growth, profitability, and meeting of company objectives following Powell (1992). Industry sector and business entity type (e.g., C-corporation) were used as controls. The regression model reported a multiple correlation coefficient (R) of .4859, proportion of variance explained (R^2) of .2361, and significance (p) of .0367. These are the baseline values of interest.

The sensitivity analysis is conducted by increasing and decreasing the values of each of the 15 strategic agility subfactors in the data set by 50% while holding all other values the same. Each adjustment produces a slightly modified data set to which the same regression model is applied. The new R , R^2 , and p values for each model are then compared to the baseline values to determine sensitivity. For R and R^2 , the comparison consists of subtracting the baseline values from the new model values, as a higher R is considered favorable (greater correlation) and results in a positive number. For p , the new model value is subtracted from the baseline value as a lower p is considered favorable (greater statistical significance) resulting in a positive number.

RESULTS

Table 3 provides the results of the sensitivity analysis. For each strategic agility subfactor, the new R , R^2 , and p values are shown for the -50% and +50% adjustments. These values are compared to the baseline regression model to find the ΔR^2 and Δp . The range of variation from the -50% level to the +50% level of either ΔR^2 or Δp may be considered to represent the sensitivity of the model to the subfactor. For example, when Unity1 is changed +/- 50%, the resulting percentage change in R^2 is -0.7% to +0.5% (a 1.2% range) and the percentage change in p is -4.6% to +3.3% (a 7.9% range). In general, the sensitivity column of Table 3 indicates the model is more sensitive to subfactor values in statistical significance (p) than in

coefficient of determination (R^2). However, the ranges of the two measures track closely together.

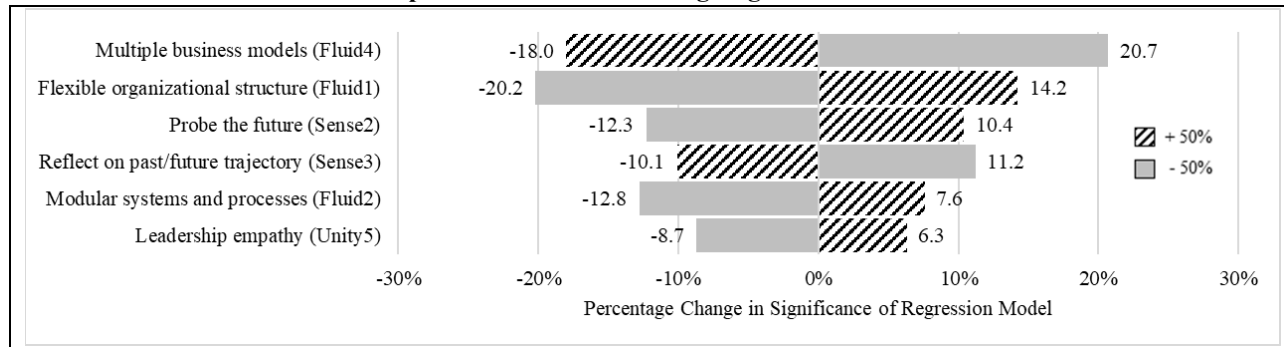
Table 3
Sensitivity of Model to Changes in Subfactors

		Regression Model			Sensitivity	
Subfactor		R	R^2	p	ΔR^2	Δp
Unity1	- 50%	.4870	.2372	.0355	0.5%	3.3%
	+ 50%	.4842	.2345	.0384	-0.7%	-4.6%
Unity2	- 50%	.4883	.2385	.0342	1.0%	6.8%
	+ 50%	.4838	.2340	.0388	-0.9%	-5.7%
Unity3	- 50%	.4849	.2351	.0377	-0.4%	-2.7%
	+ 50%	.4867	.2368	.0359	0.3%	2.2%
Unity4	- 50%	.4855	.2358	.0370	-0.1%	-0.8%
	+ 50%	.4860	.2362	.0366	0.0%	0.3%
Unity5	- 50%	.4828	.2331	.0399	-1.3%	-8.7%
	+ 50%	.4882	.2383	.0344	0.9%	6.3%
Sense1	- 50%	.4856	.2358	.0369	-0.1%	-0.5%
	+ 50%	.4860	.2362	.0365	0.0%	0.5%
Sense2	- 50%	.4816	.2320	.0412	-1.7%	-12.3%
	+ 50%	.4897	.2398	.0329	1.6%	10.4%
Sense3	- 50%	.4901	.2402	.0326	1.7%	11.2%
	+ 50%	.4824	.2327	.0404	-1.4%	-10.1%
Sense4	- 50%	.4869	.2371	.0357	0.4%	2.7%
	+ 50%	.4849	.2351	.0377	-0.4%	-2.7%
Sense5	- 50%	.4853	.2355	.0373	-0.3%	-1.6%
	+ 50%	.4863	.2365	.0362	0.2%	1.4%
Sense6	- 50%	.4857	.2359	.0368	-0.1%	-0.3%
	+ 50%	.4860	.2362	.0366	0.0%	0.3%
Fluid1	- 50%	.4791	.2295	.0441	-2.8%	-20.2%
	+ 50%	.4912	.2413	.0315	2.2%	14.2%
Fluid2	- 50%	.4814	.2318	.0414	-1.8%	-12.8%
	+ 50%	.4887	.2388	.0339	1.1%	7.6%
Fluid3	- 50%	.4886	.2387	.0340	1.1%	7.4%
	+ 50%	.4835	.2338	.0391	-1.0%	-6.5%
Fluid4	- 50%	.4940	.2440	.0291	3.3%	20.7%
	+ 50%	.4798	.2302	.0433	-2.5%	-18.0%

Figure 2 depicts the results of the sensitivity analysis (based on Δp) in the form of a tornado diagram. The six subfactors with an influence range of 15% or more on the regression model are shown in rank order. For example, the model is most sensitive to Fluid4 where the

50% changes in value led to a -18.0% to +20.7% change in statistical significance of the model. It is also evident that increasing a subfactor value does not always increase model significance. For example, the +50% change in Fluid4 leads to a -18.0% change in statistical significance while the +50% change in Fluid1 leads to a +14.2% change in statistical significance. The direction of the influence of a subfactor on the model is discussed further in the following section.

Figure 2
Top 6 Subfactors Influencing Regression Model



A final regression was calculated using the top six subfactors together. That is, all six of Fluid4, Fluid1, Sense2, Sense3, Fluid2, and Unity5 were adjusted by 50% in whichever direction provided the positive impact on R^2 and p (the cross-hatched bars in Figure 2). This grouped sensitivity analysis represents the model gain if companies were to improve by 50% on all six subfactors. The regression results in an R of .5101, R^2 of .2602, and p of .0179, improving the proportion of variance explained by 10% (.2361 to .2602) and the statistical significance by 51% (.0367 to .0179).

DISCUSSION

Using Reed's (2021) baseline regression model, the sensitivity analysis identified six subfactors from Doz and Kosonen's (2010) framework which appear to most influence the relationship between strategic agility and firm performance. However, it is important to note this does not necessarily mean a firm's improvement on these input subfactors leads to improved output performance. The sensitivity analysis measured the effect of the subfactors on the strength of the model (R^2 and p) and not the dependent variable. This means the model is more reliable and likely to apply when the identified subfactors are improved. Next, the six subfactors are considered individually to determine how they might be leveraged in the turbulent, pandemic environment.

Fluid4 (*switching*) was defined as using multiple business models for different market segments and products. At first blush, multiple business models might be considered beneficial during the pandemic by providing more flexibility and resiliency to impacts in one segment (e.g., sit-down restaurants) than another (e.g., home meal delivery). However, increasing this subfactor was found to decrease the strength of the regression model. Why would this be the case? One

possible explanation is cash flow and margins may be preserved by “hunkering down” during the pandemic to fewer core markets and products. Another explanation is that it is older firms which are more likely to operate multiple business models, and as we know from Figure 1, their performance decreases with strategic agility in high turbulence. The negative effect of this subfactor may therefore be limited to older firms.

Fluid1 (*decoupling*), defined as loosely coupled and flexible organizational elements, was positively related to improvement to the baseline model. This ability to adapt organizational structures to the pandemic environment, whether through downsizing, reconfiguration, or expansion, would seem to make sense for all aged firms whether struggling to survive or seeking to exploit new opportunities.

Sense2 (*experimenting*) was defined as probing the future through prototyping, pilots, and in-market tests. While this subfactor is aimed at foreseeing market trends and product needs, any attempts to peer into the future may increase the likelihood of recognizing turbulent events early and dealing with their effects proactively. The subfactor could be leveraged by seeking out relevant news and other media, testing potential pandemic responses with customers (e.g., mask wearing, seating capacity), and proactively developing pandemic (and other disaster) response plans.

Sense3 (*distancing*), defined as reflecting on the company’ past evolution and future trajectory, was also found to be better reduced than increased in a turbulent environment. This finding may be explained by recognizing pandemics as discontinuous and unforeseen events. Past evolution may provide little insight and no bearing on future trajectory. It may therefore be better to “live in the moment” in terms of firm survival.

Fluid2 (*modularizing*) was defined as having modular and easily changed underlying business systems and processes. Increasing this capability makes sense as the ability to adapt systems and processes to the impacts and opportunities of the pandemic would likely improve performance. This could be accomplished by streamlining processes, prioritizing business system deployments and upgrades, and other operational improvement activities.

Unity5 (*caring*), the only subfactor drawn from the leadership unity dimension of strategic agility, was defined as caring, empathy, and compassion for others by the leadership team. This leadership quality seems beneficial considering the hardships of the pandemic on clients, employees, and communities. Empathy may lead to improved customer retention, employee morale and motivation, and community support, all contributing to firm performance.

Note three of the six subfactors are components of the resource fluidity dimension of strategic agility. This suggests the ability to adapt resources quickly during the rapid change and unpredictability of the pandemic is the most important overall capability to have or improve.

CONCLUSION

This research applied strategic agility theory to the high turbulence environment of the coronavirus pandemic. It was conceptually shown that the pandemic represents a high level of turbulence. It was empirically shown that under high turbulence, young firms appear to benefit from strategic agility while older firms appear to be harmed by it. While the relationship is not

causal, it suggests that on the continuum of age, young firms are uniquely positioned to leverage strategic agility not only for survival but for entrepreneurial opportunity in the pandemic environment. A sensitivity analysis was conducted using an existing data set to determine which strategic agility subfactors have the greatest influence on the agility-performance relationship. Six subfactors were found and recommendations were provided for their leverage by young and small firms.

Several avenues for future research are recommended. First, the existing data set was taken in mid-2019 prior to the pandemic. New data collection during the pandemic may provide a better window into the effects of strategic agility under high turbulence. Better yet, a longitudinal study of firms before, during, and after a pandemic event may provide better insight into how strategic agility is leveraged and causally related to firm performance. Third, the characterization of the pandemic as high turbulence could be examined empirically rather than conceptually through survey or analysis of archival economic data. This may strengthen the findings and recommendations. Finally, much work remains to be done on strategic agility in general. Reed's (2021) operationalization of the Doz and Kosonen (2010) framework calls for further testing in other contexts including other regions and nations. The relationship between strategic agility and similar constructs such as organizational ambidexterity (Raisch & Birkinshaw, 2008), organizational agility (Harraf, Wanasika, Tate, & Talbott, 2015), and strategic responsiveness (Andersen, Torp, & Linder, 2019) should also be further explored.⁴

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⁴ Reed (2020) noted similarities and differences between these constructs, but only tested the correlation between strategic agility and organizational alignment.

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VUCA: A MANAGEMENT TOOL FOR DEALING WITH CHALLENGES IN CHANGING ENVIRONMENTS

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ABSTRACT

This article begins by commenting briefly on several characteristics (order, disorder, and movement) of the current pandemic environment in which we live and work. It seems clear that organizations need tools to help cope with challenges from our changing environment; one tool which seems likely to be useful is VUCA analysis. The origins of VUCA analysis and definitions of its four components (Volatility, Uncertainty, Complexity, and Ambiguity) are discussed. After describing a process for doing VUCA analysis as suggested by Meyer (2019), the article provides several comments and/or examples offered by executives and/or analysts regarding VUCA analyses and their usefulness, based on the use of primary and secondary sources. Concluding comments by the authors touch upon some of the implications that are believed to emerge from our examination of this topic.

Keywords: VUCA, target market, volatility, uncertainty, complexity, ambiguity

INTRODUCTION

It has become especially clear this year that we live in a world in motion, where expressions of order and disorder, organization, and disorganization, predictable and unpredictable, all co-exist. The world has changed; in this world, the consideration of movement and its fluctuations (i.e., variability) prevails over that of permanence, structures, and organizations. The characteristics of the current environment comprise the following: order, disorder, and movement. In this world, chaos not only exists but is in fact ever-present, and organizations need tools to deal with considerations including the following:

- 1) *Order and disorder do not separate but occur in association through complex and sometimes mysterious relationships.*
- 2) *Uncertainty and complexity have increased and force organizations to grope forward.*
- 3) *The multiplicity of variables and their compound interactions are always uncertain; reducing them for analysis is difficult.*

VUCA ANALYSIS: A MANAGEMENT TOOL SUITED TO THE CURRENT ENVIRONMENT

Based on management research by Warren Bennis and Bert Nanus in *Leaders: The Strategies for Taking Charge*, (1985), the U.S. Army War College (USAWC) introduced the concept of VUCA as an acronym to define strategic leadership as occurring “within a volatile

uncertain, complex and ambiguous global environment, marked by possibilities and opportunities” (Barber, 1992, p. 8). Since then, the idea of VUCA had been applied to a variety of organizations including educational institutions and for-profit corporations (Systems Innovation, 2019).

In an article posted on the Forbes website, Kraaijenbrink (2018) provides the following concise definitions of the four key variables in the VUCA model:

Volatility: Volatility refers to the speed of change in an industry, market, or the world in general. It is associated with fluctuations in demand, turbulence, and short time to markets and it is well-documented in the literature on industry dynamism. The more volatile the world is, the more and faster things change.

Uncertainty: Uncertainty refers to the extent to which we can confidently predict the future. Part of uncertainty is perceived and associated with people’s inability to understand what is going on. Uncertainty, though, is also a more objective characteristic of an environment. Truly uncertain environments are those that do not allow any prediction, not even on a statistical basis. The more uncertain the world is, the harder it is to predict.

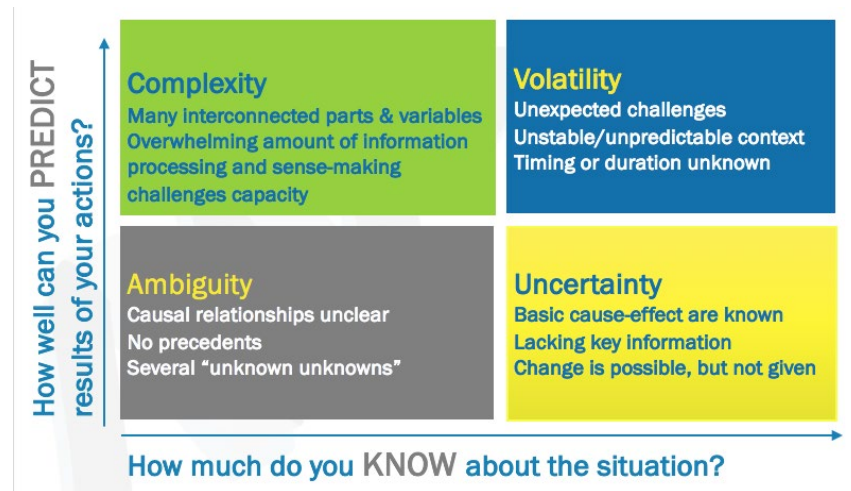
Complexity: Complexity refers to the number of factors that we need to consider, their variety, and the relationships between them. The more factors, the greater their variety and the more they are interconnected, the more complex an environment is. Under high complexity, it is impossible to fully analyze the environment and come to rational conclusions. The more complex the world is, the harder it is to analyze.

Ambiguity: Ambiguity refers to a lack of clarity about how to interpret something. A situation is ambiguous, for example, when information is incomplete, contradicting or too inaccurate to draw clear conclusions. More generally it refers to fuzziness and vagueness in ideas and terminology. The more ambiguous the world is, the harder it is to interpret (Kraaijenbrink, 2018).

After providing the above definitions, Kraaijenbrink (2018) goes on to observe that “In practice, the four terms are related. The more complex and volatile an industry is, for example, the harder it is to predict and therefore more uncertain it will be. Yet, all four represent distinct elements that make our environment—the world, a market, an industry—harder to grasp and control.

METHODOLOGY: VUCA ANALYSIS

While there are undoubtedly several different approaches to conducting a VUCA analysis, one suggested by Meyer (2019) seems especially straightforward and builds on the following graphic from a *Harvard Business Review* article by Bennett and Lemoine (2014). As indicated, the vertical axis of this 2X2 contingency table measures “how well can you predict the results of your actions,” while the horizontal axis measures “how much do you know about the situation?”



Source: Meyer (2019)

After indicating that the next step in conducting a VUCA analysis is “to identify which of the (above) four characteristics are most relevant to your current situation” (Meyer, 2019, p.2), the author identifies various challenges associated with each VUCA element. Subsequently, she indicates that the next step in conducting a VUCA analysis is the identification of characteristics most closely related to the present situation (Meyer, 2019). Following this process, there is a need to determine challenges associated with each VUCA element. Some issues are likely to cause ambiguity such as when the timeframe and impact of the current conditions are unknown. Other issues resulting in ambiguity are moving into a new market, launching a new product, creating a new strategic alliance, expanding beyond your core competencies and experiencing a change in leadership or the organization (Meyer, 2019).

Issues likely to create complexity include the following: 1) Doing business in global markets; 2) Having multiple stakeholders with competing or shifting priorities; 3) Having multiple brands, products, supply chains and distribution channels, and whatever is going on in the current environment which will greatly impact your entire business eco-system (Meyer, 2019).

Regarding issues likely to create uncertainty, the following are identified: Competition is launching a new product/service and the impact on the market not known, uncertain impact on the availability of key resources including capital (and/or) skills (and/or) knowledge and talent, past supply and demand metrics may not apply, merger/acquisition may be on the horizon, and proposed legislation/regulations may be adopted (Meyer, 2019). Regarding issues likely to create volatility, the following may be noted: Natural disaster, global health crisis, supply chain disruption, labor dispute, technology breach, geopolitical instability, and PR/Ethics Scandal (Meyer, 2019).

The next step in conducting a VUCA analysis is to “discuss with your colleagues: Which (of the above) VUCA characteristics are most relevant to the challenges and opportunities you are confronting.” (Meyer, 2019, p. 4).

Having determined which of the above VUCA characteristics are most relevant to the challenges and opportunities an organization is facing for each of the VUCA elements) best practices are addressed for those issues; the decision-makers pay particular attention to those issues that are within the span of control or influence, and that will have the most immediate positive impact on customers and on business sustainability (Meyer, 2019).

Regarding these VUCA-related best practices relating to volatility the following may be noted: promote and train for role elasticity and develop generalizing specialists; improve decision-speed; build redundancy into the system and build slack into the supply chain; leverage technology and alternative strategies to ensure continuous communication and collaboration and coordination; focus on learning and capacity building by identifying what is learned and how customers are changing through the volatility; regularly train for various disruptions and ID needed skills (and/or) knowledge (and/or) talent as well as other critical business continuity factors; and, tap high-potentials for temporary assignments (Meyer, 2019).

As for VUCA best practices for reducing uncertainty, the following are considered: tap relational web of skills (and/or), knowledge (and/or), talent (and/or), resources to reduce uncertainty; gather additional information and insight (including customer data, market analytics); improve access to market insights via resources like slack and yammer; and, reflect on (and) share experiences of successfully working through uncertainty (Meyer, 2019).

Additional best practices relating to reducing uncertainty which Meyer (2019) explains include: the givens of the current situation and focus on what is within the span of control; provide or seek career-pathing (and/or) “stay interviews” to identify people’s interests plus strengths to keep them engaged; and, implement agile performance appraisals and regularly provide feedback and acknowledge agile success. Regarding VUCA best practices for reducing complexity, Meyer (2019) identifies the following: Improve communication, collaboration, and coordination; clarify decision-rights; adapt organizational structure and expertise to match the complexity of the context; identify people who have strengths and experience in dealing with complexity; and, recruit and develop people who can thrive in complexity. Regarding VUCA best practices for reducing ambiguity, Meyer (2019) states the following: create (some) clarity; make space for interactions; re-engage and recommit to your purpose; understand and prioritize user (customer) needs; focus on the MVP (Minimal Viable Product); practice rapid prototyping to fail faster and learn quicker; experiment and pilot to discover what is unknown; and, make time to learn the lessons from experience and carry them forward.

There are additional best practices offered by Meyer to help reduce uncertainty in organizations. For example, a greater focus on the givens of a situation and emphasis on what is within one’s span of control

COMMENTS BY SENIOR EXECUTIVES REGARDING MEYER’S VUCA ANALYSIS

The authors had access to both primary and secondary sources and this section includes comments from both types of sources. We begin with comments that the authors gathered through secondary sources.

In a post on the CEO website, Forsythe, Kuhia, & Rice (2018) provide comments by a few CEOs which appear to focus on the relevance and usefulness of VUCA analyses:

1. *Comments made by Joe DePinto of 7-11 Store and reported by Forsythe et al. (2018) include the following: "Disruption is as great as we have ever seen it. We are seeing all aspects of VUCA...we are an immediate consumption business...the e-commerce businesses are starting to encroach on our space. They are in fact beginning to redefine convenience as we have traditionally known it. We are working to move our company toward being more of a technology company that works in coordination with our traditional convenience stores...to offer increased convenience (to our customers), We are also focused on utilizing our stores as distribution points for other businesses. Customers can have their boxes shipped to a local 7-Eleven and can pick them up at their convenience. Finally, we are working on digital payment options that are multiple and varied. So, we have all of this going on. It's really being driven by the customer and new e-commerce entrants. It's forcing businesses like 7-Eleven to change the way we have done things in the past." (pp. 2-3).*
2. *Comments made by Bob Leduc, President of Pratt & Whitney, and reported by Forsythe et al. (2018) include the following: "There is no question that we are in a VUCA environment right now....When you think about our business, we have got a very complicated landscape. We have established competitors, but also emerging competitors, particularly in China and Russia. We have technology that is constantly advancing, and we have commercial and military customers redefining what their business models are and [what] they value now vs. what they previously did. So basically, the whole landscape is moving on us in many different directions." (p. 5).*
3. *Comments by Mike Fucci, Chairman of Deloitte, and reported by Forsythe et al. (2018) are as follows: "I'd say the same things that are affecting our clients are affecting us, which is artificial intelligence, robotics and cognitive technology. Our clients are struggling with the question of how they incorporate these innovative technologies into their day-to-day operation. Therefore, if we are going to consult with them, we need to be ahead of the curve and help them decide how they use this technology. We must anticipate things that aren't even fully baked yet, but it's mostly around technology. I call it the 'everything is a what-if' scenario. The way we work is so different. It used to be that that technical experience was kind of all you needed—you had a deep knowledge in something, and you brought that knowledge to clients. We must stay in front of disruption with our clients, and as the chairman, one of the things that concerns me a lot is how do we govern over disruption. So, how do I build nimble leaders to be able to address a little bit of the unknown? That is why the VUCA analogy resonates with me, because it's really more about building leadership than it is about building technical skills." (pp. 6-7).*

The analysis by Rossolillo (2021) regarding prospects for Delta Airlines in particular, and the airline industry in general, could be seen as an effort to begin working through the steps in the VUCA process suggested by Meyer (Meyer, 2019). Readers will recall the assertion by Meyer (2019) that an early step in the VUCA process is to decide which of the four (VUCA) characteristics is most relevant to the current situation. In his article, Rossolillo (2021) provides data suggesting because business travel generated more than a third of Delta's total 2019 revenue (and a much higher percentage of Delta's total 2019 profits), uncertainty regarding how quickly business travel will recover after covid-19 is controlled is a very key and critical question.

Meyer (2019) explains that in situations where uncertainty is high, best practices for reducing it include: Tap your relational web of skills (and/or) knowledge (and/or) talent (and/or) resources to reduce uncertainty, gather additional information and insight (including customer data, market analytics), improve access to market insights via resources like slack and yammer, and reflect on (and) share experiences of successfully working through uncertainty. Additional best practices relating to reducing uncertainty which she identifies include: Identify the givens

of the current situation and focus on what is within your span of control, provide or seek career-pathing (and/or) “stay interviews” so you can identify people’s interests plus strengths to keep them engaged, and implement agile performance appraisals and regularly provide feedback and acknowledge agile success (Meyer, 2019).

Fellows (2021) reports that in a February 2021 presentation on CNBC’s “Squawk on the Street,” Coca-Cola CEO James Quincey indicated that uncertainty regarding how quickly Coca-Cola revenues and volumes begin growing is a very key and critical question. Best practices suggested by Meyer for addressing uncertainty are as indicated above.

While the article does not say so explicitly, the analysis by Canal (2021) regarding prospects for streaming services offered by Disney+ and Apple could also be seen as an effort to begin working through the steps in the VUCA process suggested by Meyer (2019). Readers will recall the assertion that an early step in the VUCA process is to decide which of the four (VUCA) characteristics is most relevant to your current situation (Meyer, 2019).

Canal (2021) provides data provided by Netflix co-founder Marc Randolph suggesting that investments by Disney+ have contributed importantly to the company’s success in attracting nearly 90 million new subscribers in its first year of operations. Canal (2021) contrasts this success by Disney+ with the lackluster performance of streaming services offered by Apple and quotes Randolph as saying that “if Apple spent one quarter as much on time on content as they do on giveaways, they could really play.” (para. 13). The implication seems to be that ambiguity regarding the business they are in and the business model they are using may be a key and critical question for Apple.

Meyer (2019) suggests that in situations where ambiguity is high, best practices for addressing that issue include: Create (some) clarity, make space for interactions, re-engage and recommit to your purpose, understand and prioritize user (customer) needs, focus on your MVP (Minimal Viable Product), practice rapid prototyping to fail faster and learn quicker, experiment and pilot to discover what you do not know, and make time to learn the lessons from experience and carry them forward.

Primary Sources. Regarding comments by primary sources, these reflect the opinions of the senior executives of two firms: Altos de Tinogasta and Globant. Background information on these two companies and on the comments by their senior executives are captured below.

Altos de Tinogasta: As for background, the business model for this Argentinian company based in Catamarca offers investors the possibility to own not only farmland planted in grapes or olives but also a share of (in the case of land planted in olives) the oil factory or (in the case of land planted in grapes) the wine cellar. The model also offers investors a share of assets like machinery, oil and wine manufacturing facilities, and other fixed assets, in proportion to the number of parcels acquired. The model entrusts the management of all operations (farming, processing of crops, etc.) to Altos de Tinogasta (AT); AT has selected and chosen well-known engineers (with specialized training in vineyards and olive grove management) to manage the operation. Since the beginning AT has been structured as a production/operation driven organization; the main priorities have always been earthmoving operations, construction of

irrigation systems, and creation of plantations. Regarding key elements of the marketing strategy AT uses, Smith, Aimar, and Ruedin (2019) indicate the following:

1. *Target Market: Individuals and families in Argentina in the ABCI socio-economic categories.*
2. *Product: The 3000 hectares which AT purchased is being planted in olive trees and in grape vines. The land planted in olives has been divided up into 216 parcels of 10,000 square meters each; as for the land planted in grapes, it has been divided up into 208 parcels of 2,500 square meters each.*
3. *Price: Land planted in olives has been offered to investors at a price of \$27,000 per parcel. The land planted in grapes has been offered to investors at a price of \$15,000 per parcel.*
4. *Promotion: Over the years, AT has purchased very little radio and/or print advertising. Much of their advertising has been by word of mouth and/or through friends and family relationships plus satisfied investors sharing their experience and reactions with their friends, neighbors, etc. Regarding the message: The benefits AT has offered to investors in the few promotions it has run included pro-rata portions of the total revenue generated by sales of the olive oil or wine produced by AT, increases in the value of the real estate parcel(s) buyers have purchased, and the enjoyment of owning parcel(s) of land in the mountains of Argentina.*
5. *Place (Distribution): AT has used a small direct sales force to sell its products (Smith et al., 2019).*

Altos de Tinogasta (Comments by a senior executive): The executive references the VUCA model several times. Readers will recall the assertion by Meyer (2019) that an early step in the VUCA process is to decide which of the four (VUCA) characteristics is most relevant to your current situation. As reported by Aimar (2020), the following observations by the executive suggest that in the current situation, he believes uncertainty is the most relevant VUCA characteristic: “It is clear that the pandemic and the effects/consequences that it is generating in the economy will not be resolved in three months, nor in six...this is not a ‘zonda’ wind that happened but uncertainty...the challenge will be, then, to reconcile the new forms of work, processes, consumption, among others, with the capacities and needs that made AT a concrete reality (there is the) growth of e-commerce...(where) numerator=net income; denominator=investments, assets, expenses...lowering the denominator is a priority in uncertain times...it is time for the reconstruction of the present before futures with a wide range of uncertainty...many companies will disappear, others will weaken, only 20% will survive this crisis...in the long term, with uncertainty dissipated or reduced, companies will find an uncontested market space, instead of fighting in the ultra-competitive market...clear the fog of uncertainty the strategy structure and culture 2021 will emerge from a new scheme of VUCA concepts.” (pp. 1-4).

According to Kaivo-Oja, and Lauraeus (2018), key issues in modern VUCA management are agility (response to volatility), information and knowledge management (response to uncertainty), restructuring (response to complexity) and experimentation (response to ambiguity). Useful foresight tools are challenging tools, decision-making tools, aligning tools, learning tools and the ability to combine these management tools in the practices of corporate foresight and management systems. The VUCA approach is a key solution concept to technological disruption. As indicated earlier, Meyer (2019) suggests that in situations where such uncertainty is high, best practices for addressing that issue include the following: Tap into the relational web of skills (and/or) knowledge (and/or) talent (and/or) resources to reduce

uncertainty, gather additional information and insight (including customer data, market analytics), improve access to market insights via resources like slack and yammer, and reflect on (and) share experiences of successfully working through uncertainty. Additional best practices relating to reducing uncertainty which she identifies include: Identify the givens of the current situation and focus on what is within your span of control, provide or seek career-pathing (and/or) “stay interviews” so you can identify people’s interests plus strengths to keep them engaged, and implement agile performance appraisals and regularly provide feedback and acknowledge agile success.

Globant: Founded in Argentina in 2003 but now headquartered in Luxembourg, Globant is a technology services company which helps client companies develop mobile apps, websites, and digital journeys. Globant has more than 13,000 professionals working for companies like Google, LinkedIn, JWT, EA, and Coca Cola, among others. While its consultants work in more than 16 countries, Sun (2021) indicates that Globant generates 70% of its revenue in North America, nearly 8% in Europe, and the remainder of 22% in Latin America and other countries (Sun, 2021). Sun (2021) also indicates that the 3rd quarter of 2020, Globant’s largest customer was Disney Parks and Resorts Online. Globant has been featured as a business case study at Harvard, MIT, and Stanford; in addition, the company was named a Worldwide Leader of Digital Strategy Consulting Services by IDC MarketScape Report (2016 and 2017). Regarding the company’s recent performance in this very challenging environment, comments which can be made include the following:

Globant’s revenue rose 26% to \$659.3 million in fiscal 2019.

1. *In the first nine months of 2020, Globant’s revenue rose 22% year over year to \$581.5 million. Its adjusted gross margin dipped 180 basis points to 37%, partly due to COVID-19 costs, while lower utilization rates reduced its adjusted operating margin 240 basis points to 14.8%. However, its robust revenue growth still lifted its adjusted EPS by 6%.*
2. *Sun (2021) indicates that during last quarter’s [conference call](#), CFO Juan Urthiague estimated that Globant’s adjusted operating margins “would stay between 15%-17% in the near and mid-term as its revenue growth and utilization rates rebound toward pre-covid-19 levels.” (p. 2).*

Globant (comments by a senior executive): Aimar (2021) reports that the executive indicates that at Globant, VUCA analyses are “applied and carried out by all our managers, having as an initial trigger a series of assumptions and hypotheses that are defined for each country, market, or geography. On some occasions we take input from consulting firms such as PW, BCG, (and/or) McKinsey, that is, external organizations.” (pp. 1-2). Aimar (2021) goes on to report that the executive made the following additional VUCA-related observations: “we do not measure (the four VUCA characteristics) in quantitative terms...(for example) there is no complexity index that can be used as an indicator....Fiscal Year 2020 was evidence of the importance of the VUCA analysis. In March/April 2020 we had to take the plan prepared in 2019 and reinforce it, given the nature and magnitude of the uncertainty and volatility generated by covid...we respect the long-term commitments but are being flexible in our short-term agenda. This means that “strategy emerges as we walk down the road.” (pp. 2-3).

As indicated above, the executive highlights two VUCA characteristics (that is, uncertainty and volatility) as being especially relevant to Globant's situation. The implication is that both the uncertainty and the volatility-related best practices identified by Meyer could be especially relevant to him. As indicated earlier, best practices for reducing uncertainty, according to Meyer (2019) may be identified as the following: Tap your relational web of skills (and/or) knowledge (and/or) talent (and/or) resources to reduce uncertainty, gather additional information and insight (including customer data, market analytics), improve access to market insights via resources like slack and yammer, and reflect on (and) shared experiences of successfully working through uncertainty. Additional best practices relating to reducing uncertainty which she identifies include: "Identify the givens of the current situation and focus on what is within your span of control, provide or seek career-pathing (and/or) "stay interviews" so you can identify people's interests plus strengths to keep them engaged, and implement agile performance appraisals and regularly provide feedback and acknowledge agile success: (Meyer, 2019).

As discussed earlier, best practices for reducing volatility, according to Meyer include: Promote and train for role elasticity and develop generalizing specialists; improve decision-speed; build redundancy into your system and build slack into the supply chain; leverage technology and alternative strategies to ensure continuous communication and collaboration and coordination; focus on learning and capacity building by identifying what you are learning and how you and your customers are changing through the volatility; regularly train for various disruptions and ID needed skills (and/or) knowledge (and/or) talent as well as other critical business continuity factors; and, tap into your high-potentials for temporary assignments (Meyer, 2019).

IMPLICATIONS FOR THE CURRENT PANDEMIC ENVIRONMENT

Under current market conditions of corporate foresight, turbulence is a key element of the business landscape. Such turbulence is exacerbated by the pandemic environment and can be summarized using the trendy managerial acronym "VUCA": volatility, uncertainty, complexity and ambiguity (Kaivo-Oja, & Lauraeus, 2018). We have identified a few major changes in the current business environment, including the conflict between order and disorder (a characteristic associated with both uncertainty and complexity) and movement (that is, variability). Managers need tools to address these issues. After suggesting that VUCA analysis is one such potentially relevant and useful tool and after providing a bit of background on the model and on the definitions of the VUCA variables, the authors describe a straightforward process for conducting a VUCA analysis suggested by Meyer (2019). The authors also provide comments by several senior managers regarding the relevance and usefulness (in today's changed and changing environment) of VUCA analysis. We believe implications flow from our examination of the above topics:

1. *The profound and systemic recent changes in characteristics of the current business environment have already and will continue to provide serious challenges to companies and their managers.*

2. *Senior managers across a variety of different industries indicate that VUCA analysis is a relevant and useful tool for dealing with the changed (and changing) environment.*
3. *The VUCA analysis process described by Meyer (2019) seems useful; it is straightforward but also (and more importantly) provides executives with actionable recommendations regarding issues likely to need special attention and (for those areas) actions likely to be especially useful.*
4. *It turns out that developing and better-utilizing human capital (including training, career-pathing, development and utilization of expertise, and experimentation) show up as a “best practice” for dealing with challenges flowing from each of the VUCA variables (that is, Variability, Uncertainty, Complexity, and Ambiguity). It seems clear that the tension between order and disorder plus the continuous presence of movement (i.e., characteristics of our changing environment, and elements underlying VUCA analysis), can generate new perspectives and cause questioning and continuous organizational learning. When managers fight, question, learn and discover the new, this creates tension in successful organizations and can be a creative source of the company's continued development.*
5. *In their reflections regarding VUCA and its usefulness, several senior executives mentioned issues identified in the call for papers for this special issue as “topics of interest,” issues commented on and the executive making those comments include:*
 - a. *Regarding customer service, by DePinto: “. . .we are an immediate consumption business...the e-commerce businesses are starting to encroach on our space. They are in fact beginning to redefine convenience as we have traditionally known it. We’re working to move our company toward being more of a technology company that works in coordination with our traditional convenience stores...to offer increased convenience (to our customers).” (Forsythe et al., 2018, pp. 2-3).*
 - b. *As for technological innovation and disruptions, by Leduc: “We have technology that is constantly advancing, and we have commercial and military customers redefining what their business models are and [what] they value now vs. what they previously did.” (Forsythe et al., 2018, p. 5).*
 - c. *Reflecting on technological innovation and disruptions, by Fucci: “I’d say the same things that are affecting our clients are affecting us, which is artificial intelligence, robotics and cognitive technology. Our clients are struggling with the question of how they incorporate these innovative technologies into their day-to-day operation. Therefore, if we’re going to consult with them, we need to be ahead of the curve and help them decide how they use this technology...We must anticipate things that aren’t even fully baked yet, but it’s mostly around technology. I call it the “everything is a ‘what-if’ scenario...” (Forsythe et al., 2018, pp. 6-7).*
 - d. *In reviewing liquidity and bankruptcy issues by a senior executive from Altos de Tinogasta, mentioned earlier in this manuscript: “. . . many companies will disappear, others will weaken, only 20% will survive this crisis. . .” (Aimar, 2020, p. 3).*
 - e. *Regarding technology innovation and disruption issues by a senior executive from Globant, mentioned earlier in this manuscript: “VUCA context favors this course (that is, artificial intelligence, or AI) of action. AI is knowledge and technology; it produces great changes...”*
6. *The authors believe that the above observations by senior executives in a variety of industries relating to issues identified in the call for manuscripts for this special issue support the following ideas:*
 - a. *The COVID-19 pandemic and global health crisis has not introduced change to the business environment; rather, it has increased the number of dimensions which are changing and accelerated the pace of those changes.*
 - b. *VUCA analysis has the potential to be an extremely useful and relevant managerial tool, for managers struggling to cope with the covid/post-covid business environment, that is, a business environment featuring not only an increased number of dimensions of change but also an acceleration in the speed of those changes.*

CONCLUSION

This article began by highlighting several characteristics (order, disorder, and movement) of the current environment in which we live and work. It seems clear that organizations need tools to help cope with challenges from our changing environment; one tool which seems likely to be useful is VUCA analysis. The origins of VUCA analysis and definitions of its four components (Volatility, Uncertainty, Complexity, and Ambiguity) are discussed. After describing a process for doing VUCA analysis suggested by Meyer (2019), the article provides several comments and/or examples provided by executives and/or analysts, regarding VUCA analyses and their usefulness.

Based on the research carried out by the authors using primary and secondary sources, several important implications emerged. There is a belief that our environment will continue to change and in the midst of this changing environment, VUCA analysis can be a useful tool. The VUCA analysis can be used by managers across a variety of industries, to make decisions. A third and final important implication from our examination of this topic is that the primary and secondary source executive comments suggest that VUCA analysis has the potential to be useful to managers dealing with many of the issues identified in the prevailing pandemic era.

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COVID-19 CRISIS AND INTERNATIONAL BUSINESS AND ENTREPRENEURSHIP: WHICH BUSINESS CULTURE ENHANCES POST-CRISIS RECOVERY?

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ABSTRACT

Since the global outbreak of Coronavirus (COVID-19) at the end of 2019, while all countries were trying to respond to the shock by working together or acting alone, countries are still racing to save their economies and develop vaccination plans, while minimizing all possible damages to attain a speedy recovery. However, little attention has been paid to cultural aspects of responses to the pandemic across countries and regions. Based on Hofstede's cultural paradigm with five dichotomous dimensions, this study examines the variation of cultural practices across international economies as it is deemed to potentially promote or hinder COVID-19 relief, as well as consequent business recovery around the world. It is concluded that cultural characteristics under relatively long-term orientation, collectivism, high power distance, low uncertainty avoidance, and low self-indulgence would tend to subdue the public health crisis and enhance economic restoration. Corporate policy makers and entrepreneurs are therefore advised to consider infusing and practicing such cultural norms as proposed, to regain post-COVID-19 business growth and sustainability.

Keywords: COVID-19, Hofstede's paradigm, corporate policy, entrepreneurs, sustainability

INTRODUCTION

Since the global outbreak of the Coronavirus (COVID-19) from the end of 2019, all countries have been trying to respond to the shock by working together or acting alone. They are all racing to save their economies and develop vaccination strategies, while minimizing all possible damages to attain a speedy recovery from the pandemic. The COVID-19-induced demand shock is real and substantial, starting from the days when universal business and social lockdowns and stay-at-home orders were issued; this led to pervasive production shortfalls and business sales followed by employee furlough and lay-offs. Numerous studies have focused on the 'hardware' capacity relating to public provision and shortage of medical rescue and assistance, economic and business impact and relief, and other socioeconomic aids (Bartik, Cullen, Glaeser, Luca, Stanton, & Sundaram, 2020; Cavallo & 25 MBA/Harvard students, 2021; Cohen & Meulen Rodgers, 2020; Cutler & Summers, 2020; Khot, 2020; Nicola, Alsafi, Sohrabi, Kerwan, Al-Jabir, Iosifidis, Agha, & Agha, 2020; Schellekens & Sourrouille, 2020; Sheridan, Andersen, Hansen, & Johannesen, 2020). These are done concurrently with research and development on COVID-19 vaccines, whereas the equally important disease preventive scheme centered on cultural practice, referred to as the 'software' capacity, nevertheless receives little or

no immediate attention (Bruns, Kraguljac, & Bruns, 2020). Although nationals across countries either completely or incompletely with complaint or resistance followed the state-mandated public safety measures (e.g., face-masking and social-distancing), many have little or no idea that cultural forces may essentially play a role in curbing the pandemic—both in medical and macroeconomic terms.

As more and more business sites announce, “No mask, no business,” people with mixed feelings may wonder, “Is this a ‘point of no return’?” The pre-epidemic business convention (i.e. open and free customer behavior without protective devices) seems so distant and currently unappreciated. Even if an advanced era of business ‘digitalization’ seems imminent and inevitable, most customers still maintain hopes of returning to their pre-COVID-19 social life and business norms. Currently developed literature pertaining to the studies of public-health (medical) conditions and global or domestic economic impacts and remedies would shed light on the cross-regional cultural analysis between Western and Eastern economies to add relevant intellectual contribution to the ongoing COVID-19 crisis (Bartik et al., 2020; Cutler & Summers, 2020; Cavallo et al., 2021; Egger, Miguel, Warren, Shenoy, & Vernet, 2021; Jackson, Weiss, Schwarzenberg, Nelson, Sutter, & Sutherland, 2021; Martin, Markhvida, Hallegatte, & Walsh, 2020; Nicola et al., 2020).

COVID-19 Fallacy—It Is More Than Just a Medical Disease!

COVID-19 creates ironically more ‘excitement’ than scenes from a science fiction movie. It is heavily political, religiously intermingled, and said to be theoretically conspiring. This is supported by strong medical evidence (Cheng, Wong, Huang, So, Chen, Sridhar, & Yuen, 2020; Eikenberry, Mancuso, Iboi, Phan, Eikenberry, Kuang, & Gumel, 2020; Feng, Shen, Xia, Song, Fan, & Cowling, 2020), rational use of face (Liu & Zhang, 2020; Lyu & Wehby, 2020; Martin et al., 2020), including recent statements of the U.S. Center for Disease Control and Prevention (2020). It is claimed that the face-mask is one of the ‘most powerful weapons’ to fight against COVID-19, as mask-wearing can effectively protect individuals and their communities from virus spread; any related fallacy is mostly ill-founded and lacking in medical and scientific support.

COVID-19 vs. Politics: Is wearing a facemask ‘politically correct’?

Politics is paramount today, with COVID-19 being no exception. From face-masking to COVID-19 vaccine production and allocation, politics is inevitable—even the six-feet social distancing is claimed to be the ‘military protocol’ (National Public Radio, 2020). In late May of 2020, as facing the COVID-19-related death toll reached 100,000—and currently close to 600,000 as of June 2021—the then-U.S. President Trump disparaged those who wore face masks, calling it ‘politically correct’ not to do so. Despite U.S. former Vice President and current President Biden arguing that “it is not political; it is just ‘correct’ to fortify face-covering to prevent the virus from spreading (CBS News, 2020), Trump’s gesture however has invited his followers to disapprove of face-masking to show their loyalty to the party. Rather unsurprisingly, some other national leaders, such as Brazil’s President Bolsonaro, Belarus’ President Lukashenko, and Mexico’s President Obrador, were poised to ‘lead by example’ choosing

largely not to cover their faces in public and downplay COVID-19 as a ‘little flu’ with small danger (see Painter & Qiu, 2020; Etehad, 2020).

COVID-19 vs. Religion: Is wearing of facemasks not biblical and social-distancing against God? Will those who comply receive the ‘ultimate punishment’ from God?

In East Asia and many other places around the world, it is common that people use ‘folklore therapy’ to treat medical conditions with or without the use of formal medicine, and often invoke the supernatural or religious force of deity beyond science. Since the outbreak of COVID-19 across the U.S. and other Western countries, ‘in the name of God’, people against face-masking alleged that wearing a mask is not biblical while social-distancing for evangelical activity disgraces God (Yezli & Khan, 2020; Venkatesh & Edirappuli, 2020; Huynh, 2020). In a late-June, 2020, county commissioners hearing at Palm Beach, Florida, the citizens who were anti-maskers charged that the state mask-mandate was not only political as a ‘devil’s law’ and a ‘communist dictatorship order’ against ‘constitutional right’ and ‘freedom of choice’, but it also led to an act of ‘throwing God’s wonderful breathing system out’, while people who ‘obey the devil’s law’ by wearing masks would be ‘punished by God’ and not able to ‘escape [from] God’ (The Telegraph, 2020; TYT Investigates, 2020).

COVID-19 vs. Conspiracy Theory: ‘Who’ is really behind COVID-19?

As summarized by U.S. National Public Radio (2020), conspiracy theory is conceived on the essences of ‘a plausible but not necessarily real element’, ‘one (rich) individual or institution having the desire to ‘control the world’, and ‘the anti-tech movement’ (Ahmed, Vidal-Alaball, Downing, & Seguí, 2020; Jovančević & Milićević, 2020; Meese, Frith, & Wilken, 2020). Different scenarios of COVID-19 conspiracy have been denounced from the national level where, for instance, both the U.S. and Chinese governments each finger-pointed calling COVID-19 the ‘Wuhan’ or ‘China Virus’ against ‘U.S. Virus’, desiring to condemn to potentially suppress the counterpart’s political power amid the already-tense U.S.-China trade wars (Pomfret, 2020). The other scenario involves the Hollywood science-fiction creativity in Schwarzenegger’s style or superhero of Marvel movie series fighting against the ‘bad guy’ who attempts to deploy a lethal weapon, through some unprecedented high-tech scheme to control the world. In the COVID-19 incident, three key ingredients—Coronavirus and its ‘ultimate vaccine tracking chips’; Bill Gates and his global vaccination research; and, 5G cellular network (i.e. the ‘high-tech’)—sketch the ‘perfect’ conspiracy. The fictitiously conspiring plot then goes that Bill Gates, the world-renowned elite and the ‘bad guy’, secretly triggers the pandemic which would rely on his Gates Foundation funds and vaccination research to develop the vaccine for a cure. Then, once the vaccine with a tracking device is injected into the human body, it sends signals to the 5G activated network which is Gates’ ultimate control. Regrettably, such deceitful intrigue goes viral via telecommunication and across social media, causing many to believe them. Rather than the combat the virus epidemic, such ‘infodemic’ (misinformation spreading) from ambitions anti-vaxxers and anti-techs could potentially lead to more devastating damages than the COVID-19.

COVID-19 Verity—Cultural Practice Affects COVID-19 Crisis Management

Although many believed that the Coronavirus does not choose who and where one is—rich or poor, male or female, young or old, powerful, or weak, public, or private, or domestic or foreign—the infectivity of the disease and its control do reflect somewhat in national practices of culture. So, does culture play a role in a country's COVID-19-crisis management? It certainly does. Since the outbreak of COVID-19, in economies such as China, Japan, Hong Kong, Singapore, South Korea, Taiwan, and Vietnam, although they faced initial intensities of outburst with surges of confirmed cases and sudden high death rates (in thousands in China), the sign of worsening was quickly under control after the first couple of months due to instant state interventions. In contrast, in Western countries including the U.S., U.K, Italy, France, Germany, Spain, and Brazil of the Southern Hemisphere, virus spread was lagged a couple of months after rising in the East, but not effectively contained as it progressed gravely like a 'wildfire' across the drought.

COVID-19 is new to every country where mostly none is prepared for its inception. The urgency of generating immediate medical hardware and taskforce to the rescue is needed while facing resource shortages and challenges. Countries which could promptly and effectively respond to the crisis and curb the casualty must rely on factors other than the hardware and utility infrastructure, such as the 'software' in one's culture (Hofstede, Hofstede, & Minkov, 2010). Such software in cultural traits reflecting whether a government could work cohesively with its citizens in all aspects (e.g. maintaining political, economic, and social order; comprehensive mandates followed by complete civil compliances) become crucial to fight against, and control, the contagion. When many argued that the lagged months after the Eastern outbreak should provide enough time for the Western nations (especially the well-developed ones) to prepare themselves for the potential hit. This nonetheless ended up with disappointing crisis responses. It is deemed to be the fact of culture—to say the least, the political—as some of the bureaucrats appeared over-confident in their disbelief and shortfalls in conquering the virus-war.

COVID-19 vs. Culture: Theoretical Foundation

Across generations, culture is reckoned to be the foundation of human behavior even if defined in conceptual variations. Hofstede (2001) identified culture as the "collective programming of the human mind that distinguishes the members of one group or category of people from another", whereas Matsumoto (2000, p. 24) defined it as "a dynamic system of rules—explicit and implicit—established by groups in order to ensure their survival, involving attitudes, values, beliefs, norms and behaviors, shared by a group, but harbored differently by each specific unit within the group, communicated across generations, relatively stable, but with the potential to change across time". Essentially, culture endogenizes human behavior while how humans act reflects their underlying culture.

Since the early 1980s, the Hofstede paradigm or cultural system by Geert Hofstede (Hofstede, 1980) has been widely used in cross-cultural psychology, which later became a

popular application in international business and multicorporate management. It follows six categories classifying human and business behavior into long-term versus short-term orientation, individualism versus collectivism, high versus low power distance, strong versus weak uncertainty avoidance, indulgence versus self-restraint, and masculinity and femininity. (See Table 1B for extent of these dimensions in the U.S. national culture).

Long-term versus short-term orientation

Long-term orientation refers to “the fostering of virtues related to future rewards—in particular, perseverance and thrift” whereas, short-term orientation denotes “the fostering of virtues related to the past and present—in particular, respect for tradition, perseverance of ‘face’, and fulfilling social obligations” (Hofstede et al., 2010). A culture of high score is labeled as long-term oriented—orienting ‘future’ and promoting personal assertiveness and materialism, whereas a low score implies short-term focus—favoring ‘presence’ (‘now’) with a more relaxed lifestyle and less material gain.

Individualism versus collectivism

Individualism refers to “societies in which the ties between individuals are loose; everyone is expected to look after himself or herself and his or her immediate family”, whereas collectivism denotes “societies in which people from birth onward are integrated into strong, cohesive in-groups, which throughout people’s lifetime continue to protect them in exchange for unquestioning loyalty” (Hofstede et al., 2010). A culture scoring high in individualism indicates that as individuals are prone to self-interest, it is contrary to those in collectivism with low score who tend to integrate into a strong and cohesive group with consistent loyalty.

High versus low power distance

Power distance refers to “the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally” (Hofstede et al., 2010). For a culture with high power distance scoring high, organizational ranks are palpable and hierarchical, and power is distributed favorably toward superiors but inauspiciously against subordinates. In cultures of low score reflecting low power distance, rewards, force, and prestige are more equally shared within organizations.

Strong versus weak uncertainty avoidance

Uncertainty avoidance refers to “the extent to which the members of a culture feel threatened by ambiguous or unknown situations” (Hofstede et al., 2010). A high-scored culture implies people insecurity and less daring to take risks. In the workplace, employees are contained by formal rules and likely to shy away from challenges, resulting in difficulty of implementing new changes in the organization. In contrast, a culture scoring low shows low avoidance of

uncertainty as people are open for changes, and welcome and accept new ideas, thoughts, and beliefs.

Indulgence versus self-restraint

Indulgence refers to “a tendency to allow relatively free gratification of basic and natural human desires related to enjoying life and having fun”, whereas self-restraint denotes “a conviction that such gratification needs to be curbed and regulated by strict social norms” (Hofstede et al., 2010). A high-scored culture typically approves indulgence and encourages individuals to ‘treat oneself good’ and ‘reward oneself’, while a low-scored counterpart sinfully disgraces self-pleasure, believing self-restraint and strict discipline honor intrinsic human value.

Masculinity and femininity

Masculinity refers to societies “where emotional gender roles are clearly distinct: men are supposed to be assertive, tough and focused on material success, whereas women are supposed to be more modest, tender and concerned with the quality of life”. Femininity, on the other hand, signifies societies where “emotional gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life” (Hofstede et al., 2010). As linking to the definition and distribution of gender role, a masculine society with high score means that men seem to be assertive and competitive, prioritizing goal-achieving over relinquishment, whereas in a feminine culture both genders are deemed to be more caring, harmonious, and mutually modest.

Data and Sample

Fourteen countries from well-industrialized and first- and second-tier newly industrialized economies (NIEs) across the West and the East which are ranked highly in COVID-19 cases and deaths against their relatively low-impacted counterparts are studied. These comprise the U. S., Brazil, the U. K., France, Italy, Spain, and Germany in the West, and Japan, South Korea, China, Singapore, Hong Kong, Vietnam, and Taiwan in the East. Data of COVID-19-confirmed cases and total deaths of these countries are extracted from WHO (2021a) and from data banks including Statista (2021) for Hong Kong, Worldometers (2021) for South Korea, and the Taiwan Centres for Disease Control (2021) for Taiwan between March 9, 2020, and March 3, 2021, across 51 weeks. The percentages (rates) of cases and deaths are estimated by dividing the country-specific cumulative number of cases and deaths, respectively, by the country’s population. The statistics on regional and global economic outlook are retrieved from McKinsey & Company (2021). The corresponding cultural dimension scores are extracted from the website of Hofstede Insights (2021).

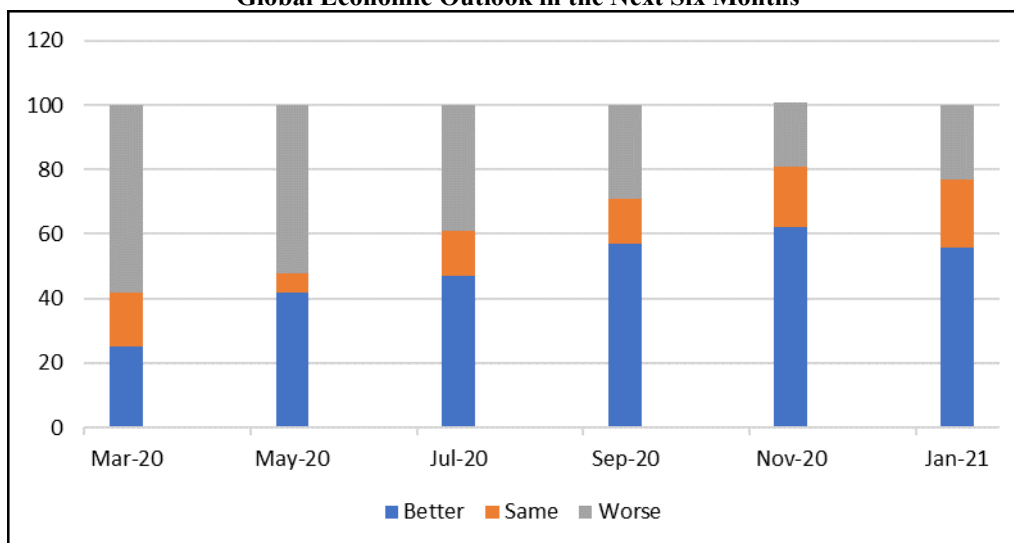
EMPIRICAL FINDINGS AND DISCUSSIONS

COVID-19 Impact on Business and Future Economic Outlook

In the wake of the global public health crisis since early 2020, the global economy has been shattered by widespread cross-country business and social lockdown, temporary or permanent shutdown of businesses, suspension of trade and travel, record-high unemployment or furlough, and under-performance of government. Numerous studies (Bartik, et al., 2020; Cavallo et al., 2021; Cutler & Summers, 2020; Egger et al., 2021; Jackson et al., 2021; Martin et al., 2020; Sraders & Lambert, 2020; OECD, 2021) reported that over a million companies worldwide, big or small or domestic or foreign, suffered from different degrees of COVID-19-affected sales reduction and business closures; others fought against time to transform into omnichannel operations while avoiding ‘bricks and mortar’ to survive. Even if most governments work jointly or act alone trying to appease the pandemic and rescue their economies from being austere, most businesses still face ongoing challenges. This is because the pre-crisis level of operations would not seem to easily resume if the universal vaccinations is not achieved, as commented by WHO with a currently unknown percentage to reach the herd immunity threshold of world population (see WHO, 2021b).

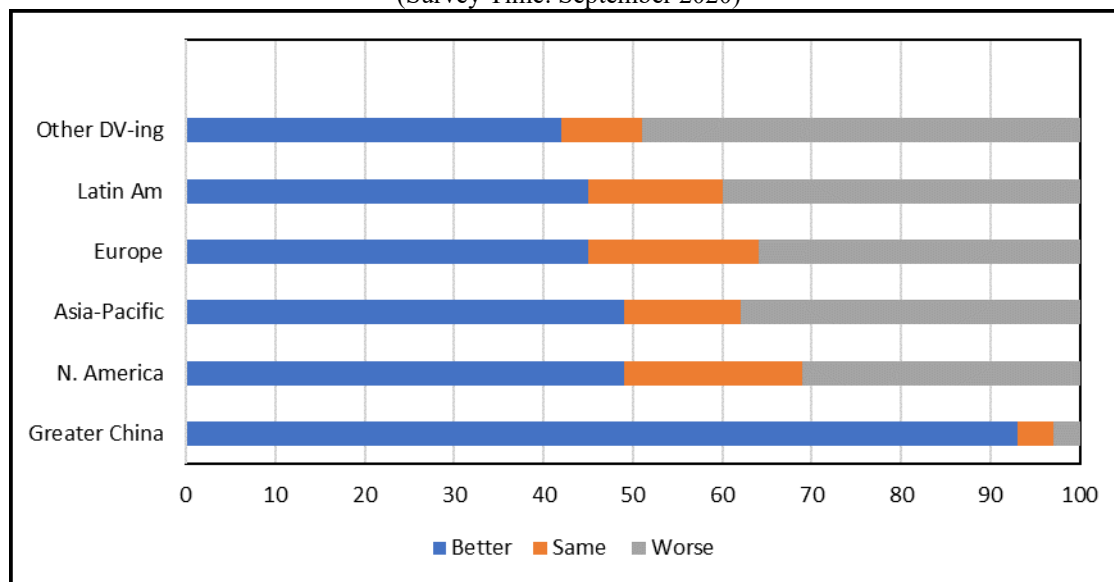
Nevertheless, amid various uncertainties, McKinsey & Company (2021) surveys released the information that global business executives expressed their optimism in forthcoming economic climate. As illustrated in Figure 1A, global business atmosphere was gloomy at the inception of COVID-19 outbreak but were progressively filled with confidence and positivity in the hope of seeing the ‘light at the end of the tunnel’, thanks to the development of global disease-fighting networks and plans of action for vaccination. Its recent survey shown in Figure 1B even depicts highly positive economic sentiment among the companies’ home-offices in the region of Greater China (including Hong Kong and Taiwan), followed by those in North America and the Pacific-Rim, although a somewhat pessimistic business mood is observed in Europe, Latin America, and other developing regions.

FIGURE 1A
Global Economic Outlook in the Next Six Months



Source: McKinsey & Company (2021).

FIGURE 1B
Home-Country Economic Outlook in the Next Six Months
 (Survey Time: September 2020)



Source: McKinsey & Company (2021)

Preliminary Statistics of COVID-19 Across Regions

Table 1 presents the COVID-19 condition across the West and the East as of March 03, 2021, where both infections and deaths were topped in the U.S., Brazil, and Europe, while the crisis control seemed relatively effective in East Asia. The population-based affected case and

death rates of COVID-19 were high in the U.S., U.K., Spain, and France, in contrast to the less-than-1% low rates across major Asia-Pacific economies (except Singapore's 1% affected case rate).

TABLE 1
Western vs. Eastern Economies, COVID-19 Statistics as of March 03, 2021

Country	Cumulative No. of Case	Cumulative No. of Death	TTL Population	Affected Case (%)	Affected Death (%)
Western Economies:					
U.S.A.	28,825,174	522,469	331,002,651	8.7084	0.1578
Brazil	11,122,429	268,370	212,559,417	5.2326	0.1263
U.K.	4,229,002	124,797	67,886,011	6.2296	0.1838
France	3,860,118	88,613	65,273,511	5.9138	0.1358
Spain	3,164,983	71,727	46,754,778	6.7693	0.1534
Italy	3,101,093	100,479	60,461,826	5.1290	0.1662
Germany	2,518,591	72,489	83,783,942	3.0061	0.0865
Eastern Economies:					
Japan	443,001	8,402	126,476,461	0.3503	0.0066
China	102,172	4,849	1,471,286,879	0.0069	0.0003
S. Korea*	92,471	1,634	51,710,000	0.1788	0.0032
Singapore	60,062	29	5,850,342	1.0266	0.0005
Hong Kong**	11,258	203	7,507,000	0.1500	0.0027
Vietnam	2,529	35	97,338,579	0.0026	0.0000
Taiwan***	978	10	23,570,000	0.0041	0.0000

Source: WHO (2021a)

*Worldometer (2021).

**Statistica (2021).

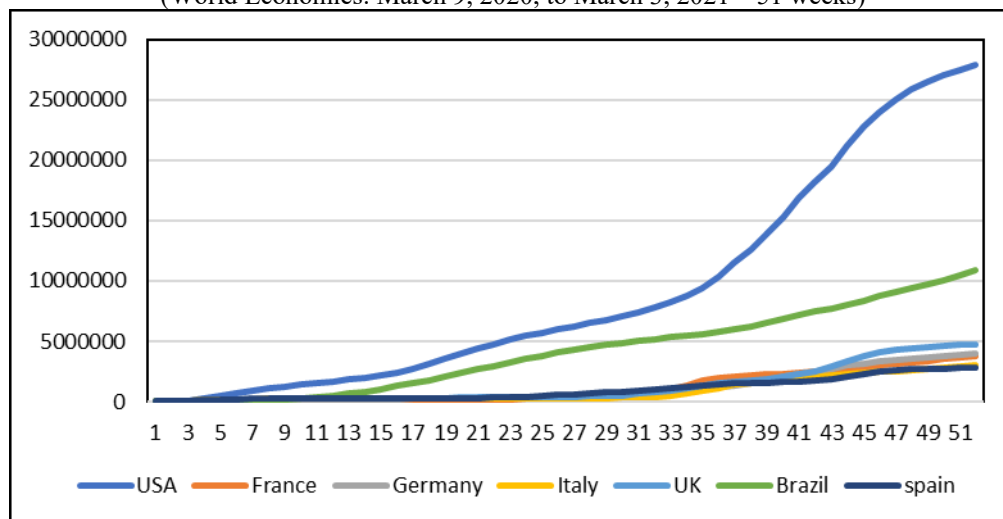
***Taiwan Centres for Disease Control (2021).

Alternatively, from a flow and dynamic viewpoint, the trends of COVID-19 in cases and deaths across the West and the East over 51 weeks between March 2020 and 2021 are illustrated in Figures 2A and 2B (Western economies), and 3A and 3B (Eastern economies). As somewhat expected, the cases followed by growth of death rates after the first several weeks (Weeks 7 or 9 in most countries) reveal the intrinsic human nature and governmental character as they first reacted to the shock and then acted either proactively or reactively to the crisis management. Proactive governments tended to activate proactive safety measures such as imposing face-masking and social-distancing orders and limiting business and social activities; whereas, reactive governments refuted the effectiveness of public safety measures, with a few even claiming such calls to be some sort of political or economic conspiracy. Consequently, a proactive government supported by its proactive citizens, such as those in major Asian economies except Japan would seem to ameliorate the COVID-19 crisis, while the misfortune tends to linger when a reactive government is followed by a skeptical and resistant public, as seemingly observed in the Western world.

In Asia, China as the outbreak origin—and given its largest and dense population—was able to suppress and stabilize its infection and death, while Singapore and South Korea were able

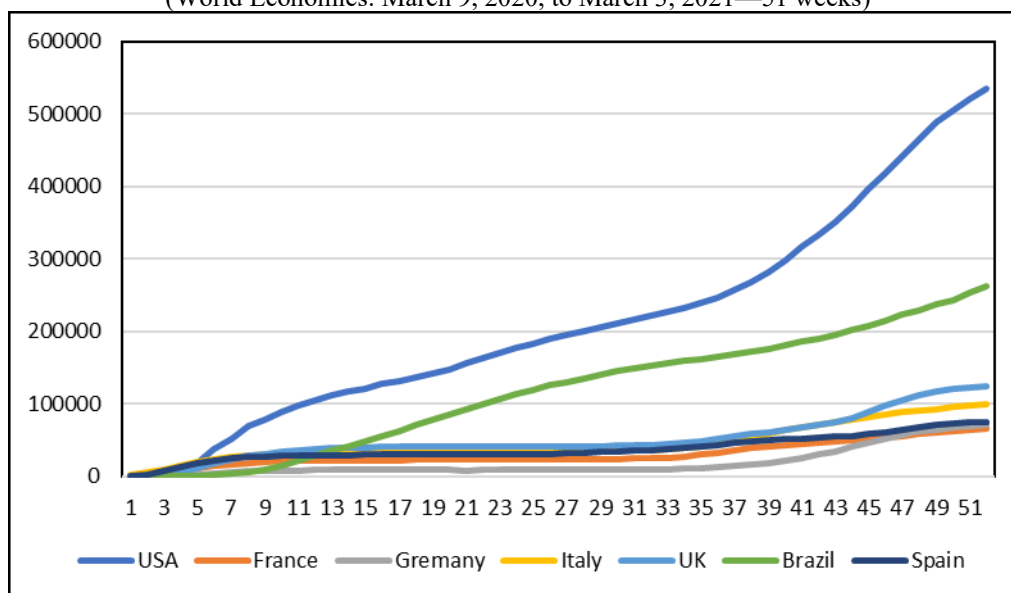
to curb their COVID-19 incidents after experiencing cases and death surges, respectively, in the early months due to Singapore's 1.4 million Southeast Asian migrant workers. These workers mostly lived in crowded dormitories, and South Korea's first outbreak epicenter in the City of Daegu hosted mega-religious gathering. In Japan, its casualty outburst included the case and death tolls of the Diamond Princess cruise ship. In October 2020 it was reported that a sizeable elderly (70 years and older) population was subject to developing serious medical conditions (see report by Japan's Ministry of Health, Labour and Welfare (2021)). See also, Clark, Jit, Warren-Gash, Guthrie, Wang, Mercer, and Checchi (2020). As Japan is anticipated to host the COVID-19-postponed 2021 Summer Olympic Games in Tokyo, its government is under pressure to tamp down the pandemic with time constraint while showing its strategy and capacity in ongoing crisis management to ensure and provide a COVID-19-safe Olympic environment.

FIGURE 2A
Cumulative Weekly Changes to Number of Cases in Western Economies
 (World Economies: March 9, 2020, to March 3, 2021—51 weeks)



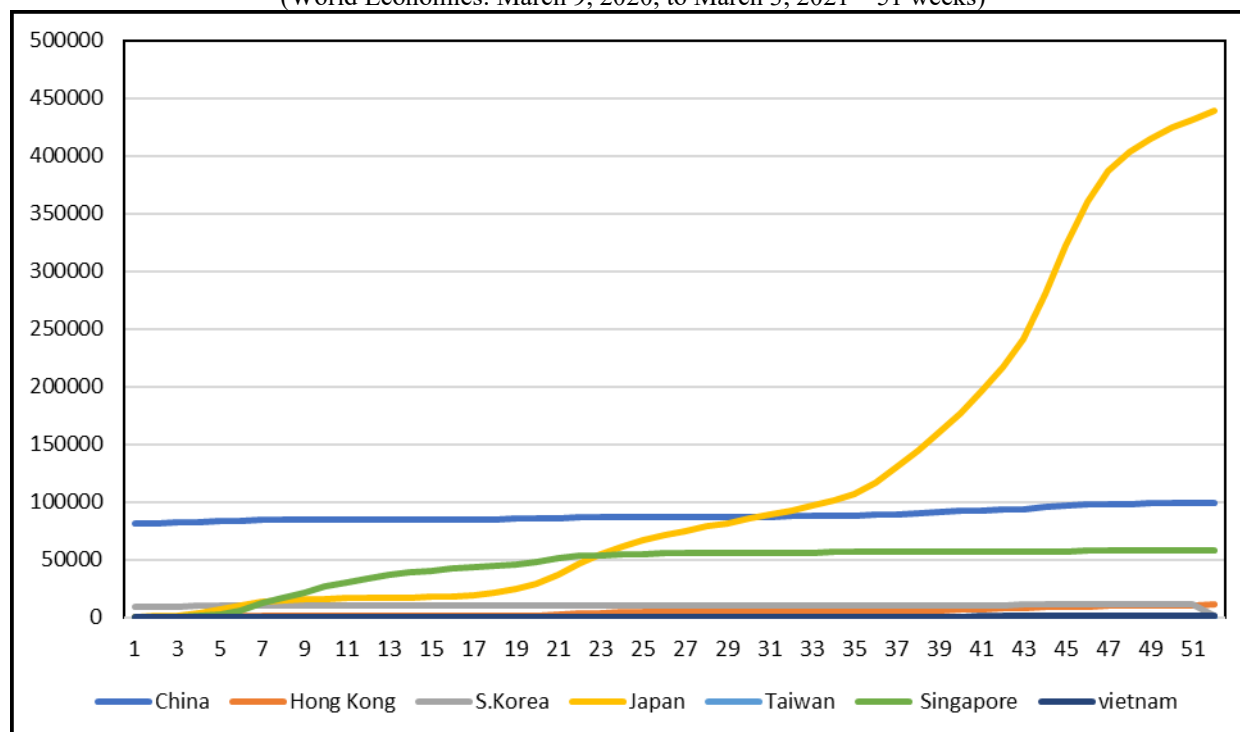
Source: WHO (2021a)

FIGURE 2B
Cumulative Weekly Changes to Number of Deaths in Western Economies
 (World Economies: March 9, 2020, to March 3, 2021—51 weeks)



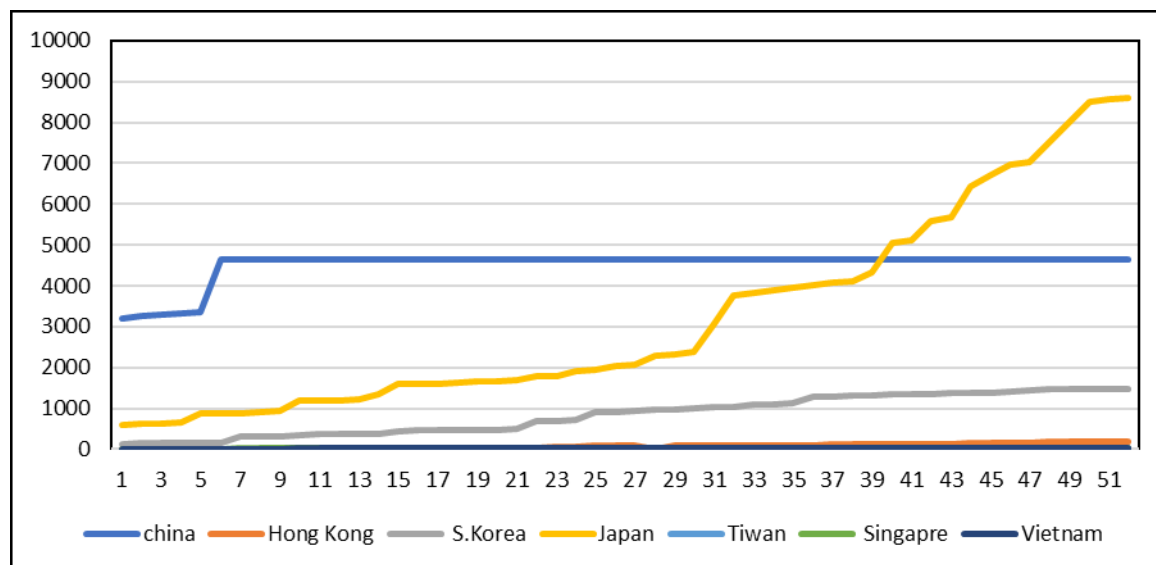
Source: WHO (2021a)

FIGURE 3A
Cumulative Weekly Changes to Number of Cases in Eastern Economies
 (World Economies: March 9, 2020, to March 3, 2021—51 weeks)



Source: WHO (2021a)

FIGURE 3B
Cumulative Weekly Changes to Number of Deaths in Eastern Economies
 (World Economies: March 9, 2020, to March 3, 2021—51 weeks)

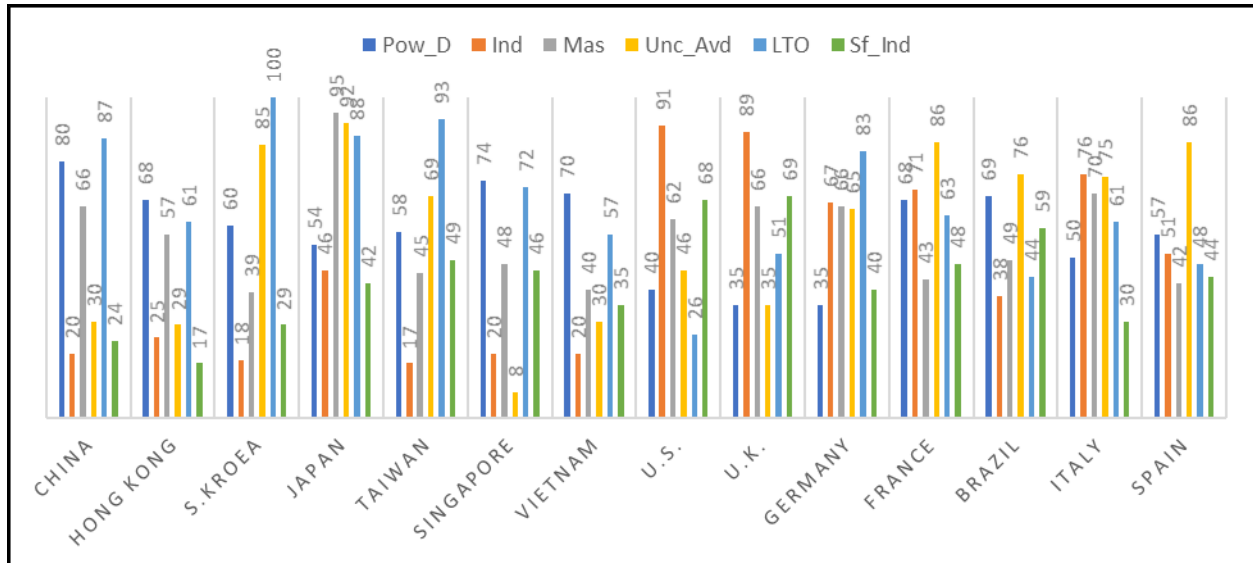


Source: WHO (2021a)

Hofstede's Cultural Evidence of the West and the East

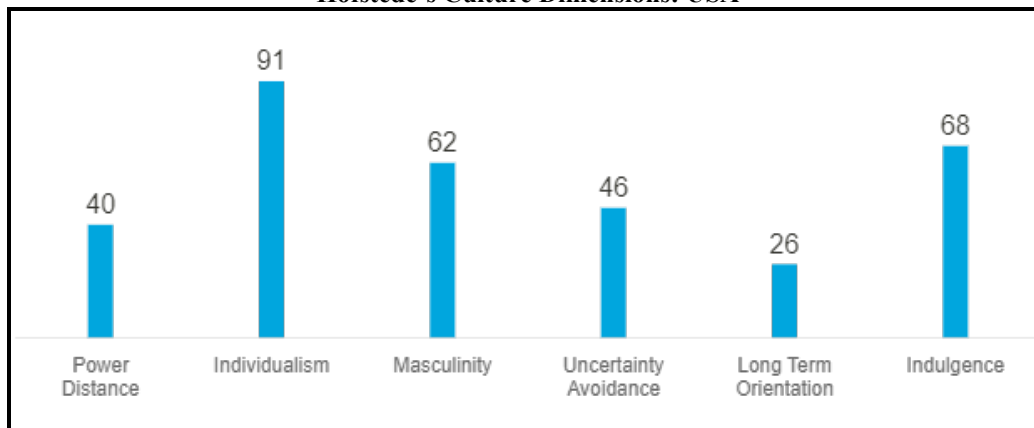
Figures 4A, 4B and 4C demonstrate regional cultural traits, cultural traits in the USA, and uniqueness across Western and Eastern economies. In sum, as compared with those in the East, the general culture of the West maintains lower power distance, higher individualism, higher uncertainty avoidance, less long-run focus, and higher self-indulgence, as it signifies Westerners who favor less hierarchy (especially in the U.K. and Germany), encourage the pursuit of self-interest (especially in the U.S. and the U.K.), possess likelihood of resisting challenges (especially in France, Brazil, and Italy), prioritize short-run goals (especially in the U.S. and Brazil), and endorse personal pleasure-seeking (especially in the U.S. and the U.K.). On the contrary, Easterners emphasize overall conservatism in high-power gap (especially in China, Hong Kong, Singapore, and Vietnam), social collectivism (especially in China, South Korea, Taiwan, Singapore, and Vietnam), long-term orientation (especially in China, South Korea, Japan, Taiwan, and Singapore), low self-indulgence (especially in China, Hong Kong, and South Korea), while being flexible and ready for changes (especially in China, Hong Kong, Singapore, and Vietnam).

FIGURE 4A
Hofstede's Culture Dimensions: Eastern vs. Western



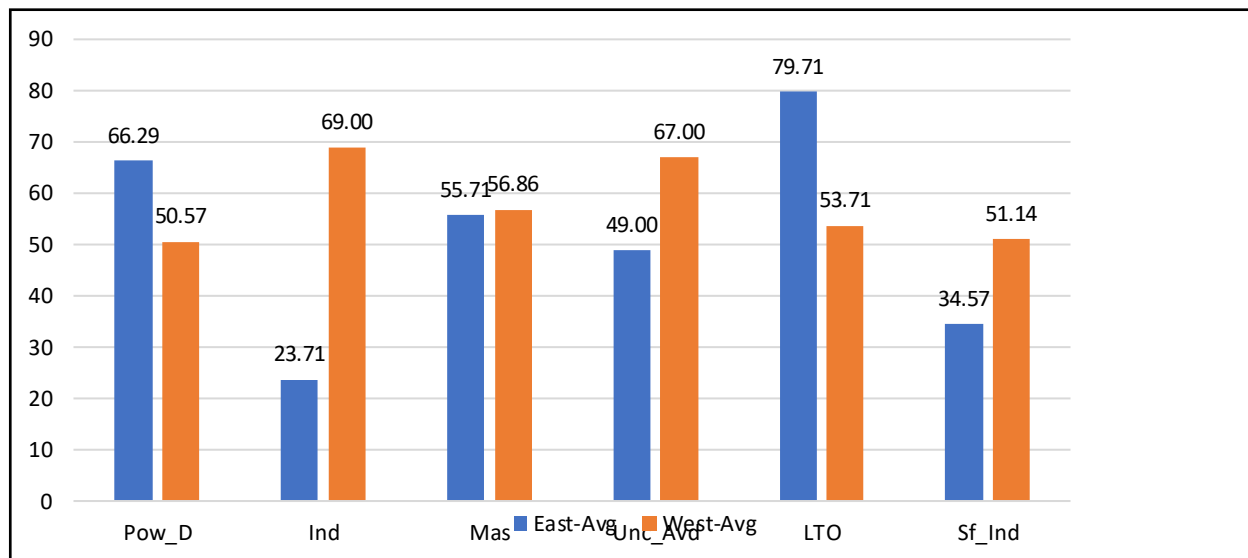
Source: Hofstede Insights (2021b).

FIGURE 4B
Hofstede's Culture Dimensions: USA



Source: Hofstede Insights (2021b).

FIGURE 4C
Hofstede's Culture Dimensions: East-West Regional Comparisons



Source: Hofstede Insights (2021b).

Culture Combined: What can international entrepreneurs learn from cross-cultural practices to promote post-crisis growth and business sustainability?

Since the coronavirus outbreak, only scant literature attests to the implication of cultural perspectives on pandemic prevention and control. Gokmen, Baskici, and Ercil (2021) suggested that Hofstede's 'individualism' and 'self-indulgence' pose positive impacts on the increasing rate of total COVID-19 cases per million (IRTCCPM) across Europe, while a 'power-distant' culture is observed to lead to negative IRTCCPM, meanwhile leaving 'masculinity', 'uncertainty avoidance', and 'long-term orientation' insignificantly improving COVID-19. Similarly, in a pre-COVID-19 study by Deschepper, Grigoryan, Lundborg, Hofstede, Cohen, Van Der Kelen, and Haaijer-Ruskamp (2008), 'power distance' and 'uncertainty avoidance' play more positive and impactful roles than other Hofstede dimensions in European antibiotic use, suggesting that European patients tend to respect the 'power order' from their physicians to avoid the consequential risks.

In this qualitative study across Western and Eastern economies, it is shown that the comparatively effective control reflected in major Asian countries' low COVID-19 case and death rates has resulted from their regional cultural practice. This may serve as a pragmatic example for other counterpart regions to assess and reflect in their pandemic management and business tactics. East-regional low 'individualism' customarily suggests that its people value collective and in-group culture, which prioritizes social altruism over those of the individuals. In the implication of COVID-19 control which needs national-level collective collaborations, a low

individualistic society is deemed to follow the state order for new business guidelines and other safety calls more closely, presumably ending in lower virus contagion and spread.

‘Long-term orientation’ is also an Eastern cultural norm, which describes individuals to be forward-looking and ‘patient’ for their future while willing to endure ‘present’ sacrifice, as opposed to the mindset of short-term focus on present enjoyment. In the COVID-19 intervention, future-oriented Easterners may mostly aim at their long-term welfare and therefore are more likely to adhere to pressing public safety protocols and practice business promptly accordingly. Contrary to Westerners’ relaxed lifestyle which may reflect in loose state-order compliance, Eastern businesses tolerate present sacrifice (e.g.: complete face-masking) to prevent any short-run disadvantages to safeguard their long-run prosperity.

As concluded in Gokmen et al. (2021), ‘power distance’ is influential in pandemic prevention across the European experience. Distinct power in a culture is recommended to slowdown virus transmission, while a ‘flattened’ power or ‘squeezed’ hierarchy tends to deteriorate disease control. In Eastern economies, high power distance keeps people in different ranks and ‘distances’, counter to the flatter hierarchy in Western societies. Facing COVID-19, oriental firms follow a normative power gap by complying with state safety regulations to avoid mandated business lockdown, and therefore conceivably contribute to restraining the disease from aggravating.

As asserted by Gokmen et al. (2021), adoption of ‘self-indulgence’ is to invite more virus infection. Parallel to the outcome of ‘individualism’, self-indulgence (hedonism) emphasizing one’s interest in the pursuit and freedom of choice may lead to lax compliance of public decrees. In Eastern businesses, practical conservatism confines the quest for such desire to persuade its buyers and sellers to support and follow the societal goals. This shows in the process of COVID-19 relief where less-emphasized self-indulgence or hedonism is normally endorsed by civil subservience in face-masking and social-distancing around the business environment.

‘Masculinity’ in Hofstede’s cultural setting receives no significant distinction across the West and the East. As also validated by Deschepper et al. (2008) and Gokmen et al. (2021), medical exercise and public health (crisis) management in general are unlikely to be affected under masculine or feminine practice of a culture. Hence, in managing COVID-19-affected businesses, firms and entrepreneurs are advised to impose their public safety codes based on their operative capacities and customers’ needs, along with other cultural references.

Finally, ‘uncertainty avoidance’ reveals the degree of cultural acceptance in changes. As claimed by Deschepper et al. (2008), citizens of a high uncertainty-avoiding culture are observed to follow existing rules while discrediting changes. In Eastern economies, low uncertainty avoidance compared with that in the West may offer a plausible rationale as to why they could calm their regional COVID-19 contagion, thanks to the flexibility of taking challenges and swift adjustment to public safety orders as new norms. Facing the novelty of COVID-19 and its unknown development, instantaneous crisis response of international businesses and their proactive strategies are imperative. Indeed, a culture with higher propensity to accept changes, like the one witnessed in the East, is believed to potentially produce affirmative results for business recovery and sustainability.

Post-COVID-19 Global Business Policy and Recommendation

Given the above cross-regional cultural analysis and implication of ongoing the Coronavirus spread, it is important that international business leaders and entrepreneurs, while developing strategies and safety measures to sustain organizational operations, take the country's inheritance and business culture into account for COVID-19-relevant business management. As 'prevention [following cultural norm] is better than cure' declared by Ubani (2020), Hofstede's cultural classification across Western and Eastern economies indicates that low COVID-19 case and death rates of the latter are deemed to be notably attributed to its cultural practices. These include long-term orientation, collectivism, high power distance, low uncertainty avoidance, low self-indulgence, and impartial masculinity. Cultural idiosyncrasy and difference are natural across regions which promote cross-cultural learning and should be appreciated while cultural ethnocentricity should be discouraged. During the prolonged epidemic, the gradually pandemic-fatigued public would resume some or more of their conventional business activities. It becomes critical therefore, for companies worldwide to not only be pragmatic and coordinate jointly, but also learn from one another in cultural contexts to combat the virus for global relief.

As Western businesses may ponder the low virus case and death rates across the East while assessing how its positive COVID-19 preventive outcome is achieved, it is essential to note that disease control and prevention rely on collective actions of a nation, while considering business cultural aspects of (1) long-term orientation by which firms should undertake short-term sacrifices by requiring customers' public safety practices for long-term sustainability; (2) low individualism by which businesses prioritize societal goals to act communally by protecting one another from disease aggravation; (3) high power distance by which firms follow state safety codes with complete compliance; (4) low uncertainty avoidance by which businesses adopt social and business flexibility for changes and new rules; and, (5) low self-indulgence by which firms promote collective and altruistic pursuit rather than accommodating individual business interest.

CONCLUSION

The unprecedented COVID-19 pandemic has interfered with all aspects of human life publicly or privately around the globe. Many studies have been conducted to provide advice on COVID-19-related medical rescue and public health crisis management, concurrent with national monetary and fiscal plans to alleviate the economic and business disturbances—whereas scant analysis has been applied to the cross-cultural impact on COVID-19-affected business management. This study acknowledges the importance of national or regional 'hardware' capacity, including medical remedy and economic and financial stimuli for disease relief, while it stresses the vital 'software' of cultural exercises contributing to organizational and business recovery and sustainability.

From the Hofstede cultural paradigm across Western and Eastern economies, it is believed that effective pandemic control most likely results from a collaborative culture, reflected in long-term orientation, low individualism, high power distance, low uncertainty avoidance, and low self-indulgence. An early and inclusive compliance of state-mandated safety

measures need to be adopted by all citizens and businesses—while the risks of failing interventions due to any form of defiance may prevail in a contrary culture. Entrepreneurs and international business policy makers contemplating future post-COVID-19 business management should therefore take the pragmatic cultural traits of Hofstede's paradigm into consideration. Indeed, we should put away the jargon, “East is East, and West is West, and never the twain shall meet.” (Kipling, 1940).

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IDENTIFYING AND SELECTING ALTERNATIVES: HOW COGNITIVE FLEXIBILITY CAN HELP MANAGERS MAKE BETTER BUSINESS DECISIONS

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ABSTRACT

Effective decision-making requires managers to search and evaluate potential options and the possible impact of those decisions. Entrepreneurs and managers alike make decisions throughout the day and lots of those decisions can significantly affect the manager's career or the profitability of their business venture. Entrepreneurs and managers also make decisions that affect employees, vendors, and other business stakeholders. However, entrepreneurs and managers often make decisions very quickly, without the benefit of long deliberation. Because of this, persons will often default to standardized decisions without thoroughly evaluating all options or searching for new, creative decisions.

The field of psychology applies innovative approaches to assist individuals in organizations in utilizing creative approaches to decision-making and problem-solving. This approach offers help in developing cognitive flexibility skills to improve management decision-making.

Keywords: cognitive flexibility, CogSMART, DBESTE

INTRODUCTION

Manager vs. Entrepreneur

Throughout the day, managers might have to make numerous decisions within the scope of their work. Higher-level managers will make decisions with an even more significant impact on persons within and outside the organization. Especially during the startup phase of the business venture, an entrepreneur is called upon to make virtually every decision, from choosing a strategic direction to deciding which social media platforms would be most effective for marketing the business.

The dynamic nature of business often requires managers and entrepreneurs to make decisions very quickly, without the benefit of extensive research and deliberation. The necessity of making a quick decision, or a repetitive one, will sometimes mean the default decision will be the easiest decision to make. However, this might not be in the business's best interest or the decision-maker. Ideally, the decision-maker will have sufficient time and information to evaluate and deliberate over the decision carefully.

DISCUSSION

Cognitive Flexibility Defined

Gokcen, Arslan, & Tras (2020) defined cognitive flexibility as the ability of a person to make sense of who they are, what they feel, and direct it with the people of the outside world. Cognitive flexibility might involve the ability of a person to be aware of different alternatives, be confident with the choices made, adapt to different circumstances, and learn current information. Afterward, persons can learn cognitive flexibility over time.

Braem & Egner (2018) specified that cognitive flexibility organizes the brain when quickly switching between tasks. Cognitive flexibility can be related to the environment and subconscious. Psychologists describe human behavior as the capability to rapidly reconfigure the way of thinking and switch between numerous responsibilities. People can also quickly change their focus from different resources. An example might involve sorting laundry from color to fabric and switching to dirty laundry (Braem & Egner, 2018). Consequently, this skill could be recognized widely as the primary purpose of cognitive control and be more vital with applying multitasking in the digital age.

Tona, Revers, Verkuil, & Nieuwenhuis (2020) noted that cognitive flexibility involves learning associations between motivations, outcomes, actions and quickly adapting with ongoing behavior to change the environment significantly. These changes can be crucial to human survival. Takeda & Fukuzaki (2021) suggested that cognitive flexibility refers to an essential activity in the brain's frontal lobe. Cognitive flexibility could be explained as the cognitive role of changing a concept. This concept appears to be set up in the brain to something different.

Cognitive flexibility allows people to work with different responsibilities and face unexpected circumstances in the natural environment, including hostile conditions. Cognitive flexibility can also be considered a comprehensive notion. “2 examples of “lower-order cognitive flexibility are basic-reinforcement learning and reversal learning.” (Tona, Revers, Verkuil, & Nieuwehuis, 2020). Consequently, these cognitive tasks can rely on feedback, allowing people to be taught adaptability and unlearn goal-directed behavior. Two instances of higher-order cognitive flexibility involve “extra-dimensional attentional set-shifting and task switching” (Tona, Revers, Verkuil, & Nieuwehuis, 2020). Extra-dimensional attentional set-shifting involves the capability to adapt behavior openly after constructive criticism. Task switching is also considered a more effective form of cognitive flexibility because it is unaltered by constructive feedback processing and learning.

Peng (2020) noted that cognitive flexibility might involve the individual's essential expertise to evaluate and adapt to continuing situations and the distribution of cognitive processes suitable in vibrant environments. Cognitive flexibility includes recognizing options in situations, commitment to adjust to the situation, and applying efficiency in flexibility situations that humans might come across. Individuals with elevated cognitive flexibility might be willing to encounter different conditions and adapt and overcome to meet circumstantial needs.

Ram, Chandran, Sadar, & Gowdappa (2019) showed that cognitive flexibility could include adapting cognitive processing tactics to face new and unexpected conditions in the

environment. Cognitive flexibility also includes switching cognitive sets to adapt to changing environmental stimuli. Ram, Chandran, Sadar, & Gowdappa (2019) noted that cognitive flexibility is related to critical thinking skills and coped with problem-solving stress and decision making.

Asici & Sari (2021) noted that cognitive flexibility could also be applied to different age groups, including adolescents and college students. The researchers found cognitive flexibility positively related to higher academic, social, emotional, and increased self-efficacy, higher resilience, better mental well-being, greater competence with peers in social relations. Cognitive flexibility can also be positively associated with happiness across life satisfaction and higher subjective well-being in young adults in college.

Fortunately, the conditioning and prompting of cognitive flexibility might enable positive changes in behavior. Subsequently, learning and applying cognitive flexibility might provide questions for data models for assignment switching and speculate about impairments about cognitive flexibility in neurocognitive disorders. Additionally, abnormalities in flexibility might be made to differentiate several mental health disorders. Braem & Egner (2018) noted that researchers studied cognitive flexibility on several unique levels, including individual variations. Also, many psychologists might concur on the type of behaviors that involve cognitive flexibility; however, little might be known about the exact timing, the way to be flexible, and how to be flexible. Gokcen, Arslan, & Tras (2020) suggested that one of the theories might explain why patience contributes to the concept of cognitive flexibility.

Cognitive Flexibility Inventory-BEE (CFI) study

Gokcen, Arslan, & Tras (2020) recommended using a cognitive flexibility inventory-BEE (see table 2.33 p. 7). The Cognitive Flexible Inventory (CFI) consists of a Likert scale used to assess the ability of humans to generate unconventional, consistent, and reasonable beliefs in challenging conditions. The scale contained twenty questions consisting of two subscales that included “alternative and “control.” Consequently, the scale included six reverse-coded questions. “Alternatives” subscale can evaluate the capability to distinguish different options to life experiences and human actions, and the human ability provided a variety of resolutions to challenging problems as manageable. The scores ranged from 20–100-point values, and researchers believed that cognitive flexibility increases as the score increases.” BEE subscales involved elevated internal consistency in the initial scale. The internal consistency coefficient for this study was .90 (Gokcen, Arslan, & Tras, 2020).

Gokcen, Arslan, & Tras (2020) prepared a correlation analysis and found a positive relationship between cognitive flexibility ($r = .28$; $p < .01$) and a negative relationship between patience and emotion regulation ($r = -.25$; $p < .01$) Table 2. In addition, the researchers formulated a multi-regression analysis to establish the complexity of “emotion regulation and cognitive flexibility in patience.” Gokcen, Arslan & Tras, 2020). The researchers noted that emotional regulation difficulty and cognitive flexibility variables drastically predicted university students’ patience. According to the standardized regression coefficient, the strongest predictor variable was cognitive flexibility ($p < .001$ $B = .33$). In addition, emotion regulation

difficulties predicted patience ($p < p.001$, $B = -.31$). Therefore, emotional regulation and cognitive flexibility variables might clarify over 18% of the total variance associated with patience (Gokcen, Aslan, & Tras, 2020). However, in a psychology study, the literature on patience might be considered quite limited, according to researchers. The effect of cognitive, behavioral-based therapies should be assessed (Gokcen, Arslan, & Tras, 2020). Consequently, people with high-level patience tend to experience less emotional difficulties and more cognitively flexible individuals. Therefore, clinicians might consider developing psycho-education programs in patience, emotional regulation, and cognitive flexibility in areas such as behavioral health for organizations.

Cognitive Flexibility and Mental Health

Tona, Revers, Verkuil, & Nieuwenhuis (2020) reported that previous research showed neurotransmitters such as serotonin, norepinephrine, and dopamine regulate many forms of cognitive flexibility in the brain. Dopamine plays a role in how we feel; serotonin acts as a mood stabilizer, norepinephrine increases the prepares the brain and body for activity. Dopamine adjustment in the striatum might be critical for fundamental reinforcement learning and the combination of negative feedback during reversal learning. However, serotonin seems to impede responding after the reversal of various possibilities. In contrast, norepinephrine contributes to set-shifting and beliefs about humans' environment perception.

A clinical research study showed that patients with obsessive-compulsive disorder showed that inflexible cognitive people exhibited more severe impulse symptoms. Yu, Yu, & Lin (2020) showed that cognitive flexibility involves cognitively shifting and finding multiple solutions to problems to achieve goals. Thus, individuals with high and low impulsivity differed in shifting attention in different situations. Despite the significance of cognitive flexibility, knowledge might lack relationships between anxiety, depression, impulsivity in some regard. Cognitive flexibility served as a mediator concerning anxiety and three subscales of impulsivity. Yu, Yu, & Lin (2020) found that people with anxiety, depression, or both showed by-the-moment actions with little to no consideration for actions of their consequences. However, Yu, Yu, & Lin (2020) investigated how anxiety and depression influence impulsivity and negotiating and regulating the role of cognitive flexibility. Consequently, depression and cognitive flexibility might predict attention impulsivity and non-planning impulsivity. Therefore, flexibility moderated the effect of anxiety and motor impulsivity.

Ram, Chandran, Sadar, & Gowdappa (2019) revealed that the relationship between impulsivity, cognitive flexibility, and resilience might be unknown, but future research could uncover intriguing results. Impulsivity negatively affects executive functioning and might influence cognitive flexibility. Indirect evidence might imply a positive correlation of cognitive flexibility and low impulsivity; however, inflexibility could increase flexibility. Additionally, a comparable trend for cognitive resilience also exists, and resilience tends to include a mutual relationship with flexibility. The researchers also noted the lack of research regarding how variables relate and potential interventions.

Ram, Chandran, Sadar, & Gowdappa (2019) stated that their study evaluated the correlation between cognitive resilience, flexibility, and impulsivity. Researchers remarked that attempted suicide occurred with individuals with increased impulsivity and impaired cognitive function. Ram, Chandran, Sadar, & Gowdappa (2019) showed that impulsivity's lack of planning sphere of influence was harmful, and attention was positively related to cognitive flexibility. Therefore, this was statistically significant. Another finding of the study existed and included the fact that a statistically significant harmful relationship existed between impulsivity with cognitive resilience.

Small Business and Industry

There are many approaches to decision-making, and the way we approach the situation might influence decision-making. Ashley Merrill, CEO of Lunya, developed a seven-step process for entrepreneurial decision-making (Forbes, 2020). According to Merrill (2020), this process helps her make faster, better business decisions. Table 1 below lists the seven steps Merrill uses to help her guide decision-making.

Table 1-The Seven-Step Process for Entrepreneurial Decision-Making

Economic impact -determine how much the decision will cost the business in terms of time, money, and personnel. How much will this change help increase business revenue?
Brand and experience -is the decision one that is consistent with your brand? Will this decision improve your customer experience?
Worst-case scenario -what is the worst that could happen? Is the potential risk worth the potential reward?
Best-case scenario -what is the possible best outcome of this decision?
Opportunity cost -be sure to consider that this decision will shift your resources, including time and energy away to a new direction.
Gut instinct -your instinct should be based upon your past experiences. What does your instinct tell you?
Team ability -does your team have the resources and ability to take on the new decision and be successful?

Source: Merrill, 2020 (cited in *Forbes*)

Although this model might significantly differ from more traditional forms of decision-making, this approach makes perfect sense for an entrepreneur. This approach weighs heavily in the entrepreneur's past experiences, including what worked and did not work.

Cognitive flexibility could be one of the essential attributes for an entrepreneur. Research by Dheer & Lenatowicz (2019) noted the effect of cognitive flexibility on entrepreneurial intentions and, additionally, as a mediating effect of attitude toward risk-taking and entrepreneurial self-efficacy.

Cognitive Flexibility in Business

Cheng et al. (2017) determine that cognitive flexibility might be related to performance in the workplace and occupational settings. These occupational settings could include occupations that work 24-hour operations and affect the brain's executive functioning. The environment can allow employees to flexibly switch attention in abrupt changes in various situations correctly and effectively. Efficiency and flexibility of performance might be vital because delayed reactions can crucially affect outcomes, resulting in inferior performance or even physical danger depending upon the occupation.

Consequently, Peng (2020) showed that employees with superior cognitive flexibility, flexible thought processes, and strong confidence might be likely to find solutions and express their views more quickly to their leaders. In contrast, employees with minimal cognitive flexibility, inflexible thinking, and low confidence might find it challenging to find organizational problems and express ideas to their leaders.

Ma, Yang, Chen, You, Zhang, & Chen (2020) observed that scholars' effective employment of social networks might be affected by distinct characteristics and based on human motivation and ability. Therefore, understanding the responsibility of social associations in opportunity classifications might be vital. However, few researchers explored how an individual's psychological traits diminish the association between social networks and opportunity classification.

Gielnik, Kramer, Kappel, & Frese (2014) observed that in the construction of entrepreneurial discovery, researchers argue that dynamic evidence search offsets for a deficiency of entrepreneurial experience and might enrich the consequence of divergent thinking and "general mental ability on opportunity identification. Results of the study included the lessening effects of active information search on the relationships of entrepreneurial experience and divergent thinking on opportunity identification.

Jiatong, Murad, Li, Gill, & Ashraf (2021) stated that flexibility could apply to a critical communication area to perform a particular task. Earlier researchers developed measures for being malleable in societal, environmental circumstances. However, before people can show flexibility, they should initially be cognitively flexible and be cognizant of their surroundings. Consequently, cognitive abilities enable people to recognize prospects and apply information to conduct a profession in entrepreneurship. Cognitive flexibility can strengthen creativity, increase innovativeness, and contribute to more problems solutions. A person should understand upcoming possibilities to solve societal and environmental barriers with cognitive flexibility. From the neurological perspective, cognitive flexibility also lessens self-awareness and effective functioning of the working memory.

Cognitive Flexibility and COVID-19

During the 2020-2021 COVID-19 period, some people might have experienced increased depression, hopelessness, anxiety, frustration, violence, and substance abuse. However, many people employ coping strategies such as cognitive flexibility. Luckily, a significant amount of

people still fulfilled their responsibilities despite all the difficulties, and according to Canturk (2021), cognitive flexibility increased. Canturk (2021) showed that people conducted more practical methods to handle stress and found a moderate positive relationship between the total score with the level of using tactics to cope with stress in his study. Therefore, Canturk (2021) implied that activities that increase cognitive flexibility could be recommended to the population to cope effectively with the continuing pandemic stress.

Cambaz & Unal (2021) measured cognitive flexibility with online students' performance before and after assessment during 2019, 2020, and 2021. Their research study included one hundred and twenty-three hundred students. The study explored cognitive flexibility in the framework of students, and the distance education process took place more than usual due to COVID-19 and even business meetings that took place online around the nation and the world. The pandemic caused a global crisis in higher education and postponed graduations, cost jobs, postponed internships, postponed job offers. Unfortunately, numerous students faced difficulties such as changing learning styles, changing social engagements, and increased study hours. Students and employees alike have needed to develop their cognitive flexibility.

Cambaz & Unal (2021) discovered that cognitive flexibility was associated with positive outcomes during the pandemic period. In the current study, distance education played a significant factor in reducing students' cognitive flexibility. Additionally, stress from required online exams might further reduce cognitive flexibility. Also, Cambaz & Unal (2021) observed that a situation such as a family member's death might worsen the situation. Therefore, educators should consider more strategies to increase students' cognitive flexibility to adapt more effectively to distance education. These strategies can also apply to employees working online and applications in small businesses.

Cambaz & Unal (2021) noticed that cognitive flexibility enabled students to hold to and succeed with challenging tasks. Students also needed to be able to have the ability to adapt and overcome dynamic changes. Consequently, the concept of cognitive flexibility appears to be more evidence-based and more meaningful than psychological flexibility. Psychological flexibility can be similar but not the same construct. Both views involve various behavioral changes involving their environment. The substantial differences between them could be the role of acceptance and self in the situation. Furthermore, cognitive flexibility might consist of adapting to change indications; psychological flexibility involves individuals seeing themselves separate from their experience and emotions and acquiring the ability to accept these experiences.

Hurtubia, Fores, Martinez, Benitez, & Acuna (2020) showed that variables such as resilience and cognitive flexibility can be found in neuroscience. Neuroscience generated neurological evidence on the opposition of recovery, traumatic experiences, and stress. This might reveal that people can adapt to challenging experiences through cognitive flexibility or resilience. Hurtunia et al. (2020) noted the necessity of people living in the same household and encouraging resilience in poor captivity conditions. Additionally, the amount of education might be supported as a protected variable linked with cognitive flexibility in an individual. Hurtunia et al. (2020) suggested that a course of action should promote resilience early. Individuals should also start to form meaningful relationships early in life.

The pandemic increases feelings of loneliness, depression, anxiety, and diminished opportunities for bodily exercise and environmental stimulation for the elderly. Patra (2020) stated that COVID-19 forced lockdowns and social distancing across the globe since early 2020. Unfortunately, the elderly can be more susceptible to COVID-19 and other serious illnesses. Additionally, the elderly can also be vulnerable to mental disorders and, therefore, forced isolation causes significant concern. The World Health Organization announced that COVID-19 showed that the elderly are considered at risk for COVID-19 and are more prone to mental health symptoms.

Patra (2020) added that the elderly showed better overall mental health than the young despite the higher risk. They also showed a higher resilience and a more vital ability to regulate emotions and control stress. Consequently, the elderly showed more resiliency and cognitive flexibility than the younger generations. Patra (2020) suggested that the elderly cope better with adverse situations and keep meaningful relationships and a sense of belonging. Moreover, a healthy diet, exercise, and hobbies also helped the elderly. Therefore, the elderly applied cognitive flexibility in numerous ways. Lots of elderly persons constantly learn and grow by participating in beneficial hobbies like yoga. Overall, a considerable number of elderly persons also enhance their coping ability during stressful life events with a wide-open and positive mindset towards a life with the ability to accept and move forward.

CogSMART and Cognitive Flexibility

Cognitive Symptom Management and Rehabilitation Therapy (CogSMART) is a type of cognitive training developed to help individuals improve their memory skills and includes attention, remembering to perform tasks, learning/memory, and executive functioning. Executive functioning includes planning, organization, problem-solving, and cognitive flexibility. CogSMART believes that improving these abilities will help people with cognitive symptoms or impairments perform better in their everyday activities and reach their school, work, social functioning, and independent living goals. CogSMART asks clients to keep these goals in mind as they learn and apply their new skills, so they continue their motivation to practice their skills and make progress toward their goals.

CogSMART cognitive training is successful for persons with brain injuries, psychiatric problems, and brain-related conditions that result in cognitive issues. CogSMART applies compensatory cognitive training instead of other programs that employ practice and extensive drills. CogSMART teaches people strategies to improve cognitive skills, practicing their cognitive strategy in real-world use and troubleshooting any complications that might develop. The goal of CogSMART is to assist individuals in making cognitive strategies become habits so that they will become automatic when needed in life. Therapists use CogSMART use effectively with individual clients, client groups, and classes.

Twamley et al. (2014) reported numerous studies that revealed veterans with mild to moderate traumatic brain injury showed problems with concentration, memory, learning, future memory, and problem-solving. Those assigned with CogSmart plus supported employment showed significant reductions in post-concussive symptoms and enhancements in memory

potential tasks. Twamley, Jak, Delis, Bondi, Lohr (2014) suggested that numerous strategies might be used with veterans with traumatic brain injury and cognitive impairments who seek supported employment for veterans with mild to moderate traumatic brain injury.

Twamley, Jak, Delis, Bondi, Lohr (2014) described that cognitive symptom management and rehabilitation therapy (CogSMART) consists of sessions that improve sleep, fatigue, headaches, and compensatory, cognitive strategies in the domains of prospective memory, attention, learning, and recall, and executive functioning. CogSMART can be considered compact and workable and can be applied without broad training. CogSMART might encourage family involvement in the first and last two interventions sessions. The family then can learn about traumatic brain injury and generate a plan supporting the patient's plan of new strategies for everyday life. One of the strategies that veterans learn during CogSMART is cognitive flexibility.

Twamley, Noonan, Savla, Schiehser, & Jak (2010) noted that veterans who experienced traumatic brain injuries and struggled with problem-solving can benefit from increasing their cognitive flexibility. For example, veterans might only see one solution to a problem and might not see other resolutions. Twamley (2010) recommended using a problem-solving method that involves a six-step problem-solving method (DBESTE). "The DBESTE consists of defining the problem, brainstorming solutions to the problem, evaluating each solution in terms of ease of implementation, costs, and benefits, and likely consequences, selecting a solution to try, trying the solution, and then evaluating the solution." (Twamley, Noonan, Savla, Schiehser, Jak, 2010). Consequently, the key to using DBESTE quickly would be to practice the method until the technique becomes automatic. Therefore, for years, DBESTE has been an effective tool to help veterans under the Veterans Administration increase their cognitive flexibility.

Twamley et al. (2014) found that CogSMART for veterans with mild to moderate traumatic brain injury (TBI) with supported employment showed significant reductions in self-reported post-concussive symptoms and improvements in conducting a task a day later. There were also nonsignificant CogSMART association reductions in PTSD and depressions and return to competitive employment within 14 weeks. On a positive note, all veterans rated CogSMART as helpful and added they would recommend the course to other veterans. Twamley et al.'s (2014) cognitive training approach for veterans with post-traumatic stress disorder and traumatic brain injury warrants further research. Despite modest effects on certain impacts of PTSD and depression with TBI CogSMART would not be considered a treatment of PTSD or depression alone according to Twamley et al. (2014). Therefore, CogSMART might improve post-concussive symptoms, and prospective memory performance psycho education regarding traumatic brain injury and post-concussive symptoms and training appeared by the veterans seem to be helpful.

SUMMARY AND CONCLUSION

Cognitive flexibility quickly organizes and reorganizes the brain when switching between tasks. Cognitive flexibility involves a persons' ability to be aware of different alternatives, be confident with the choices made, adapt to different circumstances, and learn current information.

Perhaps certain persons are born with more significant cognitive flexibility, while others might develop cognitive flexibility skills over time. Yes, the good news is that persons can learn cognitive flexibility and that new therapies such as DBESTE and CogSMART are increasingly developing to address cognitive issues. This could be a major step in developing management and entrepreneurial ability for certain individuals.

Cognitive flexibility can be found and measured to establish an individual's ability level. Persons with good cognitive flexibility can rapidly reconfigure their way of thinking and switching between various responsibilities. Additionally, they can also quickly change their focus from different resources. Organizations can develop cognitive flexibility if they choose to invest time and resources in their employees. Of course, organizations would have to be convinced that the time, money, and effort in developing cognitive flexibility would be a worthwhile investment for the organization.

As business disciplines continue to examine psychological concepts throughout business, researchers need additional study of their impacts and to develop additional techniques and processes that entrepreneurs and managers that can employ to develop better organizational environments, improve employee job satisfaction, and increase corporate profits.

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