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Increased Child Labor in Brazil in the Pandemic: Reasons behind the Increase

By Maysa Devides & Vitória Almeida Ramos

Abstract- This article aimed to analyze the reality and changes in child labor in Brazil during the period of the pandemic caused by the COVID-19 and how the state dealt with this fact led to an increase in inequality and social difficulties in the country resulting in the current situation. As well as understanding what are the possible ways to reduce this practice, increasing the rights of these children and adolescents and improving their experience. According to UNICEF (United Nations Children's Fund), globally, 8.9 million children and adolescents are at risk of being pushed into child labor by the end of 2022, thus, the ways to fight the virus used by the government may have failed with this class. As the Brazilian Federal Constitution of 1988 places it as the duty of the state, society and the family, to ensure health, education, and freedom, in addition, to protect them from any form of exploitation, cruelty, neglect, and oppression, therefore, this type of work should be decreasing rather than increasing.

Keywords: *brazil, covid-19, child labor.*

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Maysa Devides ^α & Vitória Almeida Ramos ^ο

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Keywords: *brazil, covid-19, child labor.*

1. INTRODUCTION

To facilitate the understanding of the topic "Increased child labor in Brazil in the pandemic" that will be debated during the research, it is necessary to understand what child labor and the coronavirus pandemic are. According to the International Labor Organization (ILO), the term "child labor" is defined as "work that deprives children of their childhood, their potential, and their dignity, and which is harmful to their physical and mental development" (ILO, 1990). Thus, there are several movements for the protection of these people, both from organizations and the government itself, such as articles in the Brazilian Federal Constitution of 1988, which seek to define and apply the protection of children and adolescents, aiming to deprive them of this practice and protect their rights and integrity, taking article 227 as an example (ILO, n.d. *apud* BRASIL, 1990):

Art. 227: It is the duty of the family, society, and the State to ensure children and adolescents, with absolute priority, the right to life, health, food, education, leisure, professionalization, culture, dignity, to respect, freedom, and family and community coexistence, in addition to

keeping them safe from all forms of negligence, discrimination, exploitation, violence, cruelty, and oppression.

However, even with laws that prohibit this practice, in 2016 about 1.8 million children and adolescents aged five to 17 years were living the reality of child labor in Brazil. (Governo do Brasil, 2021), making it possible to say that this action is still widely used in the country.

In December 2019, according to a report posted by PubMed (the biggest update portal in medicine in Brazil) written by Barreto (2020), the first case of COVID-19 was identified in China and two months later the first infected person in Brazil was recognized. In March 2020, the World Health Organization (WHO) defined the disease and the outbreak as a pandemic, as the cases were already present in several countries around the world.

This fact led to a global economic crisis and "several people lost their income or experienced a strong reduction in income" (Person, 2021). Thus, several families began to need financial assistance, which influenced the practice of child labor in Brazil, which will be explored during the work.

For the development of the article, a qualitative methodology will be applied, as it is defined as a form of descriptive research, which is developed through the collection of information from reliable sources, to explain facts, in addition to using numerical data to facilitate the visualization of some study arguments. Since, the research has as purpose to show how the pandemic influenced in the politic and economic system of Brazil and the way that this reality reached the most needed families and children all over the country, the chosen method is the best option to explain all that in a easier and understandable way.

Thus, bibliographic research will be prepared, applying primary sources, such as laws, having the *Brazilian Constitution of 1988* as an example, as well as secondary sources, such as reports and articles on the subject, which will portray the facts, exemplify the current reality and explain the measures applied by the government during this period, one of them being the article "UNICEF warns of an increase in the incidence of child labor during the pandemic in São Paulo", published by the institution itself.

Therefore, the choice of this study is justified, aiming at how the COVID-19 pandemic had a worldwide

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influence, mainly in the Brazilian reality as a whole, but with a focus on child labor, as well as exemplifying which were the auxiliary measures taken by the federal government, seeking to understand how the current reality of the Latin country in the fight against the virus was formulated and applied.

According to the website of the government of Brazil (2021), the country has one of the best laws against child labor in the world, with strict rules that define the possible forms of legal employment, as well as those that determine the concept of child labor. Over the years the state has shown a clear improvement in the number of cases, that is, the number of children and adolescents who are subjected to this type of work is decreasing. As mentioned earlier in the article, in 2016, 2.1 million young people experienced this reality, in 2019, this number dropped to 1.8 million. But that same year, the entire organization of the country was modified with a new obstacle, the COVID-19 (Brazil, 2021).

The Lowy Institute group in Sydney conducted a survey that analyzed the way that more than 100 countries dealt with the coronavirus pandemic, ranking Brazil as the worst in its fight, due to its nationalist ruler, who did not support the basic protection measures proposals by the WHO, such as the use of masks, confinement, and closures, thus causing more than 218,000 deaths (NCS, 2021).

Morales (2021) quotes in her report a speech by Fore, the executive director of United Nations Children's Fund (UNICEF), who explains that the second global lockdown directly influenced the lives of several families, because, with economic disruptions and reduced national budgets, these people are forced to take drastic measures to maintain their basic survival rights, such as food. Thus, these actions can have a direct influence on the lives of children and adolescents, modifying the number of young people who are engaged in child labor.

Thus, the research will discuss how the pandemic period changed the organization of Brazil in all its aspects, focusing on the economic issue, as the measures taken by the government to combat the virus caused the current reality experienced by all Brazilians, in this way, several families found themselves in difficult situations and needed to find ways to stay alive, even if these actions were not ideal, producing a big difference in the number of children and adolescents present in the practice of child labor and unhealthy situations.

After the presentation of this content and the topic under discussion throughout the article, the themes presented will explain the definition of child labor in Brazil and the world, which is the COVID-19 pandemic, how child labor is occurring during this period, what are the possible ways of solving the problem under discussion, and finally, the final considerations of the work will be made. Thus, the main questions in debate in the research are: Did child labor

increase during the COVID-19 pandemic period? What actions led to this result? Is there any way to help these young people?

The general objective of this article is to analyze the consequences of the pandemic caused by the COVID-19 pandemic in the area of child labor in Brazil and how the government is dealing with this reality. Focusing on delimiting what is child labor and the coronavirus pandemic, defining whether there was an increase in cases of exploitation of these young people in this period, and analyzing what measures were applied by the government to combat this modality in these years.

II. CHILD WORK: WHAT IS IT?

According to ILO, not all work can be classified as child labor, it is characterized as the type of work that deprives children of their childhood and refers to jobs that follow the characteristics described below. Child labor is any form of work performed by adolescent and children below the minimum age allowed, according with the legislation of each country (Criança Livre, n.d). ILO (n.d) explain that for a job to be classified as child labor they must have the following characteristics:

It is mental, physical, social, or morally dangerous and harmful to children; It interferes with their schooling; Deprives children of the opportunity to attend school; Forces children to leave school prematurely or Requires that school attendance be combined with work excessively long and heavy.

The organization also describes that under ILO Conventions No. 139 and No. 182, which define some aspects of this way of exploitation, namely:

- Child labor is considered to be work performed by children and adolescents below the minimum age for admission to employment/work established in the country;
- Hazardous work is considered the Worst Form of Child Labor and should not be performed by children and adolescents under 18 years of age. Dangerous work is defined as activities that, by their nature, or the conditions in which they are carried out, endanger the child's physical, mental, or moral well-being. These activities must be established by each country;
- Slavery, human trafficking, forced labor, and the use of children and adolescents in armed conflicts, sexual exploitation, and drug trafficking are also considered the Worst Forms of Child Labor.

Equally worrisome are the types of work performed by children and teenagers that are often accepted by society, such as street vendors, car keepers and tour guides, making childhood work invisible, which increases their cycle of acceptance (Criança Livre, n.d). Therefore there is no fully accepted definition of child labour, so the article will relies on a

specific set of definitions used by the Brazilian government, which guides thinking assessment of child labor in the country.

In Brazil, specifically, child labor consists of survival or economic activities, whether paid or not, which are performed by children or adolescents under 16 years old, with an exception if you are an apprentice, from the age of 14 (Governo do Brasil, 2021). In the country, any form of child labor is prohibited until the age of 14, however, between 14 and 16 years of age, work as an apprentice is legally accepted; between 16 and 18 years of age, there is partial permission for teenagers to work - however, any night work, unhealthy, considered dangerous and painful for children and teenagers is prohibited by law (Childhood, 2019). According to the IBGE of 2015, about 2.5 million children and adolescents are in a situation of child labor in Brazil (Bezerra, n.d).

Child labor in Brazil has existed since colonial Brazil when slavery was predominant, and children were seen as targets of exploitation. With the beginning of urbanization and industrialization, the activity continued, many children became workers in factories in different fields. In addition to the country's history and culture, another factor that influences the existence of this illegal activity is poverty and lack of quality education, so the lower the family's income and educational level, the greater the chance of the child being subjected to work children (Childhood, 2019). According to UNICEF (2019), child labor has consequences for the physical and mental development of children and adolescents.

Work can limit the opportunity to be present at school and learn, that is, it ends up compromising the future of children and adolescents, reproducing situations of poverty. Furthermore, those who work against what is determined by law end up being subjected to different forms of exploitation and violence. Child labor is a serious violation of human rights, fundamental rights, and principles at work. Child labor is recurrently a cause and effect of poverty and the absence of opportunities to develop skills; it can impact the level of development of nations and frequently leads to forced labor in adulthood (OIT, 2021).

Brazil is considered a reference in the international community in terms of efforts to prevent and eliminate child labor. Since the mid-1990s, Brazil has officially acknowledged the existence of the issue and affirmed its willingness to solve it (OIT, n.d).

Through a graphic represented in the article on Toda Matéria website, it is possible to notice that the incidence of child labor in Brazil is higher in the states of São Paulo and Minas Gerais. Another piece of information acquired by the same graph is that the southern and southeastern regions of Brazil are the leaders in terms of child exploitation, even though they are the richest states in the country.

Despite this information, a South American country has many child protection policies to eradicate this practice, it was the "pioneer in the preparation of the list called TIP (Forbidden Child Labor), which contains the worst forms of child labor", among them are forestry, fishing, agriculture, the tobacco industry, domestic child labor, among others (Bezerra, n.d).

Other policies applied in Brazil to protect children and adolescents, according to Saldanha, are:

- Child and Adolescent Statute: defines the fundamental rights of children and adolescents and has municipal, state, and federal competence;
- Consolidation of Labor Laws - CLT: establishes activities that are prohibited for minors;
- Organic Law of Social Assistance - LOAS: determines a social protection system for the neediest groups of the population.

In addition to those mentioned above, the author also defines several other programs and social actions in various areas, such as: in education (School Health Program); at work (Job and Income Generation Program); in health (Family Health Program), among others.

Therefore, it is possible to understand that the country still has several cases of child labor even with several public policies to eradicate it, presenting a failure when applying for these laws and programs.

III. THE PANDEMIC

A pandemic can be characterized, using the WHO definition, cited in a G1 report (2020), as an epidemic that has spread across two or more continents, becoming a worldwide transmission, maintained from person to person. But not every disease that affects several countries at the same time can be considered a pandemic. Endemic disease that are in various parts of the world and are stable cannot be considered epidemics. Per example, the seasonal flu, which affects the northern hemisphere every winter; what defines a pandemic is, primarily, the analysis of intensity of the rate of contamination in the prolonging of the disease through the WHO (Politize, 2021).

In December 2019, the first case of SARS-CoV2, socially known as coronavirus, was reported in China and since then cases have started to spread around the world. Two months later, the disease arrived in Brazil, and in a matter of days it made its first victim, and thus, the beginning of the disease outbreak in the country happened (Pebmed, 2020).

As a way of trying to count and combat the spread of the virus, some protection measures were applied, including wearing a mask when you are in a public place, as it makes the risk of contagion drop by 95%; avoid agglomerations and public spaces, as social distance reduces contamination; do the test and isolate

yourself when you notice any symptoms of the disease - fever, loss of smell or taste, cough or sore throat - so treatment can be started momentarily and increasing the patient's chances of getting well; get vaccinated when you have the chance so that the person will protect and immunize themselves (Schiavon, 2021).

According to the bulletin *Direito e pandemia: Ordem jurídica e sistema judiciário não foram suficientes para evitar graves violações*¹, a higher dissemination of the virus occurred, promoted by the bad and controversial choices of the Brazilian Government under the leadership of the presidency of Republic. Through withholding resources destined to COVID-19, the Government hinders the assistance to patients in the public network of states and municipalities. Additionally, the war against governors and mayors who try to implement measures to prevent and fight the virus, like the obligatory use of masks, is constant (Elpais, 2021). Therefore, the president of Brazil fought against the choices of the governors and mayors who were trying to follow the OMS recommendations.

In addition to the high number of deaths caused by the disease, totaling more than 577,000 (G1, 2021), the pandemic also drastically shook the country's economy, causing 3 million unemployed. This increase in the number of people who lost their jobs was due to the need and difficulty of entrepreneurs to adapt to the measures adopted to contain the virus, thus, many families lost their income and needed to look for other ways to support themselves financially (EARTH, 2021). Therefore, it is possible to state that the coronavirus pandemic directly affected all people, having a clear impact on the low-income group, and thus causing a change in the number of children and young people in child labor, which will be discussed below.

IV. CHILD LABOR DURING THE PANDEMIC

After the confirmation of the first case of COVID-19 in Brazil in February 2020, the country started to adopt some measures suggested by the WHO to reduce the spread of the virus, such as the use of masks, hand hygiene, avoid touching the nose and mouth, seek care when presenting the first symptoms, social distancing, among others (Oliveira, 2020).

To combat the reality of hunger and poverty generated by the pandemic, as well as contain the health crisis by maintaining social distance, reducing inequality, and injecting resources into the economy, the Brazilian government developed another protective measure, called emergency aid, in 2020 (Beghin, 2021).

However, according to Jornal da USP (2020), the amount of the aid, R\$ 600.00, is not enough to help the neediest and needy families, thus, this most vulnerable group would still have to leave home to work

and get more income, increasing the spread of the disease and not fulfilling its function.

According to Souza (2020), after recording almost 20,000 deaths of Brazilians caused by the coronavirus, eleven states in the country increased their restrictions on the issue of social isolation and applied the lockdown, which can be defined as a total closure, that is, it is a more rigid social withdrawal.

As explained above, child labor according to ILO Conventions No. 138 and 182 can be defined as any work that deprives children of their potential and dignity, as well as their childhood, hindering their development. Other characteristics of the same are the jobs that endanger the child's moral well-being as well as the physical and mental, being considered as the worst forms of child labor human trafficking, sexual exploitation, drug trafficking, slavery, and the use of these young people in armed conflicts (ILO, n.d).

Since young people were away from schools and socially distanced due to the pandemic, the danger of increasing this form of work was accentuated, as in many cases, these children and adolescents could stay at home taking care of the environment and their younger siblings while their parents are looking for a job or even exchanging cheap labor in exchange for capital to help with the family income, as reported in some complaints, according to Ribeiro (2020). The same author explained that this form of abuse can be considered as housework, which normally comprises 94.1% of girls, 73.5% of whom are black, which can cause physical, psychological, and intellectual consequences. Due to the accumulation of workloads, these young women usually drop out of school due to fatigue, in addition to the risk of sexual and physical abuse that these children experience daily, as their employers may believe that these young women are there to serve them in all ways and in these cases, they use the salary and employment of the girl in question as a form of blackmail to get what they want (Ribeiro, 2020).

Another reason for this group of people to drop out of studies during this pandemic period is the lack of access to the materials needed to monitor distance learning applied to distance learning. According to Idoeta (2020), "in all these places, there are several reports of students without equipment or internet connection, families in an increasingly fragile economic situation". The same author explains that dropping out of school can cause future problems for these people who are without support, as without schooling, it will be more difficult for them to get a qualified job in the future.

This reality of change in child labor is global, according to UNICEF (2021), for the first time in two decades, there has been an increase in this modality, reaching a total of 160 million children and adolescents, presenting the risk of more young people entering this number until 2022 because of the pandemic if they do

¹ Law and pandemic: Legal order and judicial system were not enough to prevent serious violations

not have access to "critical social protection coverage" (UNICEF, 2020). The organization explains that due to the closing of schools and economic crises, these people may be in worse working situations and with an increased workload. However, in another UNICEF report (2020), the organization expressed concern about the increase in child labor in Brazil, specifically in São Paulo, during the pandemic. According to the text, "the incidence of child labor was 17.5 per 1,000 before the pandemic, and rose to 21.2 per 1,000 after the pandemic, an increase of 21%." (UNICEF, 2020).

Therefore, with this information, it is possible to affirm that the increase in child labor in Brazil in the last two years is directly linked to the pandemic and to the way the Brazilian government dealt with it, given that due to the little support and assistance provided to the families in need, these people had to adapt on their own to survive and have their basic rights, such as food. Therefore, this social group put itself at risk during this period, going out to work and not complying with social distancing as they did not have the option of staying at home, including children and adolescents, who were put to work to help family income or even self-support. These young people often also had to give up their studies, as they did not have the time or means to study online, the well-known ead (e-learning), which can directly affect their future and make it difficult when they are looking for a qualified job, containing your chances of improving your income and getting out of poverty.

V. CONCLUSION

After analyzing the consequences of the pandemic caused by the COVID-19 in the area of child labor in Brazil and how the government is dealing with this reality, it was possible to understand that work among children and adolescents has always existed, but in the last two years, it has increased relatively due to the pandemic and the policies adopted to eradicate it.

According to data presented by UNICEF, child labor exists and is undergoing changes in the number of cases worldwide, however, there is a greater concern with the Brazilian reality, since its occurrences are growing considerably and affecting other parts of the life of these young people, as many are suffering physical and psychological exploitation and abandoning their studies.

As seen throughout the article, it is possible to note that child labor is not a current problem but something that has been ingrained in our society for years. Thus, the article answered the questions initially proposed, as child labor increased during the period of the COVID-19 pandemic, due to the actions applied by the government and the weak public policies that should help and protect families/people in greatest need and to combat child labor during the pandemic, there needs to

be a long-term vision and a more urgent solution for the moment.

The pandemic in Brazil has created an even greater gulf between the economic and social classes in the country, not only as a consequence of the virus itself but also of decision-making coming from the federal government. Thus, to combat child labor during the pandemic in Brazil, greater investment in aid offered to needy families is needed, and a broader fight against COVID-19 so that the country's economy does not suffer so powerfully.

Aiming at a long-term solution, greater commitment by the country's powers to combat child labor is needed, reinforcing existing laws such as the young apprentice, punishing those who insist on hiring minors, and greater investment in the education of Brazilians of all social classes. Education must be seen as the best and possibly the greatest way to combat child labor, as it encourages children and adolescents to follow a new path.

In the fight to combat child labor it is important that society recognizes the impacts and consequences of such labor, whether physical or psychological, on the lives of working children and teenagers, thus, deconstructing the false idea that early work is an important path to social development.

Thus, the study sought to demonstrate its relevance through the increase in cases of child labor during the pandemic period, using Brazil as an example of how its occurrences are increasingly present in society and how the country is dealing so much with this way of exploitation as with the pandemic and its public policies, representing the government deficit with this social class, because the people who are currently experiencing the most difficulties are the ones who most need to put themselves at risk, not being able to fulfill the social distance because not having state support and thus placing children and adolescents in precarious employment situations, which can have a great long-term influence on the lives of these young people.

Finally, within the study area, the theme can be understood as a way to analyze the failures present in the application of Brazilian laws and government actions in recent years, since child labor is prohibited in the country and the kids and teenagers should be protected from this reality.

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Data Protection in the Metaverse: Concerns and Implications

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Abstract- In a world still striving for securing data protection and data sovereignty, the metaverse comes as one of the latest trends in technological developments and waves. Similar to its previous counterparts, the idea opens up a multitude of risks and threats, coming hand-in-hand with the opportunities it creates. This research paper tries to explore the possible data protection concerns and implications of the metaverse. The paper approaches this novel topic through the 'Life Cycle of Data Threat Model' that tries to pinpoint some threats in different stages of the data life cycle. The paper then tries to find out some emerging policy trends regarding the introduction of the metaverse, building on the currently existing policy trends of countries in data protection.

Keywords: *metaverse, data protection, national security, data privacy, security threats, avatars, data sovereignty, data life cycle.*

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Abstract- In a world still striving for securing data protection and data sovereignty, the metaverse comes as one of the latest trends in technological developments and waves. Similar to its previous counterparts, the idea opens up a multitude of risks and threats, coming hand-in-hand with the opportunities it creates. This research paper tries to explore the possible data protection concerns and implications of the metaverse. The paper approaches this novel topic through the 'Life Cycle of Data Threat Model' that tries to pinpoint some threats in different stages of the data life cycle. The paper then tries to find out some emerging policy trends regarding the introduction of the metaverse, building on the currently existing policy trends of countries in data protection.

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INTRODUCTION

The metaverse, as announced by Mark Zuckerberg in October 2021, is gaining noticeable momentum. Metaverse is expected to present huge economic and social opportunities such as in the health, education and industry sectors. However, this comes with a high cost; a wide range of risks on privacy, data protection, identity, cybersecurity, ownership, misuse, and digital sovereignty as well as economic and social risks such as impacts on vulnerable groups. Nevertheless, the metaverse is becoming a fact and reality each day, moving the world, even more, closer to the bigger idea of the metaverse. The metaverse model, as presented by Mark Zuckerberg, is a complicated futuristic idea of a one global metaverse, that requires some advanced technological and economic pillars to stand on. Despite still being quite far from this model with its prerequisites, the world is witnessing steady developments and manifestations of applying the idea, still scattered though featuring separate small metaverses rather than a one global metaverse. In this preparatory scene, it is very important to study the implications of the metaverse on privacy and data protection, being one of the biggest challenges posed by the metaverse. The paper sheds light on privacy and data protection concerns in the metaverse and how countries are preparing themselves for these challenges.

The importance of this topic comes in light of technological developments and their impact on national security. The concept of national security has

been evolving over time as a result of the new challenges that pose risks to national security. The world has seen national security threats and domains widening from military and security threats to economic threats then to social and humanitarian threats, such as the food security and migration issues then finally to cybersecurity and data protection threats accompanied by technological developments. [1]. Due to the novelty of the topic, little literature is available to review, however, it is important to properly locate the study within a suitable theoretical perspective that can link it with other related topics. The paper uses the 'Life Cycle of Data Threat Model' in order to analyse the threats presented by the metaverse according to the lifecycle of data. The model depends on dividing the lifecycle of data into 7 stages; data generation, data transfer, data usage, data sharing, data storage, data archival and data destruction [2]. In this sense, the paper is a new addition to the research on data protection and national security threats. The paper hypothesizes that the metaverse is a challenge to data protection and that countries need to react legally in order to protect data privacy in the metaverse.

1. THE METAVERSE CONCEPT

Metaverse is also called 'Web 3.0', denoting the latest development of the Internet generations (Web 1.0 being the world wide web and Web 2.0 being social media). There is no unified definition of metaverse. Literally, it is 'beyond universe', and it is described as 'an immersive and constant virtual 3D world where people interact through an avatar to enjoy entertainment, make purchases and carry out transactions with crypto-assets, or work without leaving their seat'. The term builds on several underpinnings; mainly technological and economic. [3]

Metaverse depends on several essential technologies; Virtual Reality (VR) and Augmented Reality (AR) that facilitate the entrance to the three-dimensional online environment through dedicated headsets and other devices connected to computers or games consoles. Artificial Intelligence helps create a virtual version of each user, called an 'avatar', who is the main player inside the metaverse, and is also used for seamless communications along with the Internet of Things technology. Economic underpinnings of the metaverse include cryptocurrencies and non-fungible tokens (NFTs) to monetize transactions inside the online

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world, backed by blockchain technology which helps in providing trust in the economic transactions.

The term 'metaverse' was first featured in the public consciousness through Zuckerberg's keynote presentation in 2021, however, it first originated in two novel works; Neal Stephenson's 1992 'Snow Crash' and Ernest Cline's "Ready Player One". Those versions about the metaverse matter because they proved self-fulfilling as so far. Both versions present the metaverse as 'a massive, persistent, open and economically developed virtual world', in the sense that it is a world that never pauses, open for anyone with VR hardware, where avatars can work, socialize, play and carry out extensive trading of goods and services through electronic currencies. [4]

II. DATA PROTECTION AND PRIVACY CONCERNS IN THE METAVERSE

As portrayed in the above section, metaverse will bring new dimensions to the data protection and privacy scene; where regulations of data protection have been so far tackling physical data about users/ people, and its movement between countries, the metaverse world will create totally new actors (avatars) in addition to the original users with massive amounts of data generated from new sources such as the data collected from facial and eye expressions, moving between different metaverses. This general idea carries many complications, concerns and policy issues to consider in terms of privacy and data protection. Some of the data protection and privacy concerns in the metaverse are presented in this section.

a) *Complicated roles*

The metaverse world blur the roles and responsibilities that have been established by data protection regulations throughout the past years. It is difficult to determine responsibilities and liabilities in the metaverse. This is even more dangerous in the light of the massive amounts of data generated in the metaverse. It is unclear now who is responsible for storing, processing and safeguarding data. Also it is unclear who is responsible for compliance with laws and regulations where it was normally the controller's responsibility to ensure individuals can exercise their rights and parties comply with laws and regulations. Data agreements may also be very challenging in a decentralized world. [3], [5]

b) *Data sharing and portability*

The metaverse will connect the person to their "avatar" or other digital representations. Therefore, countries would likely consider information collected about a metaverse user's activities to be personal data, subject to existing privacy and data protection laws. This raises complicated issues such as

jurisdictional responsibilities as well as portability and interoperability considerations. [5]

Metaverse presents problems of interoperability and movement of users inside and between different metaverses, together with their data and assets. It is also unclear whether this creates duplication with the real-world movement of data. Determining jurisdictions in the metaverse is very challenging, as a result of adding a new important player "the avatar". Will jurisdiction apply according to the location of the real-world user or the avatar or the location of relevant servers? Some additional contractual requirements apply in many countries in addition to some localization requirements, it is unclear how will this be handled in the metaverse. It is also unclear how concepts of 'extra-territorial reach' present in the GDPR and other regulations will be applied in the metaverse. [3], [6]

c) *Increase in the sources of data collection*

Users are likely to be providing more information about themselves than they are doing today, as a result of the diversity of sources of data collection. Instead of dealing with clear sources of data collection in the current situation, the metaverse will introduce new sources of data collection that may be very challenging to get users' consents on, such as eye-trackers that could give data and insights about emotions through the interpretation of facial expressions and brain wave patterns. Some legal experts recommend that metaverse regulations should be designed to limit the scope of emotion-responsive advertising.

Additionally, the modes used in the metaverse can pose high risks, that can be used to infringe privacy. In the metaverse environment, the players move their avatars around and the scene is observed by the player who can take either a first-person perspective and look through the eyes of their avatars, or a third-person perspective where the camera is not attached to the avatar allowing the player to watch both their own avatar as well as the environment around. In third-person perspective, which is sometimes the default, the camera can move independently of the avatar and can be taken to locations different from the avatars'. This practically allows the player to use the camera as a spying device. Even more, the camera can be attached to another avatar without this avatar's awareness. [3], [7]

One example of data sources that infringe privacy in the metaverse is some devices used in games such as Second Life Game [8]. A wrist watch for example, is provided for free in the Second Life. The watch reports the location of the watch wearer, plus any other avatars in proximity, then this data is reported to a database outside the virtual realm. The behavior of the watch wearer's friends within the avatar's proximity is monitored. Friends are unaware of the watch's function. Since the database is hosted on a website outside the

virtual realm, it is within reach of search engines such as Google. This kind of real-virtual interaction poses privacy concerns and data protection infringements. [7], [9]

d) *Mass profiling*

With reference to the above concerns, metaverse poses risks of mass profiling that can be used for advertising, controlling people's decisions and state surveillance, through access to sensitive data such as emotional reactions and biometric data.

e) *Proliferation of illegal and harmful content*

The metaverse is described as one of the decentralized autonomous organizations (DAOs), where avatars are the main content creators. It is unclear how the metaverse can regulate illegal and harmful content such as sexual harassment, disinformation, extremist ideas and pornographic content. It is also unclear how the children rights will be protected in the metaverse.

f) *The legal identity of avatars*

It is still unclear whether it is necessary to grant legal personality to avatars to hold them responsible for their actions. Will this be separate from the legal identity of the original users or are they linked? Does this pose risks to data protection and the risks of user identification? Since there are no specific laws regulating avatars, the content that users reveal via avatars may breach the personal protection of users and make them identifiable. Additionally, it is allowable in the metaverse to create alternate accounts, named as Alts, which allows users to engage in the metaverse with different identities. These Alts provide a kind of anonymity which can be used for illegal acts and behaviors. [3],[5], [7]

g) *Intellectual property rights protection*

It is challenging to guarantee intellectual property rights in the metaverse, where content is distributed and replicated through Web 3.0 and blockchain-based platforms. NFTs were presented as some technical solution, however, there may raise issues around the applicable law and jurisdictions. [3], [5].

h) *Sharing data for investigative purposes*

It is still vague how will the data on metaverse be shared for investigative purposes. Cross-border investigations involving metaverse must be safeguarded by international treaties balancing considerations of security and data protection and privacy.

i) *Digital sovereignty implications*

The metaverse poses extensive risks regarding digital sovereignty of countries; how countries will be exercising sovereignty of their lands and citizens in all meanings, will the avatars be citizens, how would the sovereignty over lands be exercised in the metaverse. The scene has also witnessed many governments introducing digital banks in the metaverse, how will they exercise sovereignty versus the real world, how will they

exercise sovereignty over their economies and currencies? Also it is unclear how countries will exercise sovereignty in terms of imposing taxes over citizens.

Some national values may be at risk as well, such as how freedom of expression and the protection of human rights and dignity may be guaranteed? Shall the metaverse get the world history back to some practices that the world bypassed throughout the years by regulations? The answers are still unclear. [10]

III. COUNTRIES' REACTIONS TOWARDS DATA PROTECTION IN THE METAVERSE

The Zuckerberg keynote presentation pushed many countries to act towards the metaverse. A handful of countries started introducing their own national metaverses, while others started drafting laws.

As an extension of the ideological and cultural trends in data protection, we can distinguish an American trend versus a European trend versus a Russian and Chinese trend. As it is the case with current data protection trends, the USA adopts a universal and global vision of the metaverse, while the EU launched the European Metaverse Initiative, supported by ideas such as the French aspirations of a European metaverse. The EU started setting the scene by introducing some regulations that would guarantee data protection and privacy in the metaverse, such as the Digital Services Act and the Digital Markets Act that came into force in November 2022. Both acts tackle content regulation and protection of users from online harm. This is in addition to the EU's Artificial Intelligence Act, which plays a critical role in regulating the identity of avatars and related content. Other European countries started to draft and amend regulations such as the French advertising authority which updated the guidelines to clarify the rules applicable to virtual universes. [11], [12],[13],[14],[15].

Russia has also announced the introduction of the Russian metaverse by 2025, in opposition to the American metaverse, which is considered as 'extremist' in the Russian view. The Russian metaverse is a national one and foreign metaverses will be limited by regulations. This is a very logical extension of the Russian trend in data protection [16]. Similarly, China introduced its first metaverse in November 2021 under state supervision. The city of Shanghai has already started introducing public services in the metaverse. [17]

South Korea Telecom operator SK has also introduced its own telecom metaverse and announced its extension to 49 countries [18], while the UAE introduced the first law of its kind 'Virtual Assets Law', as well as a separate virtual assets regulating entity and a metaverse strategy. [19]

In short, we can still see the struggle for dominance between western, Russian and Chinese

models of hegemony and geopolitical race, with different reactions toward data protection in the metaverse.

We're also witnessing some calls for studying the different legal aspects of the metaverse, and introducing separate regulations for the virtual worlds, as the University of Amsterdam suggested that 'Privacy of the virtual identity can neither be adequately protected by real-world privacy rights, nor by privacy enhancing technologies in the virtual platform. Therefore, the virtual right to privacy should be granted to avatars in respect of their bodily, locational, and informational privacy' [20].

IV. CONCLUSION

The metaverse carries inside it many opportunities, however, risks and concerns are very challenging and are expected to lead to revolutionary changes in behavioral, economic, social and data protection patterns. With respect to data protection challenges, and in light of the life cycle of data threat model, it can be concluded that the metaverse presents security threats with regard to almost all stages of the data life cycle. There are many challenges related to the data generation stage, such as the increase in the sources of data collection and the legal identity of avatars. Some other challenges are related to data transfer such as the issues of interoperability of the two worlds and how would the data be transferred. Other challenges relate to the usage stage, such as mass profiling threats and the proliferation of illegal and harmful content. There are also challenges related to the data sharing stage such as the questions posed about the legality of sharing data between the two worlds as well as the sharing of data for investigative purposes. The same goes for data storage, archival and destruction, where the metaverse concept poses many questions about those stages.

The metaverse concept poses many risks and threats to the data sovereignty of countries as a whole. Countries and the international community shall therefore act proactively before the actual introduction of the metaverse as portrayed in order to minimize the risks posed by the metaverse while getting the good of it.

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To my beloved mum...Grateful for your love and support.

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Considerations about the Object of Study of the Management

By Dr. C. Román Borgestorres, Dra. C. Yamileydis Martínez Torres
& Dr. C. Camilo Rodríguez Noriega

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Summary- Starting from arguing the dissent regarding the generalized tendency to recognize the organization as an object of study of direction or management and the inconvenience that such an epistemic inconsistency represents in the pertinent development of the specialized disciplinary paradigm of the referred area of knowledge, it is It raises the need to achieve greater objectivity in terms of clarification and precision of the matter.

In correspondence with what has been proposed and from a dialectical/materialist perspective, we proceed to the argumentative foundation of the role played in this respect by the dynamic management process/object process, as the genesis from which the management relationships emerge in their consequent expressions. and derivative manifestations.

Keywords: *management relations, management process, process object of management.*

GJHSS-H Classification: *FOR Code: 160899*



CONSIDERATIONS ABOUT THE OBJECT OF STUDY OF THE MANAGEMENT

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Considerations about the Object of Study of the Management

Consideraciones Acerca del Objeto de Estudio de la Dirección

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Resumen- A partir de argumentar el disenso en cuanto a la tendencia generalizada al reconocimiento de la organización como objeto de estudio de la dirección o management y el inconveniente que semejante inconsecuencia epistémica representa en el pertinente desarrollo del paradigma disciplinar especializado de la referida área del conocimiento, se plantea la necesidad de lograr una mayor objetividad en cuanto al esclarecimiento y precisión del asunto.

En correspondencia con lo planteado y desde una perspectiva dialéctico/materialista, se procede a la fundamentación argumentativa del papel que al respecto desempeña la dinámica proceso de dirección/proceso objeto de este, como génesis de la cual emergen las relaciones de dirección en sus consiguientes expresiones y manifestaciones derivativas.

Sobre la base de semejante presupuesto son connotadas las contradicciones dirigente/dirigido y mando/subordinación, cual referente esencial que sustenta la significación que dada su especificidad distintiva se otorga a las mencionadas interacciones, en concordancia con la racionalidad que caracteriza su devenir transicional evolutivo como relaciones: sociales, de producción y de dirección.

En consecuencia con ello las relaciones de dirección son cualificadas en condición de referente gnoseológico esencial para la pertinente estructuración del cuerpo teórico relativo al área gnoseológica objeto de análisis.

Palabras claves: relaciones de dirección, proceso de dirección, proceso objeto de dirección.

Summary- Starting from arguing the dissent regarding the generalized tendency to recognize the organization as an object of study of direction or management and the inconvenience that such an epistemic inconsistency represents in the pertinent development of the specialized disciplinary paradigm of the referred area of knowledge, it is raised the need to achieve greater objectivity in terms of clarification and precision of the matter.

In correspondence with what has been proposed and from a dialectical/materialist perspective, we proceed to the argumentative foundation of the role played in this respect by the dynamic management process/object process, as the genesis from which the management relationships emerge in their consequent expressions and derivative manifestations.

On the basis of such an assumption, the leader/directed and command/subordination contradictions are

connoted, as an essential reference that supports the significance that, given their distinctive specificity, is given to the aforementioned interactions, in accordance with the rationality that characterizes their evolutionary transicional becoming as relationships social, production and management.

As a consequence, the management relationships are qualified as essential epistemological reference for the pertinent structuring of the theoretical body relative to the epistemological area under analysis.

Keywords: management relations, management process, process object of management.

I. INTRODUCCIÓN

Las limitaciones en el desarrollo del paradigma disciplinar de la dirección constituyen una problemática denunciada tanto por autores que gozan de elevada ascendencia en este campo como son los casos de Drucker P. (1993), Konntz H. (1990), Chiavenato I. (2001); como por otros que no disfrutaron de igual reconocimiento y popularidad a pesar de la valía de sus apreciaciones e ideas: Ballina R. (2013), Muñoz R. (2011), Marín D. A. (2005 y 2012) y García G. (2005) por solo referenciar algunos.

La evolución epistemológica de la referida disciplina se ha visto lastrada por una serie de inconsistencias teórico/metodológicas provocadas por una tendencia esencialmente tecnocrática/empirista/positivista sustentada en la predominancia de un pragmatismo utilitarista que dado su desdén por la importancia de la sistematización en su condición de cualidad consubstancial a la ciencia, se constituye en antípoda suplantadora del rigor y objetividad por naturaleza inherentes a la misma.

Postura respecto a la cual Muñoz R. (2011:250) comenta que "mientras en otras disciplinas y ciencias el avance científico ha sido acumulativo, la administración, por el contrario, ha progresado bajo una dinámica sustitutiva, es decir, cada nuevo desarrollo descalifica los anteriores [...]".

Tales inconsecuencias se convierten en principales causales de las problemáticas esenciales presentes en la referida área del conocimiento, puestas de manifiesto en cuestiones como la insuficiente claridad y precisión respecto a la definición de aquellas cualidades específicas fundamentales que en condición de atributo signan su propio denominativo conceptual.

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Limitante que por demás imposibilita el cabal discernimiento en cuanto a la objetividad de la interpretación, explicación y manejo -ya sea bajo precepto sinonímico o diferenciante- de los diversos términos empleados para la identificación del aludido fenómeno de la realidad objetiva a saber: administración, dirección, gestión, gerencia, management; problemática denunciada por Hernández A. G. [et. al.] (2007:110).

Brecha epistémica que por consiguiente se refleja en la consecuente identificación y establecimiento de su correspondiente objeto de estudio, asunto acerca del cual aún persisten significativas discrepancias en cuanto a la pertinencia de la definición y reconocimiento universal del mismo, asunto sobre el cual advierte Marín D. A. (2013) al afirmar: “[...] la administración enfrenta un vacío epistémico debido a las concepciones retóricas que se han elaborado sobre su objeto [...]”.

El propósito del presente artículo es argumentar la pertinencia de asumir a las relaciones de dirección, como objeto de estudio de disciplina que se aborda como parte de su contenido, a la par de lograr un primer acercamiento a la conceptualización de este término y otros a fines, como parte de la conformación del lenguaje científico especializado de esta área del conocimiento.

II. MATERIALES Y MÉTODOS

Desde el punto de vista metodológico la elaboración del presente trabajo se sustentó de manera fundamental en la articulación integrada de: la profundización, análisis y valoración crítica del contenido de las principales obras que abordan la temática, la contrastación sistemática de la validez de semejantes postulados en la realidad del ejercicio de la práctica directiva cotidiana y el intercambio constante con diferentes sujetos directamente vinculados a la actividad de dirección, cual plataforma científico operativa que mediatizó el manejo de los métodos de investigación de nivel tanto teórico como empírico entre los cuales se connotan: el análisis-síntesis, la inducción/deducción, el histórico/lógico, el análisis documental, la entrevista y la observación científica.

Todo lo cual permitió sistematizar las ideas esenciales que se argumentan como parte del contenido de la presente obra.

III. RESULTADOS

El vacío epistémico originado por las inconsistencias científicas presentes en la definición y establecimiento del significado que como contenido cualifica a la categoría dirección dada su condición de fenómeno de la realidad objetiva -acerca del cual existe toda una multiplicidad de criterios conceptuales- y la consiguiente incidencia de ello en la delimitación de su

objeto de estudio, constituye una relación causal no siempre suficiente y adecuadamente considerada en el cuerpo argumental de la literatura especializada, donde prepondera la tendencia a la preocupación por la carencia del necesario reconocimiento universal respecto a este último, por encima de la necesaria estimación de las razones que lo provocan.

Problemática esta sobre la que profundiza García G. (2005:15-19) al realizar un análisis pormenorizado de diferentes posiciones autorales en cuanto a ello.

En este sentido resulta destacable el hecho de que el análisis de la evolución del paradigma disciplinar de la dirección generalmente es abordado desde la asunción acrítica del referente que constituyen las consideradas como supuestas “*escuelas, teorías o enfoques*” al respecto existentes, así como los postulados y contribuciones devenidos de las mismas, como consecuencia de lo cual se conciben criterios y análisis menguantes de la naturaleza científica de su génesis, cuando reductivamente se le pretende asignar una relación de hermandad simbiótica con la técnica -pasando entonces a formar parte de las “[...] denominadas *tecnociencias* [...]” Hernández J. (2006: 105)- y el arte.

La disquisición acerca del objeto de estudio de la dirección es abordada por diferentes autores destacándose en este caso el contenido de las producciones de García G. (2005), Marín D. A. (2005 y 2012) y Hernández A. G. y otros (2007) -sin que tal alusión referencial signifique desmérito de otros trabajos similares-.

El primero reseña que “*tres son los objetos de investigación en Administración, defendidos por escuelas distintas: el empresario, la teoría de la empresa, y la empresa en sí misma*”, en tanto los dos restantes coinciden en reconocer como tal a: “1) *la organización gestionada*, 2) *el individuo gestor*, 3) *el proceso de gestionar*, y 4) *la concomitancia de los tres anteriores*: “la organización gestionada, el individuo gestor, el proceso de gestionar y la concomitancia de los tres anteriores.”

Es oportuno entonces advertir la inconsecuencia científica de confundir o equiparar la trascendencia significativa que dada su consubstancialidad atañe al objeto de estudio concerniente a determinada disciplina científica, con el objeto de atención o de interés de determinadas escuelas o enfoques y de los autores que se adscriben o enmarcan encada una de estas, como habitualmente sucede en el caso de la dirección.

En consideración de los autores del presente trabajo propender al reconocimiento de una multiplicidad de objetos de estudio de la dirección - “*la teoría de la empresa*” y los 4 a su vez planteados por Marín D. A. y Hernández A. G. y otros- desacredita

la pretendida condición de disciplina científica de la misma, poniendo en riesgo la identidad que como atributo de igual cualidad la debe caracterizar.

En tanto compartir la tendencia a la magnificación superlativa de la "organización" otorgándole semejante trascendencia respecto a la esencia significativa del área cognitiva en cuestión -según propugna un número no desdeñable de autores-, significa la admisión superflua de un ejercicio pseudocientífico tautológico de polisemia terminológica, en detrimento del desarrollo de su propio vocabulario discursivo especializado, cuestión que aborda Santamaría I. (2007) al referir el imprescindible proceso de "terminologización" inherente al desarrollo del lenguaje de la ciencia.

Lo cual de manera adicional favorece una comprensión difusa en cuanto al alcance del referido término, por demás empleado de manera indistinta para designar una de las funciones generales universalmente reconocidas como parte de la labor directiva.

La asunción de la "organización" en calidad de objeto de estudio de la dirección plantea el dilema acerca de la definición diferenciada de semejante término en los marcos del cuerpo teórico de esta disciplina científica, vacío aludido por Drucker P. (1993) -referenciado por García G. (2005:18)- cuando declara " [...] sólo la aparición de la gestión después de la Segunda Guerra Mundial nos ha hecho ver que la organización es algo separado y distinto; no es ni sociedad ni clase ni familia, esos integradores modernos que conocen los estudiosos sociales; [...] la organización es algo diferente [...]", reafirmando la ya planteada incógnita en cuanto a la significación, extensión y cualidades o rasgos esenciales que al respecto la han de caracterizar distintivamente.

Como parte de la necesaria e imprescindible aproximación diferenciada a la identificación del objeto de estudio de la dirección, se ponderan las elucubraciones de Marín D. A. (2005:47) quien al abordar el asunto presupone la incidencia de "dos vertientes que se conmutan entre sí: la teoría administrativa y la teoría organizacional.

La primera, enfatizando en el hombre y su comportamiento como gestor y gestionado, acopia los aportes que han intentado explicar el fenómeno administrativo desde lo estructural/funcional, mediante aproximaciones de tipo mecanicistas y normativas; y la segunda, enfatizando en la estructura y el proceso, fundamenta las ideas en torno al carácter conductual de los individuos en las relaciones dirigente/dirigido, mediante aproximaciones psicológicas, sociológicas y políticas. Ambas teorías, a manera de eventos autológicos", se necesitan a sí mismos para existir.

Tendencias cuyas manifestaciones se ilustran -entre otras tantas que de manera similar pudieran ser relacionadas- en las siguientes citas referenciales:

- "Los administradores tiene la responsabilidad de realizar acciones que permitan que las personas hagan sus mejores aportaciones a los objetivos del grupo." Konntz H. y Weihrich H. (1990:5),
- "[...] hay un sujeto (y un contexto) que administra y [...] otro sujeto que es administrado (el objeto de la Administración) [...]". Gil J. M. (2005:7)
- "[...] el estudio de las interacciones humanas entre individuos y grupos con las estructuras tecno/económicas, funcionales y de autoridad, en las que están dispuestos de manera previamente determinada para alcanzar fines concretos". Robb (1985)
- referenciado por García G. (2005:18)-
- "Las habilidades administrativas [...] están asociadas de forma inherente a la interacción con otros individuos -frecuentemente impredecibles-." Whetten D. A. y Cameron K. S. (2011:13)
- "[...] el elemento que configura el fenómeno administrativo es una actividad humana específica que genera o desencadena otros procesos de actividad también humana." Ramírez C. (2013:79)
- "[...] los procesos mediante los cuales se conduce a la gente en la organización hacia los fines institucionales". Mendoza J. M. (2018:215)

La mancomunidad entre las señaladas tendencias corrobora la cabal y plena comprensión en cuanto a la consubstancialidad del carácter sistémico e integral de la dirección -abordado por Borges R. y Rizo I. (2019)- como condición de partida para la pertinente identificación y establecimiento de su correspondiente objeto de estudio.

De manera complementaria a los argumentos expuestos es menester aclarar que el logro de la necesaria objetividad en cuanto a la interpretación y explicación de la dirección únicamente resulta posible estimando la imposibilidad de su existencia en sí misma al margen de la indisoluble dialéctica que de manera ineluctable mantiene con el proceso al cual se encuentra encargada de dinamizar intencionalmente -nótese la concordancia esencial con lo planteado por Ramírez C. (2013)-, el que a su vez ejerce una acción condicionante sobre la misma.

Premisa cuya omisión deriva en la paradoja de suponer la existencia de dirigentes sin dirigidos y viceversa, o de ambos sin que medie una actividad social específica justificante de su reciproca interacción, condición anticipada por Marx C. (1962: 286) cuando plantea "todo trabajo directamente social o colectivo en gran escala requiere en mayor o menor medida una dirección [...]".

Incongruencia sobre la cual de alguna manera advierte Gil J. M. (2005:7) en su consideración acerca de que "[...] el hecho de administrar se presenta como algo fuera del sujeto administrador, aunque propio de él y de su contexto [...]".

El reconocimiento de la identidad y respectiva dinámica relacional entre los procesos antes referidos constituye una de las dos tesis que esbozan Polo L. y Llano C. (1997) cuando prescriben: “[...] la distinción de la actividad directiva y de la actividad productiva es teóricamente correcta, e indica además una necesidad práctica [...]”.

Enfoque que deviene en premisa indispensable para, sobre la base de la perspectiva dialéctico/materialista, acceder a una manera cualitativamente diferente de interpretar y explicar el señalado fenómeno en su condición de actividad social, como parte de la cual se devela el carácter primordial de la permanente e irrestricta interacción existente entre el proceso de dirección y el proceso objeto del mismo, dinámica implícita de alguna manera en las ya aludidas expresiones de Gil J. M. (2005), Ramírez C. (2013) y Mendoza J. M. (2018), matizada por las particularidades inherentes a cada uno de estos, así como del contexto en que esta tiene lugar.

Dialéctica que en su consecuente desenvolvimiento transita por el sucesivo despliegue de todas aquellas manifestaciones análogas en que pueden tener lugar las múltiples y disímiles disfunciones -en determinado momento y por alguna razón existentes- entre las respectivas lógicas y tecnologías inherentes a cada uno de los procesos en ella concurrentes; así como cualquier otra que se encuentre consecuentemente mediada por la contradicción mando/subordinación.

Evidencias sintomáticas facto perceptuales que tienen su expresión generalizada en la interacción dirigentes/dirigidos, abordada con profundidad y detalle por García J. P. (2007)-; génesis raigal de la cual dimanen las relaciones de dirección en su condición de síntesis objetiva y contenido específico del fenómeno objeto de abordaje.

Es así como el análisis profundo y minucioso de la evolución histórico/gnoseológica de esta disciplina permite desentrañar suficientes trazas demostrativas de que las relaciones de dirección constituyen elemento cardinal subyacente en los postulados, preceptos e ideas emanantes del pretendido desarrollo de las diversas “*escuelas, teorías o enfoques*” por las que el mismo ha transitado, esencialidad cuya omisión constituye una regularidad con independencia de las razones justificantes de ello.

Se infiere por tanto que las relaciones de dirección emergen de la correspondiente dinámica derivativa históricamente justificada por la que desde un plano general a uno de mayor especificidad tiene lugar la dialéctica presente entre las relaciones sociales y las de producción; significándose por tanto como un caso particular de estas, imposible por su singularidad identitaria de ser fundamentado desde perspectivas centradas en referentes de carácter: sociológico, económico, tecnológico o de cualquier otra índole que

omitan la objetividad fenoménica integral de la contradicción dirigente/dirigido.

Posición que en esencia comparten y corroboran Martínez C., Castellano J. R. y Hernández V. (2019:182) al considerar que la administración “estudia las distintas formas que se manifiestan las relaciones recíprocas entre dirigentes y dirigidos [...]”.

Llegado este momento resulta oportuno plantear la consideración de los autores acerca de un acercamiento primario al significado que desde el lenguaje disciplinario especializado ha de otorgársele a la categoría relaciones de dirección, entendida como todas aquellas interacciones personales individuales y/o colectivas que intencionalmente mediadas por la contradicción mando/subordinación, tienen lugar dentro y/o fuera de la entidad organizativa con el propósito de posibilitar la materialización efectiva de la dialéctica proceso de dirección/proceso objeto de este en el marco contextual -interno y externo- donde las mismas se han de llevar a cabo. Sobre la base de los argumentos expuestos se colige que desde el punto de vista cualitativo las relaciones de dirección disponen de un rasgo distintivo fundamental que las caracteriza, el cual se encuentra íntimamente asociado a la intencionalidad que deviene del propósito o fin que en razón de la génesis existencial de cada una de ellas, justifica su necesario e imprescindible establecimiento. Atributo que dimana del carácter condicionante respecto a estas ejercido por el proceso objeto de dirección como resultado de su dialéctica simbiótica con el proceso de dirección.

Presupuesto que deviene en requerimiento insoslayable para el logro del efecto dinamizador aspirado como consecuencia de la efectiva materialización de las mismas. Tales razonamientos, sustentan el razonamiento de que aún y cuando la concreción efectiva de las relaciones de dirección dada la especificidad que las autentifica; se encuentra transversalizada por la contradicción mando/subordinación, resulta incongruente circunscribir reductivamente su extensión conceptual a semejante perspectiva unidireccional.

Juicio apreciativo esclarecedor de la connotación que adquiere la categoría participación en su condición de agente modulador de las mismas, dada la confluencia simultánea de su correspondiente materialización en las trayectorias dirigente/dirigido y viceversa, dinámica como parte de la cual encuentran la capacidad necesaria y suficiente para desplegar extensivamente la intencionalidad que les caracteriza dentro de los marcos jurisdiccionales concernientes al nivel de dirección en el cual se originan y desarrollan, garantizando con ello la pertinente interacción de este con su correspondiente entorno: cercano y lejano.

IV. DISCUSIÓN

La identificación y establecimiento desde el punto de vista terminológico conceptual del rasgo esencial identitario y la correspondiente extensión de la categoría relaciones de dirección, pone en evidencia la autenticidad cualitativa que las diferencia de cualquier otro tipo de interacción entre personas o grupo de estas.

De esta manera resulta posible prevenir la falta de la debida distinción respecto aquellos otros tipos de relaciones -sociales y de producción- que según se precisó por razones histórico/lógicas guardan determinados nexos de familiaridad con estas; así como la propensión expresa en el contenido de la literatura especializada a yuxtaponer, sin disponer de argumentos científicos suficientemente sólidos, el objeto de estudio de la dirección -según sucede cuando como tal se estima la "organización"- al de otra ciencia a fin como es la Sociología.

El allanamiento de semejante brecha epistémica induce la solución de otras carencias cardinales -igualmente asociadas al insuficiente proceso de terminologización científica-subyacentes en la estructuración del paradigma disciplinar relativo al área del conocimiento en cuestión, como es el caso de la tendencia anacrónica al empleo en su acepción común de los vocablos "problema" y "decisiones" para designar sustitutivamente y mediante presunta homologación significativa, cuestiones específicamente concernientes al fenómeno directivo; comportamiento que menoscaba el rigor inherente al adecuado manejo del lenguaje especializado de las ciencias.

Temas estos que dada la complejidad y particularidad identitaria proveniente de su génesis directiva, desde su perspectiva especializada adquieren un contenido cualitativamente diferente que ha de quedar expresado de manera consecuente, mediante la oportuna declaración del calificativo que por naturaleza y oficio les debe acompañar distintivamente: problema de dirección y decisión de dirección.

El estudio y análisis sistemático de la praxis directiva en su condición de realidad objetiva evidencia que el problema de dirección en su contenido y consecuente formulación expresa las incongruencias presentes en el desempeño directivo como resultado del manejo desacertado de los métodos y técnicas de dirección durante la ejecución de los procedimientos y funciones directivas inherentes a las facultades, atribuciones o prerrogativas que se ostentan.

Esencia imposible de ser trivialmente suplantada o confundida con aquellas manifestaciones facto/perceptuales que como consecuencia de su causalidad son externamente apreciables.

En tanto el término decisiones de dirección compele la elección y adopción a partir de las facultades, atribuciones o prerrogativas de que se

disponen de un determinado modo de actuación con carácter preventivo y/o correctivo -según sea el caso- para el cumplimiento efectivo y pertinente de las funciones generales y/o específicas concernientes al cargo que se desempeña, en correspondencia con las condiciones y circunstancias en que ello tiene lugar.

Es oportuno consignar entonces la dialéctica del par categorial problema de dirección/decisiones de dirección como parte de la cual el primero tiene su manifestación fáctica más externa -efectos- en aquellas dimensiones o indicadores de carácter jurídico/legal, sicológico, sociológico, político, económico, laboral, ético/moral, histórico/cultural, ambiental o de cualquier otra índole que inciden por defecto o exceso en el adecuado desarrollo del proceso objeto de dirección.

En razón de lo cual resulta improcedente desestimar que el mismo se encuentra intrínsecamente vinculado a la falta de pertinencia y efectividad de las relaciones de dirección y/o de la forma en la cual se concibe el cabal encauzamiento y materialización de las mismas, por cuanto constituye consecuencia directa de ello.

En tanto las decisiones de dirección se encuentran cardinalmente enfocadas a la solución del problema de dirección, mediante el consecuente y pertinente perfeccionamiento del diseño, potenciación y encauzamiento del desarrollo efectivo de las relaciones de dirección, bajo la consiguiente perspectiva integral/contextualizada que las debe caracterizar.

La consideración de las relaciones de dirección en calidad de objeto de estudio de la dirección posibilita entender y poder discernir con mayor claridad el estatus y significación que en razón de la ontogenia cognitiva de esta disciplina científica han de adquirir declinaciones terminológicas proverbialmente referidas en el contenido de la literatura especializada como liderazgo, estimulación, motivación, negociación, entre otras posibles de ser mencionadas.

Los argumentos expuestos justifican plenamente la idea de Hernández J. (2006:105) cuando asevera "*se enriquece así y se vuelve más complejo aun el objeto de estudio de la Administración [...]*".

V. CONCLUSIONES

Se reafirma la necesidad impostergable de la pertinente concreción y esclarecimiento del objeto de estudio de la dirección, eliminando para ello el desarraigo científico manifiesto en aquellas aportaciones que de manera preferencial se inclinan por aprovechar la vertiente mercantilista de los diversos asuntos vinculados al desarrollo de los contenidos asociados a esta disciplina, en detrimento del rigor y objetividad inherente a la naturaleza de estos.

En este sentido el estudio de profundización acerca de la ontogenia cognitiva de la dirección reveló la manera en que las relaciones de dirección al emerger

de la imprescindible dialéctica que tiene lugar entre el proceso de dirección y el proceso objeto del mismo en un determinado marco contextual, se connotan como síntesis de la materialización objetiva/fenomenica del primero de ellos, aportando en consecuencia el pertinente fundamento referencial para la construcción y sistemático enriquecimiento del paradigma disciplinar especializado de la referida área del conocimiento; reforzando así sus potencialidades para ser reconocida en condición de objeto de estudio de la misma, llenando con ello el vacío epistémico actualmente existente al respecto.

Igualmente es oportuno reconocer la valía de los juicios y aportaciones devenidas de fuentes autorales que aún sin gozar del reconocimiento de aquellas otras con mayor ascendencia mediática internacional, logran significativas contribuciones al desarrollo del paradigma disciplinar de la dirección, las cuales a pesar de la consideración que merecen no siempre son suficientemente tomadas en cuenta.

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Global Health Issues with Conflict Escalation among Pandemic, Climate, and Economic Crises

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Abstract- Religion, governance, and politics—as well as related topics such as human rights, justice, and so on—have historically caused many of the world's most significant conflicts, and they continue to do so because these issues are often the most fundamental in the structure of a society. To gain a military advantage, parties to armed conflicts have polluted water, burned crops, cut down forests, poisoned soils, and killed animals over the years. A variety of context factors, particularly socioeconomic conditions, governance, and political factors, interact and play a key role in translating climate change into conflict risks. The present unrest all over the world risks putting more than half of the countries into a crisis of health, economy, and social safety, which is the biggest threat to human civilization. The security and safety of healthcare facilities, workers, and supply lines remain paramount concerns along with access to health services, technology, and innovation.

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GJHSS-H Classification: FOR Code: 149999



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Abstract- Religion, governance, and politics—as well as related topics such as human rights, justice, and so on—have historically caused many of the world's most significant conflicts, and they continue to do so because these issues are often the most fundamental in the structure of a society. To gain a military advantage, parties to armed conflicts have polluted water, burned crops, cut down forests, poisoned soils, and killed animals over the years. A variety of context factors, particularly socioeconomic conditions, governance, and political factors, interact and play a key role in translating

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Figure 1: The modern world is plagued by major issues.

1. INTRODUCTION

Global health has grown in popularity as a concept and academic discipline in recent years. The COVID-19 conference emphasized the world's interconnectedness and how public health threats are no longer the sole concern of single nation-states, regions, or discrete sectors. War and conflict

among pandemic and climate change, have resulted in a humanitarian crisis affecting millions of people worldwide. A joint study by WHO and World Bank says that, healthcare cost pushed more than 500 million people to extreme poverty just before Covid-19 outbreak and the pandemic made the situation even worse (Figure 2)[1]. Already 25% of the world population lack access to essential medicines [2] and 50% of them deprived of essential health services, according to WHO (Figure 2)[3]. The planet earth is probably seeing its worst days after civilization has started as climate [4]

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and economic crisis [5], along with global conflicts [6] are reaching their top. When viewed from the perspective of humanity, wars and invasions are always disastrous for both combatants and war victims—especially women, the injured, children of all ages, the

elderly, the functionally disabled, and the refugees. The present study aims to bring and correlate effects of pandemic, conflict and climate issues over world economy and interconnect them with victims and future public health (Figure 1).



Figure 2: Even before the pandemic, the global health and economy were not in good shape.

II. OBJECTIVE OF THE STUDY AND SOCIAL IMPLICATION

Several platforms have discussed the global health impacts of climate change, economic crisis, pandemics, and humanitarian crises, but they have been found to be inadequate because they rarely brought out the overall global situation. The current study's goal is to cover them all and bring them together on a single platform through a descriptive review. Students, journalists, healthcare providers, and even the mediocre can boost their knowledge, and of course, economists and policymakers may get a direction for future projections and strategic tools to get rid of this unique condition.

III. METHODOLOGY

Relevant papers were extensively reviewed, mostly from online resources focusing on climate, conflict, and pandemic issues over public health. Many articles, press releases, and media broadcasts have

covered the present global conflicts among pandemics and climate changes. Since journal publications lag behind many updates, popular online news platforms such as Financial Times, Washington Post, The Wall Street Journal, The Guardian, The Daily Star, BBC, CNN, CNBC, New York Times, Business Standard, Bloomberg, Washington Post, Forbes and Reuters were carefully added to the keywords "global warming and public health," "war and conflicts among climate crises," and "war and conflicts among pandemics" during online search. War, conflicts, the world economy, war-weary economies with their concurrent health issues, pandemic and climate related economic losses, and changes in health system access during war and pandemic were studied. Therefore, news from online portals was carefully judged, and statistical data were correlated with journal articles, where possible. Daily reports of aggression and violence were omitted, along with complex mathematical analysis and data projections, to keep this review more understandable to common readers. Media propaganda is common

among conflict situations. Strenuous efforts have been made to correlate pandemic, climate, economic, and conflict issues with public health. PubMed, ALTAVISTA, Embase, Scopus, Web of Science, and the Cochrane Central Registers were prioritized to collect public health issues. Journals from Elsevier, Springer, Willey Online Library, and Wolters Kluwer were extensively searched.

IV. A BRIEF REVIEW OF PRESENT GLOBAL SITUATION

a) *Climate Issues over Public Health*

About 7.6 billion people—or 96% of humanity have experienced a global warming effect on temperature in the past 12 months. The World Bank says, more than 1 billion people could be displaced globally by 2050 due to climate change and natural disasters (Figure 3)[7]. And more than five million extra deaths a year can be attributed to the disease burden associated with climate change, which is at least 30 times higher compared to 20 years ago (Figure 3)[8]. In those years, the lion's share (more than 96%) of disaster-related deaths had taken place mainly in developing countries[9], which has greatly shifted across 19 countries in North America, Europe, and the Asia-Pacific region that label global climate change as a major threat[10]. Global warming is influencing weather patterns, causing heat waves, heavy rainfall, droughts, cyclones, and wildfires [11]. According to the Centre for

Research on the Epidemiology of Disasters, Brussels (CRED), floods, storms, and draughts caused losses to the global economy of more than \$224 billion in 2021 and could cost \$5.6 trillion by 2050 (Figure 3) [12]. Less than 3% of the earth's water is fresh water that can be used for daily necessities or agricultural use, and less than half of it can be used for drinking [13, 14]. Disastrous shrinking of rivers has been reported in the US, Europe, Asia, and the Middle East[15-18], while nearly a quarter of the world's population is at risk of flooding—10 times more rain in Sindh province [19] and 10 times faster melting of Himalayan glaciers are reported by the European Space Agency and Scientific Reports journal respectively [20]. Temperature extremes can deteriorate chronic illnesses like malnutrition [21], auto-immune diseases like arthritis [22] and diabetes [23], cardio-respiratory symptoms[24], certain cancer types[25, 26], as well as spread contagious diseases like mosquito-borne illnesses, COVID-19 [27], and fungal or bacterial infections[28, 29]. For instance, a 1-degree Celsius increase in global temperature may result in more than 100,000 new cases of diabetes each year in the USA alone [30] and six times more premature deaths among respiratory patients compared to the general population (Figure 3) [31]. Also, occupational heat-related mortality is 35 times higher among agricultural workers compared to workers from other industries (Figure 3) [32].

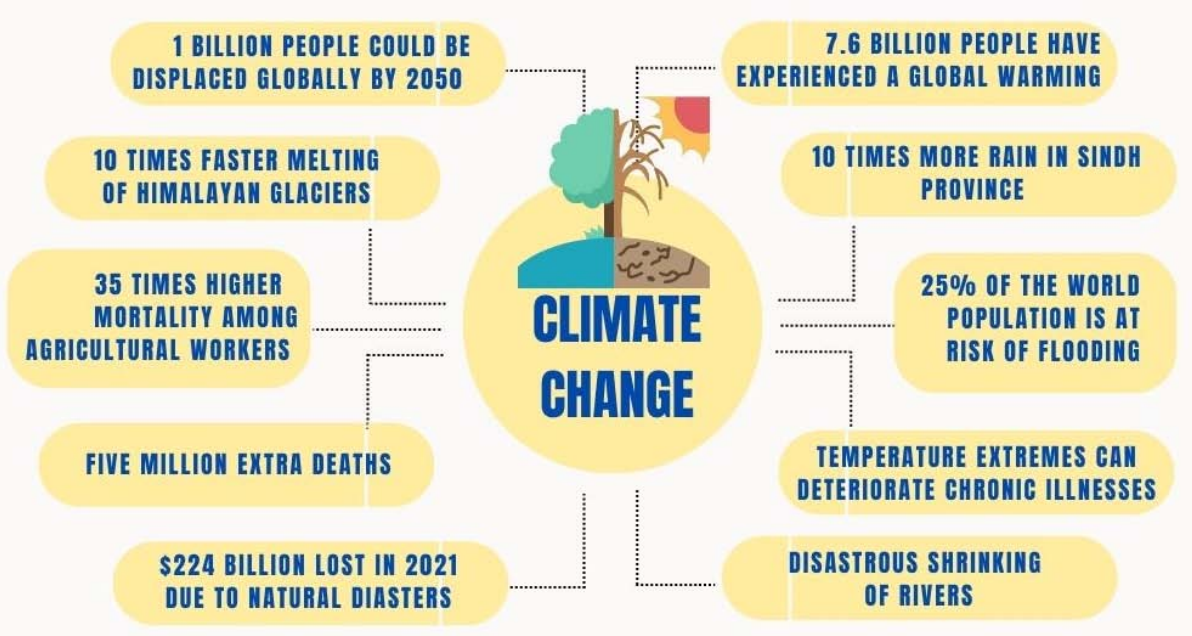


Figure 3: The present climate issues are of great concern.

b) *The Global Economy and Public Health are Being Impacted by a Pandemic*

The US government issued a new alert in May 2022 stating that the upcoming fall and winter could potentially see 100 million Covid-19 infections in the US

[33]. According to Worldometer data, during the course of the manuscript's writing, globally more than 655 million people were already affected, and 66 million had already died, as of December 14, 2022(Figure 2). As the world becomes more interconnected, the economic

impacts of the COVID-19 pandemic become more serious. Because of its negative economic implications, the pandemic may also spark and intensify armed conflict [34-36], or at least worsen already precarious situations by escalating grievances, increasing mistrust, discrimination, and perceptions of injustice among vulnerable population in war or conflict zones [37-42]. However, fuel crisis induced by Russian aggression in Ukraine, supply chain disruptions, climate disaster, and the continued economic fallout of the COVID-19 pandemic are pushing approximately 345 million people around the globe into food insecurity [43]. "Hunger leads to one death every four seconds"—more than 200 NGOs from 75 countries were calling on global statesmen gathering at the 77th UN General Assembly to take decisive action [44]. According to the UN, a record \$51.5 billion is required in 2023 to assist 230 million of the world's most vulnerable people in nearly 70 countries (Figure 4) [45]. Already, the cost of

illiteracy to the global economy has exceeded \$1 trillion, and UNESCO estimates that close to 900 million learners have been affected by the closure of educational institutions, and 100 million children would fall below the minimum reading proficiency level (Figure 4) [46]. Globally, 3.3 billion people, which constitutes 81% of the world's workforce, were affected by the lockdown, and the world incurred a loss of 9% of global working hours, followed by 4.4% of the global GDP in lost labor incomes [47]. Economically and socially disadvantaged populations were twice as likely to present with COVID-19 symptoms to the emergency department and were more likely to require re-hospitalization within 30 days of discharge [48]. During the pandemic, child marriage, gender-based or domestic violence increased; routine health services were jeopardized; and routine vaccinations were halted for 80 million children in 70 countries (Figure 4) [49].

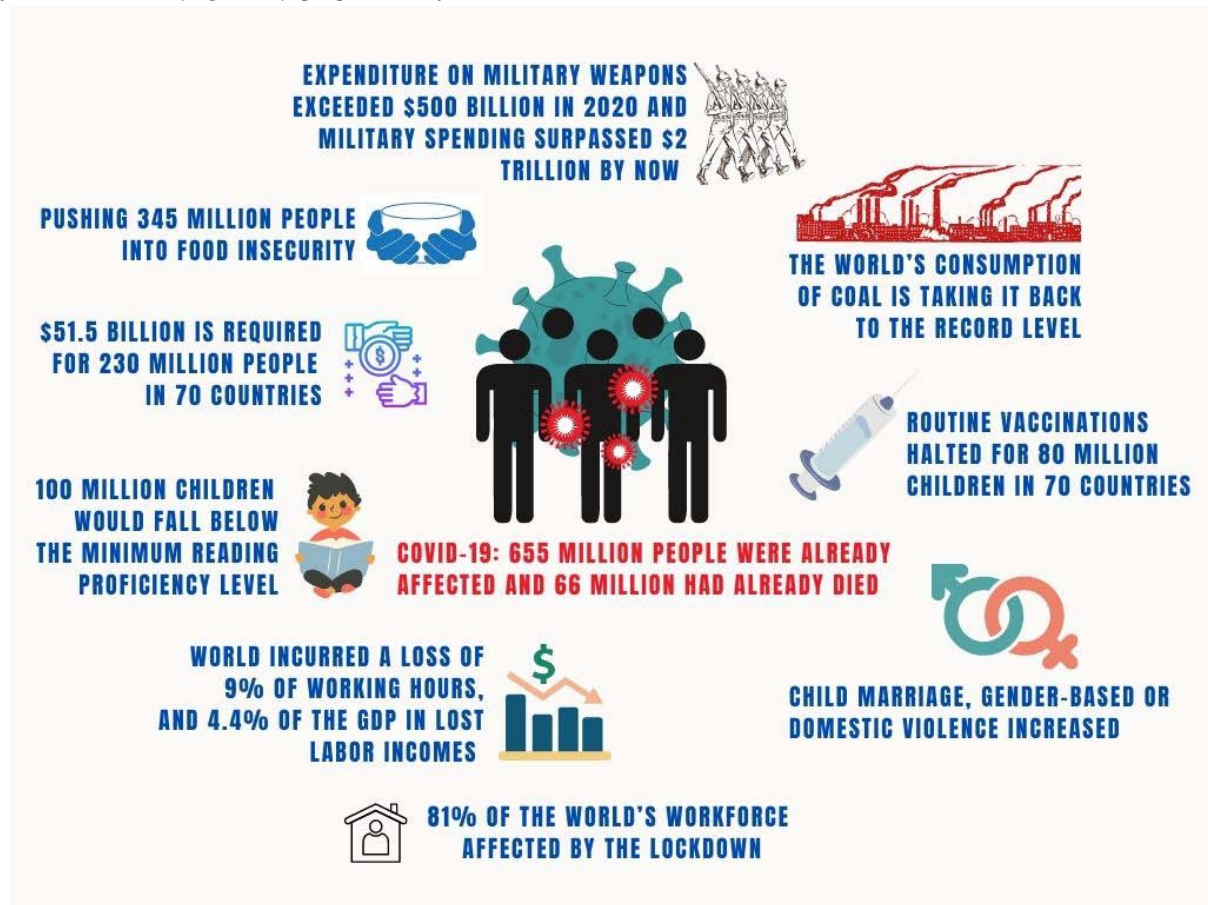


Figure 4: The pandemic pushed the world into a deep mess.

c) Man-Made Catastrophes

Major oil companies don't disclose the huge amount of greenhouse gases their oil fields emit—BP, Eni, ExxonMobil, Chevron, and Shell emit millions of tons of gas from their oil fields [50]. According to the World Wildlife Fund (WWF), as a result of deforestation and ocean pollution, the world's wildlife populations

have decreased by more than two-thirds since 1970 [51]. Man-made catastrophes like mountain destruction, deforestation, and pollution not only hamper food, fuel, and habitat but also cause the spread of acute infections [52, 53], chronic conditions [54] and communicable diseases [55]. For example, cardiovascular disease accounts for more than 60% of

pollution-related disease and death [56]; each kilometer square of Brazilian Amazon deforestation results in 27 new malaria cases [57]. This is particularly important as, from California to Germany and China, droughts have shrunk the rivers that drive huge hydroelectric plants [58]. As global energy supplies tightened last year, India [59], China [60], Australia [61], and many European Union countries [62] increased their reliance on coal-fired power—along with the Russia-Ukraine conflict (Figure 4). The world's consumption of coal is taking it back to the record level it reached nearly a decade ago, says an International Energy Agency press release [63]. In its recent publication, *Nature Food* journal is saying “We estimate more than 2 billion people could die from nuclear war between India and Pakistan, and more than 5 billion could die from a war between the United States and Russia—underlining the importance of global cooperation in preventing nuclear war” [6].

d) *Present Global Economic Crisis: Fact is Stranger Than Fiction*

Three largest economies in the world—namely, the US, Eurozone, and China—are facing impediments due to higher than expected inflation or lockdown [64]. For example, the UK economy is being battered by rising energy costs, rising interest rates, tax increases, and Brexit [65]. Global central banks continued raising interest rates following Federal Bank of America to prevent inflation, at the fastest pace in decades but failed, so far [64-69]. Inflation hits 40 years high in the US, UK [70-72], Japan [73], Germany [74]; 37 years high in France [75] and Italy [76]; 20 years high in Russia [77] and Turkey [78], mostly due to fuel crunch, food crisis, currency devaluation and business confidence nosedive over panic. China's factory inflation hits 25% in 2021 [79], economy is slowing down due to adoption of “Zero-Covid strategy” [80, 81], amid a risk of 1 million deaths in “winter wave” [82]. Eurozone inflation averaged 2.12% from 1991 until 2022, climbed closed to 11% in October, 2022 [83, 84]. Nearly half of the countries of the EU, 40% of the countries of Africa, and 30% of the countries of Asia declared bankruptcy during the previous two centuries [85, 86]. However, according to a UN official at the November 2022 climate change conference, COP27, held in Egypt, 54 countries with the poorest development are currently in danger of bankruptcy (Figure 5) [87]. Lebanon, Sri Lanka, Russia, Suriname and Zambia are already in a debt default [88]. In addition to increased employer's healthcare insurance cost [89], currency devaluation [90], a reduced labor force or lack of skilled labor [91], fuel-power crisis [92], and the transportation freight cost [93-95] has hit the supply and demand chain massively and caused trouble for manufacturers, who have undergone layoffs or delayed their economic activities to prevent more loss.

e) *Global Conflicts over Health Economics: Adding Insult to Grave Injury*

Conflict was responsible for more than 10 million deaths of children under the age of five between 1995 and 2015 worldwide [96]. From 2021 to 2022, more than 100 million people will have been driven from their homes by war, violence, persecution, and human rights abuse, according to the UN refugee agency (UNHCR) [97]. Ukraine, Afghanistan, the Democratic Republic of the Congo, Ethiopia, Sudan, the Syrian Arab Republic, and Yemen are the countries with the highest numbers of internally displaced persons [96, 98]. Since 2017, more than one in every six children lived in a conflict zone around the world (were living less than 50 km from where the actual fighting took place [99, 100]; highest number of women and children living in conflict zone has been twice since 2000 [96]. Armed conflict, in its various forms and manifestations, is prevalent throughout the world and often results in forced migration, an energy crisis, capital flight, and the destruction of societies' infrastructure, which includes a lack of access to food, health care, housing, employment, clean water, and sanitation, as well as a loss of community and homes. And the resulting stress or unrest has been shown to drive violent extremism, fostering recurring cycles of conflict. Global expenditure on military weapons exceeded \$500 billion in 2020 and military spending surpassed \$2 trillion by now (Figure 4) [101]. After seeing 50-100 million deaths in 1918-1919 Flu pandemic and more than 34 million deaths in World War II, the incorrigible world is thirsty for another great war in the midst of Covid-19 pandemic [102-106]. Whoever wins the war, humanity loses.

[1] *Russian Aggression against Ukraine*

The present cold winter distress in Europe and the power-fuel crisis, price volatility, inflationary pressure, and recession around the globe are a consequence of this war. The GDP of Ukraine could decrease by up to 35 to 40% if the war lasts longer [107]. As of August 4, 2022, more than 7 million people remain, and around 10 million refugee movements have been recorded out of Ukraine (Figure 5), making this the fastest-growing refugee crisis since World War II [108]. Over 90% of the fleeing population were women and children, including unaccompanied minors. Children account for 40% of the refugee population (Figure 5). Hundreds of thousands of people are still trapped and faced with a shortage of food, water, and medicines [109]. Depression, social withdrawal, and anxiety are just a few of the long-term psychological and physical health repercussions that will afflict subsequent civilizations [110]. In Ukraine, close to 3 million people with disabilities are registered, facing a greater risk of abandonment, violence, and death, while their access to safety and recovery support is limited (Figure 5) [111, 112]. The correlation between low vaccination and

Russian aggression is still a question, as Ukraine was the second lowest (15%) vaccinated country after Armenia in Europe until the end of October, 2021 [113]. With a population of 42 million people, Ukraine has reported more than 10% cases of COVID-19 and over 0.1 million deaths from March 2020 through February 2022 [114]. Among deaths from COVID-19, close to 60% were teenagers aged 10–19 years, and more than 40% were children aged 0–9 years [115]. However, the number of vaccinated people in Ukraine will not surpass 40% until June 2022. It has one of the lowest rates of vaccination among middle-income countries [116, 117]. Ukraine has among the highest global burdens of non-communicable diseases and chronic infectious diseases, such as drug resistant tuberculosis, measles, HIV/AIDS, and hepatitis B, and C [118]. The age-adjusted death rate in Ukraine from ischemic heart disease is more than six times greater than that in European Union countries, and it has among the highest suicide rates in the world [119]. Linguistic problems during hospitalization, including lack of continuity of medical care and lack of retained medical records, have been reported among refugees in Poland, Romania,

Moldova, and Slovakia [120, 121]. Thousands of tons of sulfur dioxide and smoke poisoned the air, driving up respiratory illnesses, damaging crops, and causing four times more deaths per capita than the five cleanest countries altogether [122]. Moreover, most of the energy used for agricultural production, including fuels, electricity, fertilizers, pesticides, and lubricants, is reallocated for military use [123]. The occupiers have so far attacked more than 800 health care facilities; at least hundreds of them were completely damaged (Figure 7) [124]. At least three major oxygen plants in Ukraine have been damaged, making treatment uncertain for approximately 2,000 people requiring high oxygen flow (Figure 7) [125]. Until the 1st week of December 2022, a quarter of its population was facing power shortages and blackouts amid strong winds, rain, and sub-zero temperatures, along with half of its capital Kyiv, for days [126–128]. Europe is facing a new challenge that could lead to a new wave of COVID-19 and an increase in the number of cases of TB, polio, parasitic stomach disorders, and HIV from the Ukrainian refugees; the EU is already home to 12.5% of HIV patients, according to the WHO [129, 130].



Figure 5: The Ukraine's aggression is making an impact elsewhere, too.

[2] China's Multiple Disputes including Trade War

China's growing control over one-third of the world's shipping lanes in the South China Sea poses an imminent threat to the US and Europe [131]. In the past, China has frequently been involved in border disputes with its neighbors. Southeast Asian countries such as China, Vietnam, the Philippines, Brunei, Malaysia, and Taiwan have disagreements about the disputed South China Sea [132].

U.S. goods and services trade with China will total an estimated \$615.2 billion in 2020[133]. Amid an economic slowdown, China's four-year 'trade war' with the US has resulted in a total loss of USD 550 billion in import tariffs, the majority of which are aimed at Beijing [134]. China's vaccine diplomacy is believed to be based on the country's holistic approach to national security, as well as the importance China places on the "Belt and Road" Initiative [135]. China is a major manufacturer of medical products, including many vaccines, drugs, medical devices, and diagnostics. India and China are the two most important players in the global pharmaceutical raw materials and excipients market. And China accounted for 28% of the \$236.7 billion global API market in 2018 [136]. Close to 40% of antibiotic APIs used in the US are sourced from China, where they are typically 35%–40% less expensive than competitors [137].

In present years, China has increased economic, military, and political competition with the US, as depicted in numerous official documents and statements [138]. The trade war and escalating tariffs could raise manufacturing costs for generics and biosimilars in the US [139]. However, the trade war has opened up India's opportunity to export APIs. Currently, more than half of the 342 manufacturing facilities worldwide with more than ten active US-approved API products are located in India [140]. And very recently, a bill "H.R.7121(H)-Protecting our Pharmaceutical Supply Chain from China Act of 2022" is introduced in the U.S [141].

The 2,100-mile long India-China border has long been a source of contention between New Delhi and Beijing [142]. Border tensions and the pandemic have jeopardized the supply of drugs and food between these two countries [143-145]. However, to reduce Chinese API dependency, India launched a government-backed Production Linked Incentive (PLI), as India's \$42 billion pharmaceutical sector is heavily dependent on China for API [146].

A military confrontation between China and Japan has come into being for the first time since the end of World War II. After the Diaoyu Islands crises of 2010 and 2012, Japan began to regard China as a main security threat [147]. They have economic relations and cultural exchange but Japan was a pioneer in creating the concept of both the QUAD and the Indo-Pacific area [148]. The volume of trade between Japan and China

shrank in 2019 due to China–US trade frictions [149]. Japan, the largest pharmaceutical importer in the world, obtains the majority of its supplies from India, the United Kingdom, and Italy. In light of growing concerns about dependence on China around the world, the Japanese government plans to increase domestic pharmaceutical production [150].

Taiwan, missiles, and spying remain China's top priorities in the new Xi administration, as spread in many US news media [151]. Despite this, President Xi has stated that China is looking for ways to "get along" with America, even as tensions rise [152]. However, Taiwan tensions, have raised concerns about the safety of undersea cables around the world [153], as well as the semiconductor industry. In the midst of the US tech war, TSMC (the largest chip foundry with some big clients like Apple, Intel, Qualcomm, AMD, and Nvidia, based in Hsinchu Science Park, Taiwan) is under increasing threat from China [154]. Furthermore, Taiwan is home to more than 90% of the world's advanced semiconductor manufacturing capacity [155]. Semiconductors are widely used in high-performance computer chips, medical equipment, drug delivery systems (implants) and in-vitro diagnostic devices, among other things [156]. Therefore, China has blocked imports of citrus, fish and other foods from Taiwan but avoided disrupting important technology and manufacturing relationships [157].

[3] Civil unrest in Asian or Eurasian countries

(a) *The Nagorno-Karabakh conflict (Between Armenia and Azerbaijan)*

Heat wave, drought, and war left Nagorno-Karabakh losing over 80% of its access to water during the war last year [158]. The conflict became even more relevant for Azerbaijan in terms of its drinking water, irrigation, and hydropower. Between 20,000 and 30,000 people were killed in military operations during the Armenia-Azerbaijan clashes [159]. Ballistic missiles, drones, and other heavy artillery have been used, including the use of internationally banned cluster bombs [160]. Among the series of clashes, 50,000 people were injured or disabled, 700 medical institutions were destroyed, and the damage to the healthcare system was estimated to be \$1.2 billion (Figure 7) [161]. Only 15% of the Armenian population was found to be doubly vaccinated until October, 2021. They were found to have the lowest vaccination rates in the Caucasus region as the pandemic has been politicized [162]. Vaccine skepticism and being seriously hit by the COVID-19 pandemic have also been reported. Both Azerbaijan and Armenia faced a GDP shrinkage of nearly 5% due to the pandemic outbreak [163, 164]. Azerbaijan's Caspian Sea, the world's largest landlocked body of water, is already rising, threatening the country's major urban centers and industrial resources along the coast [165]. With an increase in the frequency of

extreme weather events, worsening desertification, and worsening land degradation, climate change is making Armenia more vulnerable. Agriculture, human health, water resources, forestry, transportation and energy infrastructure, and human health are the most at risk [166].

(b) Kyrgyzstan-Tajikistan border Conflicts

Kyrgyzstan-Tajikistan border tensions erupted into a brief open conflict in September 2022, and there have been more than 230 border clashes over the last 20 years between the two countries [167]. The two landlocked countries share an approximately 1,000-km long border, a third of which is disputed [168]. As a result of the COVID-19 pandemic, both of these countries have seen a precipitous drop in migrant laborer remittances from Russia [169]. Both of these countries' progress in Western-style public health education and science has been found to be slow [170].

(c) Sanctions and Anti-regime protests in Iran

The current anti-regime protest in Iran is a perpetuation of the previous one, sparked by the government's subsidy cut decision that caused price hikes by as much as 300% for a variety of staples [171]. Almost half of Iran's 82 million population is now below the poverty line [172]. The annual rainfall is less than one-third of the global average [173], and climate changes have severe consequences for food and health [174]. Iran's economic woes have sparked several waves of protests in recent years. The UN human-rights chief has urged Iranian authorities to stop the "disproportionate use of violence" that has reportedly killed over 50 children and injured many more during Iran's public unrest [175]. Many Iranians injured by security forces during the protests are afraid to seek medical attention because some protesters seeking medical assistance have been detained. Iran has long been subject to severe international economic sanctions, which have limited their access to healthcare and are thought to be a contributing factor to their suffering [176]. Iran's ability to import drugs and medical equipment has been constrained by the majority of pharmaceutical companies being wary of getting into trouble due to US sanctions [177]. Patients with thalassemia, hemophilia, cancer, epilepsy, and multiple sclerosis who need medical care have been severely hampered by sanctions [178]. According to the 2018 statistics, among those who inject drugs in the Middle East and North Africa (MENA) region, more than 45% of them were from Iran [179].

(d) The War-weary Afghanistan

The US Armed Forces completed their withdrawal from Afghanistan on December 31, 2021, ending 20 years of war and leaving 13 million children facing malnutrition [180] and one-third of the people food unsecured [181]. The IMF says, long-run war in Afghanistan lowered yearly national income by roughly

50% in 2016 [182]. Inflation began to rise in early 2021 as strengthening oil prices increased food transportation costs by as much as 50% in some areas [181]. Since the USA's withdrawal, the World Bank, one of the project's main funders, has stopped funding the country's largest health project, which constituted nearly 80% of the country's total health expenditure [183]. This has created ripple effects for the healthcare system, as hospitals operate with minimum resources [184]. The country has gone through four waves of the COVID-19, and trading economics data shows that the vaccination rate has just touched 30% as of December 3, 2022 [185]. According to the WHO, deaths due to environmental risks and pollution constitute 26% of overall mortality in Afghanistan. More than 30% children under 5 are underweight and malnutrition reported among 60% children [186]. Drug abuse prevalence is close to 13% among those who are 15 years and older, and the country is known as the world's largest producer of opium, with an estimated 85% share of the total global supply in 2020 [187].

[4] Arab and Middle East Unrest

Several Arab countries are in a humanitarian crisis as a result of armed conflict. Syria, Iraq, Lebanon, Sudan, Yemen, Libya, and the occupied Palestinian territory are among these countries [188]. Between 1970 and 2019, there were 41,837 attacks in the Middle East, making up almost 25% of all terrorist attacks worldwide [189](Figure 6). Since the beginning of 2022, thousands of children have been killed in conflict or violence in several Middle Eastern and North African countries [190]. Nearly 6.5 million COVID-19 cases and over 100,000 fatalities had been documented in the MENA region as of July 1, 2020. The highest number of cases have been reported in Iraq, Jordan, and the United Arab Emirates, while the highest number of fatalities have been reported in Egypt, Tunisia, Jordan, and Morocco (Figure 6) [191].

(a) The Syrian Arab Republic has remained a civil warzone for over a decade. Killing, sexual offenses, multiple healthcare crises followed by daily life struggles, a cholera outbreak among refugees, and damage to 42% of hospitals are the consequences of this war [192]. Physicians for Human Rights' (PHR) June 2022 report shows that violence caused the deaths of more than 90% of medical personnel in the Assad regime, and a severe fear of healthcare worker shortage occurred when 70% of them fled [193, 194]. Syrian refugees have affected Jordan's economy, labor market and society through different aspects. According to Ministry of Planning and International Cooperation (MOPIC), the direct and indirect cost of hosting Syrian refugees reached approximately \$8 billion [195](Figure 6) and each refugee cost the Jordan government almost \$3,750 [196].

- (b) Yemen has been dealing with the worst humanitarian crisis for seven years, where more than 80% of the population requires aid [197]. According to the UN report July 2022, more than four million Yemenis have been internally displaced since the crisis began, making up nearly six million people who have been forced from their homes [198]. A World Bank, UNICEF, and WHO partnership study reveals that almost 40% of the population living more than two hour from comprehensive emergency obstetric and surgical care [199]. More than 50% of Yemen's population had to face hunger in 2021 [200]. Around 90% foods are imported and Norwegian Refugee Council reported that more than 90% families have cursed COVID-19 for food and other necessity inflation [201]. Nearly 70% of additional deaths between 2015 and 2019 were related to violence in armed conflict (Figure 6) [202]. Nearly 2,50,000 people have died as a direct or indirect result of the conflict during this time, including over 12,000 civilians who were killed in targeted attacks. Additionally, 60% of the deceased are children under the age of five [203]. Early in 2020, the WHO reported that less than 50% of Yemen's medical facilities were fully operational due to the country's ongoing civil war, which was accompanied by seasonal outbreaks of cholera, dengue fever, malaria, chikungunya, and diphtheria [204]. Around 65% of diphtheria patients were under the age of 15, and nearly 50% of those cases had never received the diphtheria vaccine [205].
- (c) Lebanon has been without a president for over a month [206]) and banks are remained closed for clients[207]. After decades of war, Lebanon and Israel/Occupied Palestinian Territory agreed to resolve conflicts over maritime boundary [208]. With a population estimated at around 6 million, Lebanon is home to the largest number of refugees per capita in the world. Around 30% of its population is made up of Syrian refugees (Figure 6). Being hit by a long-running economic and financial crisis, a pandemic, and a Beirut food grain store blast in 2020, more than 50% of the population in the country lives below the poverty line [209, 210]. According to the World Bank's recent data, Lebanon was one of the top four countries with the highest food inflation in 2012 [211]. In real terms, it had experienced 122% food inflation YOY (Figure 6) [212]. As the outbreak in Syria has grown, cholera has spread to neighboring Lebanon [213].
- (d) Afro-Arab Sudan faces 'generational catastrophe'-- floods, militia raids and hunger mean a third of children are not in school at all [214]. Among the most internally displaced people on the African continent, Sudanis home to over 1.1 million refugees, the majority of whom are fleeing South Sudan (Figure 6) [215]. The country has been in the midst of a political crisis ever since long-time leader Omar al-Bashir was overthrown there in April [216]. In addition, Sudan has endured a number of humanitarian and economic crises, including a 22-year civil war and the Darfur genocide in 2003, which caused over two million deaths, four million displacements, food shortages, and famine, and for which an estimated 7 million people urgently require life-saving assistance [217, 218]. Additionally, the COVID-19 pandemic, severe health risks, malnutrition, poor transport infrastructure and a severe lack of funding for essential services all plague South Sudan [219]. In addition, the country has less than 30% healthcare access and less than 50% vaccination coverage [220]. The climate crisis and displacements, malaria cases in Sudan nearly doubled between 2015 and 2019 [221]. More than 70% of people use mobile phones, but the country's telemedicine coverage is still facing challenges [222].
- (e) Libya has experienced decades of armed conflict and political instability. During the Gaddafi regime, oil-rich Libya enjoyed free education, electricity, and health facilities [223]. Libyan health-care infrastructure continues to deteriorate due to civil war, inadequate human and financial support, and inadequate health facilities. More than 37 attacks reported over health facilities and medical personnel after violence began in April, 2019 [224]. Libya's health system is on the verge of collapse, with three-quarters of primary health care facilities closed due to a lack of medical personnel, supplies, medication, and equipment [225]. Only 40% of hospitals' inpatient beds are adequately functioning with an overall bed capacity of 15 per 10,000 [226]. According to data from Trading Economics, food inflation in Libya averaged 9.87% from 2005 to 2022 and peaked at 52.64% in December of 2017. Over 80% of all deaths and 78% of years with a disability-adjusted life expectancy in Libya are due to non-communicable diseases, which are particularly susceptible to long-term breakdowns in health services and policymaking processes [227].





**A THOUSAND AIRSTRIKES IN SYRIA
AND 5,500 BOMBS DROPPED IN
ARAB COUNTRIES SINCE 2017
FROM OCCUPIED PALESTINE
TERRITORY**



**LIBYA: 80% OF ALL DEATHS ARE
DUE TO LONG-TERM BREAKDOWNS IN
HEALTH SERVICES**

**VACCINATION RATE WAS BELOW 10%
IN PALESTINIANS UNTIL JUNE, 2021**



**COVID-19: HIGHEST NUMBER OF FATALITIES
HAVE BEEN REPORTED IN EGYPT,
TUNISIA, JORDAN, AND MOROCCO**

**PALESTINE: 40% OF ICU PATIENTS
ADMITTED DURING WAR ESCALATION
HAD COVID-19 COMPLICATIONS**



**LEBANON: 30% OF
POPULATION IS MADE UP
OF SYRIAN REFUGEES**



**SUDAN IS HOME TO OVER
1.1 MILLION REFUGEES**



**JORDAN: COST OF HOSTING SYRIAN
REFUGEES REACHED \$8 BILLION**



**25% OF ALL TERRORIST
ATTACKS WORLDWIDE
OCCUR IN THE
MIDDLE EAST**



**YEMEN: 70% OF ADDITIONAL DEATHS
BETWEEN 2015 AND 2019 WERE RELATED
TO VIOLENCE IN ARMED CONFLICT**



**LEBANON EXPERIENCED 122%
FOOD INFLATION YOY**



**NORWEGIAN REFUGEE COUNCIL: MORE THAN 90% YEMENI
FAMILIES HAVE CURSED COVID-19 FOR FOOD AND
OTHER NECESSITY INFLATION**

Figure 6: The never-ending Middle East conflict

- (f) The conflict between Palestine and its occupiers/Israel is a century-old issue. The occupiers have also experienced bereaved displacement as a result of persecution in Europe during World War II's Holocaust [228]. They have launched over a thousand airstrikes in Syria and dropped 5,500 bombs in Arab countries since 2017, facing new threats on various fronts (Figure 6) [229, 230]. It is a perfect example of “fostering recurring cycles of conflict” as depicted earlier. However, for a noble cause, two authorities signed an agreement to transfer vaccines for the COVID-19-afflicted people in June 2021, as the vaccination rate was below 10% in Palestinians [231]. Afterwards, the donor withheld vaccines for the Palestinian population due to the escalation of conflicts and violence, which increased the risk of COVID-19 transmission and

damage to health facilities—including COVID-19 diagnostic testing facility. Close to 40% of patients admitted in ICUs during the escalations had complications related to COVID-19 [232]. In the West Bank and Gaza Strip in 2018, there were an unprecedented 432 attacks on healthcare facilities (Figure 7) [233]. In just 13 days in May 2021 alone, the WHO reported 117 attacks on healthcare facilities in Gaza and the West Bank [234].

[5] War and Conflicts in African Countries

Deserts, grasslands, tropical forests, and semiarid lands are the four major climate zones in Africa [235]. The three most important security concerns in Africa to watch in 2022 are intra-state conflict, terrorism, and unconstitutional changes in government [236]. Droughts in Sub-Saharan Africa more than tripled between 1970 and 2009. According to the African

Development Bank, climate change is costing Africa up to 15% of GDP growth [237]. Another recent study commissioned by Christian Aid claims that unless significant investments in climate adaptation are made, global warming will reduce Africa's economic growth by two-thirds by the end of the century [238]. In 2018, 2.2 million people were affected by devastating cyclones in Malawi, Mozambique, and Zimbabwe. Malaria, dengue fever, Lassa fever, Rift Valley fever, Lyme disease, Ebola virus, West Nile virus, and other infections have been linked to natural disasters [239]. Furthermore, due to the central role agriculture plays in African economies, malnutrition has increased by nearly 50% since 2012 [240]. African nations, which have contributed the least to the global climate crisis, could see a 64% decline in their GDP growth rate by the end of the century [241]. However, the UN and Red Cross blame the Ukraine crisis for contributing to nearly 25% of Africans' food insecurity [242, 243]. Additionally, until December 2, 2022, only one-third of the population will have received at least one dose of a vaccine, making them the continent with the lowest vaccination rate [244]. The pandemic delayed the first dose of Diphtheria, Pertussis, Tetanus, Hepatitis B, and Hemophilus influenza B vaccines for 8 million African children in 2020 [245]. In addition, more than 95% malaria is reported in African countries [246]. Since 1989, 75% of non-state armed conflicts have been in Africa [247]. Many authors have argued climate crisis have strong association with conflicts in Africa [247-251]. Sub-Saharan Africa has the highest number of conflicts in the world, with at least a thousand people killed each year on average over the last two decades [252]. Half of the Hepatitis E outbreaks in sub-Saharan Africa have occurred among refugees and displaced persons living in humanitarian crisis settings [253].

(a) *Ethiopia's Tigray conflict*

Ethiopia, a landlocked country in the Horn of Africa, is a federal democratic republic. In Ethiopia, the pooled level of poor COVID-19 prevention practice was 51.60%. Inadequate COVID-19 knowledge, a negative attitude toward COVID-19 management, low educational attainment, living in a rural area, and being female were all significantly associated with poor COVID-19 prevention practices [254]. Armed conflict between the Ethiopian military and the Tigrayan Defense Force (TDF) in northern Ethiopia began on November 4, 2020 [255] and has displaced over 3 million people and killed about 500,000 in the last 2 years [256]. Armed militants destroyed crops, killed people, looted and vandalized hospitals, clinics, health posts, and ambulances, as well as ransacked and destroyed schools [257]. Rape, gang rape, sexual enslavement, torture, beatings and killings of friends and family, and derogatory ethnic slurs have all been reported [255]. According to the United Nations World Food Programme (WFP), nearly half of Tigray's six

million residents are classified as "heavily food insecure," with nearly 90% lacking regular access to food. According to the UN, nearly one in every three children under the age of five is malnourished [258]. Among patients with severe illness, the Covid-19-related mortality rate went up to 40.3% [259]. Fistula is raging in Tigray as a result of obstructed labor, limited or absent maternal care services, under-nutrition growth, birth difficulties, trauma, and sexually transmitted diseases (STDs) caused by conflict-related sexual violence [260]. According to Médecins Sans Frontières (MSF) assessment of 106 health facilities in the Tigray region between mid-December 2020 and early March 2021, "nearly 70% had been robbed, and more than 30% had been disrupted; only 13% were operating normally" [261]. The ongoing conflict resulted in the destruction or damage of more than 1500 health facilities in Ethiopia in 2021, according to the country's health ministry (Figure 7) [262]. However, a surprise deal has been reached in the Ethiopian civil war with both sides agreeing to halt their two-year conflict [263].

(b) *Democratic Republic of the Congo–Rwanda Conflict*

On April 23, 2022, the Ministry of Health of the Democratic Republic of the Congo announced an Ebola virus outbreak (mortality rate 30-90%) which was declared ended by 2016 in West Africa, claimed more than eleven thousand death [264, 265]. It witnesses 45% of deaths of children fewer than 5 years old due to malnutrition [266]. According to the United Nations, the most recent fighting with Rwanda, which started in October 2022, has forced nearly 300,000 people to flee their homes [267]. Multiple occasions have seen Rwandan forces fighting alongside Congolese rebels while crossing into the Congo. The same number of individuals were displaced by ethnic conflict in the Ituri province in 2019 during a second Ebola outbreak. Six years of conflict in the DR Congo resulted in a total death toll of six million people. The majority of deaths were caused by illness and malnutrition [268].

[6] Myanmar Military Vs Arakan Army

Clashes between the Arakan army and the military junta in 2019 displaced more than 20% people across the Rakhaine state, one of Myanmar's poorest [269]. However, millions of Rohingya refugees fled from Myanmar in the last 50 years, and an estimated 1.4 million refugees are seeking asylum in Bangladesh, India, Indonesia, Nepal, Thailand, and Malaysia [270-272]. Pneumonia, liver diseases, breathing difficulties [273]; diphtheria, HIV, sexually transmitted diseases, Covid-19 [274]; Hepatitis B and C [275] have so far reported among refugees. The forced migration has created anxiety, depression, emotional distress, and PTSD among more than 60% of them [276]. Approximately 80% of humanitarian aid providers were denied entry into refugee camps during lockdowns [277]. Also, the host country was due to receive 12

million doses in early 2021 through the COVAX initiative, but by May 2021, the country had not received a single dose [278]. According to the UN, Rohingya aid represents only half of the funds raised this year [279]. In addition to limited access to voluntary contraception, 50% of refugee settlement areas lack basic skills for general sexual, reproductive, and post-rape care (including emergency contraception and safe abortions), and more than 75% of births are attended by unskilled personnel [280]. Also, discrimination, violence, lack of safe drinking water, poor sanitation and health education reported in other studies. Forging national identity cards or passports through bribery or fraud, traveling abroad illegally without a passport, illegal weapons, drug trafficking, smuggling, quarrels, fights, kidnap and murders are common with them [281-283].

V. RESULTS AND DISCUSSION

Collectively, the pandemic, climate change, rising inflation, economic stagflation, and global conflicts pushed human civilization into a unique situation that the world has never experienced before. Following other issues are taken into considerations:

a) *Poor food handling and a lack of population control threaten public health and safety*

Globally, close to one-third of agricultural produce is lost annually due to insect pests, diseases, weeds, and rodents [284, 285]. The US Centers for Disease Control and Prevention (CDC) confirmed more than 11,000 food-borne infections caused by only a few types of bacteria [286]. According to the WHO, 600 million cases of foodborne diseases are recorded each year, affecting nearly 10% of the world's population [287], and food safety is associated with 7.5% of deaths annually [288]. Furthermore, adulterated and contaminated foods cause 60% of all foodborne illnesses [289]. Food adulteration affects almost all food commodities, and the main enticing factors are high population demand and the desire for fraudulent gain [290, 291]. Only 11 years after passing seven billion, the United Nations declared that the world population had surpassed eight billion [292]. Climate change is making the Egyptian government ask parents to have fewer children [293]. Uncontrolled population growth not only creates food insecurity but also threatens health safety. High population density appears to be associated with cancers, cardiovascular and respiratory diseases [294]; a higher risk of transmission of COVID-19, especially with the Delta variant [295, 296]; poor living conditions, such as insufficient access to healthy food, drinking water, poverty-related diseases with poor healthcare access. Also, food vulnerability and price volatility are an explosive combination for certain types of conflicts [297].

b) *Malnutrition is still a world health crisis*

Global acute malnutrition increased dramatically and staggeringly from 10% in 2019 to 28% in 2020, and household food security significantly decreased from 59% in 2019 to 15% (Mulugeta & Gebregziabher, 2022). According to the World Innovation Summit for Health, 2018 60% of chronically food-insecure and malnourished people globally, including 75% of all children with stunted growth, live in conflict-affected countries (Figure 7) [297].

c) *Poor health literacy still prevails in wealthy and dominant countries*

Unfortunately, many European citizens lack health literacy, limiting their ability to make decisions about their own, their families', and their communities' health and well-being [298]. Even low health literacy (Figure 2) is reported in nearly 40% of US [299] and UK adults [300]; 60% of the older population in the EU [301]; 60% of the adult populations in Canada [302]; Australia [303]; the UAE [304]; and more than 70% in China [305]. Despite long-term improvements in health indicators like mortality and morbidity, there are still problems with the provision of healthcare in many low- and middle-income countries. Poor health literacy is a sign that health promotion techniques are not being used properly, and it is linked to the population's deteriorating health status and low compliance with disease prevention initiatives [306, 307].

d) *"Net-Zero Carbon" delayed by decades due to 'collaboration gap'*

Approximately 80% of global carbon emissions are attributed to energy, according to the International Energy Agency (IEA) [308]. Current trends in global food systems would prevent the 1.5 °C target from being met and put the 2 °C target by the end of the century in jeopardy, even if fossil fuel emissions stopped now [309]. According to an Oxford study, decarbonizing the energy system by 2050 could result in enormous cost savings, but it will require a massive increase in private investment in renewable energy and sustainable infrastructure around the world. Estimated annual private investment in these sectors until 2050 ranges from US\$4.4 trillion to \$9.2 trillion [310, 311]. Not surprisingly, America and China, two major polluters (40% of total CO2 emissions), were hesitant and noncommittal on the issue at COP27 [312]. The IEA estimates that global nuclear capacity will need to double by 2050 to meet net-zero targets [313], but obstacles remain. In the aftermath of the Fukushima disaster in Japan, Germany, for example, was required to close nuclear power plants by 2022 [314-316].

e) *Pandemic hits on healthcare system*

The pandemic's longest and most deadly surge has posed risks to quality of care and left medical professionals exhausted. Various studies on health professionals show work-related stress, sleep

disturbances and burnouts in 60% [317-319]; and hospitalization within 6 months of the pandemic starting 15% [261]. Also, WHO assumes that more than 1,15,000 health professionals may have died in the period between January 2020 and May 2021, and illnesses kept at least 500,000 health workers out of the US labor force alone [320, 321]. Nearly 20% of 1000 American allied health workers (nurses, assistants, etc.) who responded to the survey stated that the pandemic was one of the main reasons they quit their jobs [322]. According to a cross-sectional study conducted by the US Bureau of Labor Statistics and the University of Minnesota Data Service, pandemic-induced physician turnover was four times that of allied professionals [323]. Lack of PPE, medical supplies, and adequate compensation have been reported in several studies.

f) Humanitarian crisis over treatment guideline adherence and drug misuse

Migration and displacement are social determinants of health problems for refugees and other migrants [324]. Health care may be low on the list of priorities for children and adolescents who face severe pressures ranging from overcrowded camps or asylums to deep anxiety about their future [325]. Humanitarian crises are associated with increased short- and long-term cardiac morbidity and mortality, as well as elevated blood pressure [326]. Hypertensive patients with diabetes mellitus were twice as likely to exhibit poor BP control, as found in war-torn Palestine [327]. Also, a US-based survey of re-settled Rohingya refugees from Myanmar shows a higher trend of chronic diseases like diabetes, hypertension, and obesity [328]. A huge increase in benzodiazepine (sedative) dispensing is reported in Canada, and abuse of similar drugs doubled in Italy among people suffering from anxiety and stress caused by COVID-19, between the years 2020 and 2021 (Figure 7) [329]. An announcement from authorities on "simple possession of cannabis" to thousands of convicted citizens prior to the US midterm elections exploded recreational drug abuse in both the US and the EU [330, 331].

g) War and terrorism hits on healthcare system

A terrorist attack on a hospital is not uncommon. In just 2017, there were at least 188 hospitals and clinics that were destroyed or damaged. More than 60 people were kidnapped and 64 healthcare workers were killed; 203 patients died and 141 were injured. Health facilities have been forced to close in Afghanistan, Burkina Faso, the Central African Republic, Egypt, and Turkey [332]. Research finds 454 terrorist attacks against hospitals were identified in 61 different countries over a 50-year period by the Global Terrorism Database (GTD), where more than 50% of the attacks took place in the Middle East, Northern Africa, and South Asia (Figure 7). And in more than 50% of cases, attacks targeted medical personnel [333]. Two other

similar studies show that close to 70% of those attacks involved in bomb explosion [334] and close to 60% attacks taken place after 2001 [335]. Attacks on hospitals may have long-term consequences: hospital units may be unavailable for an extended period of time, and replacing staff may take several months, further complicating hospital operations. In addition, hospitals are houses of resources (drugs, toxins, radioactive elements, and biological cultures) and information that could be used for nefarious purposes, making them a tempting target for terrorist groups. A full-fledged war and siege can have devastating consequences for patients who require constant care and well-functioning health infrastructural facilities, especially in resource-limited settings where providing optimal care is already difficult [336].

h) Global transition or a massive work-force redistribution

The pandemic has accelerated job redistribution across sectors, with an estimated 25% of workers worldwide choosing or being forced to change occupations by 2030 [337]. Interestingly, the SMEs seeking to recover are now confronted with skilled labor shortages [338-340], whereas big tech giants (Apple, Alphabet, Microsoft, Netflix, Meta, Twitter, HP, Stripe) [341, 342], media giants (The Guardian, BBC, CNN, Bloomberg) [343, 344], finance giants (JPMorgan Chase, Goldman Sachs, Morgan Stanley, Citigroup, Barclays, HSBC) [345-347], retail giants (Amazon, Tesco, Walmart) [348, 349] and fashion chain giants (Gucci, Nike, H&M) [350, 351] have seen mass layoffs in recent years, mostly in 2022.

i) Healthcare workforce shortage and transition

The redistribution of the workforce and the shortage of workers could lead to a unique situation in healthcare systems around the world. The Eurozone is dealing with severe healthcare shortages (Figure 7). There are fewer doctors in France today than there were in 2012. In Germany, there were 35,000 unfilled positions in the care industry last year, a 40% increase from ten years prior. More than 700,000 people in Spain were awaiting surgery. By 2030, Finland will require 200,000 additional workers. At least 40% of doctors in one-third of the Eurozone's nations were close to retirement age [352-357]. Because of the physician shortage in general practice (GP), clinical pharmacists are working in general practice across England [358, 359]. According to a recent Lancet study, the Middle East and North Africa are lacking 636,000 doctors, with South Asia having the biggest gaps [360]. Also, turnover intentions have been reported in close to 50% of physicians in emergency department, resident physicians and village doctors in China [361-363]; more than 50% health professionals in Ethiopia [364]; more than 55% doctors in Iraq and 30% doctors in South Korea [365]. Burnout among healthcare workers and

deteriorating care quality are the immediate effects [366]. Also, globally, more than 20% of health professionals are located in areas where there are many care gaps and it is a major determinant of job dissatisfaction [367]. Some 30-60% nurses leave their first job in less than a year due to work related stress, job satisfaction and better opportunities elsewhere [368, 369]. And it is estimated that the cost is four to five times higher as productivity decreases with new hires [370]. Altogether, the motivation of health workers towards their professions has declined at a time when it is already projected that the world will face an 18 million healthcare workforce shortage by 2030. And the WHO says, more than 40% of them, or 7.6 million, will be nursing shortages [368]. Moreover, there is a 6.5-fold difference between high-income and low-income countries [371, 372].

j) *Fears of nuclear war or biological weapons are not entirely false*

Invaders of Ukraine launched projectiles at Chernobyl nuclear facility and the active Zaporizhzhia complex, causing international concern and raising fears

of a nuclear disaster in Eastern Europe [373]. The pandemic, hunger, discrimination or racism, climate change, rising inflation or economic crisis, imperialism, political turmoil and nuclear war share a common thing—conflict. In the last 100 years, human civilization has experienced multiple acts of bioterrorism, chemical warfare, and nuclear explosions that have targeted civilians [374]; all of them were borne out of conflicts. Although, the Geneva Protocol, which was first signed in 1925 and is still in effect today, forbids the development, manufacture, and use of biological weapons in armed conflict [375]. However, already Switzerland, Sweden, Finland, Germany, US, Russia, Italy, Belgium, UK, Japan and Israel/Occupied Palestinian Territory have spent billions for nuclear shelters (Figure 7) [376-380]. And, no nuclear-armed state is currently disarming, nor engaged in nuclear disarmament negotiations [381]. Also, SARS-CoV-2 has already demonstrated its ability to start a pandemic and, in spite of efforts made around the world, it still poses a serious threat to use as a bioweapon (Figure 7) [382].



Figure 7: Humanitarian crisis over global health.

Present health system sustainability challenges in conflict zones and in rest of the world

1. Food crisis, malnutrition, lack of health facility access, attacks on health facility structures or medicinal personnel, harder hit by pandemics, violent extremism, violence against women and children, displacements, discriminations and many other nefarious things are common among war or conflict zone [383-386].
2. Climate-related challenges have escalated 30 times compared to 20 years ago, which will cost the global economy \$224 billion in 2021 alone, accompanied by a precipitation of both chronic and contagious disease burdens. The non-cooperation of two major polluters at COP-27 may be associated with trade war-related privations, an economic crisis due to the pandemic, and fuel and power crisis. Rather, the pandemic and the fuel crisis forced major polluters to return to fossil fuel energy production.
3. Climate disasters are not under human control but are not completely beyond human reach. Much less of the money spent on war could have been spent on innovation, food, and the health system [387]. The world's medical system is still lacking [388, 389], facing newer types of diseases and challenges and will face more in coming days [390-392]. Many cancer types, HIV, autoimmune diseases, genetic disorders, antibiotic resistance—solutions of many vexing problems remain to be found.
4. Russia's invasion of Ukraine threatens to exacerbate the global inflationary surge, unbalancing oil demand and investment. The triple whammy of pandemic, fuel price shock, and currency depreciation causes economic and financial turmoil in low- and middle-income countries. Medical care and health spending generally increase faster than general inflation [393]. Also, rising inflation is associated with infant mortality rise [394]; child and maternal health compromise [395]; hospital labor expenses per patient [396]; depression, anxiety, frustration and stress [397]; cost burdens of chronic illnesses [398]; less access to assisted-living and independent-living facilities for the elderly population [399]; low-income households to compromise food quality [400]; decline insurance coverage [401]; worsening clinical labor shortage, lack of potential educators and high turnover [402]; lack of clinically necessary pharmaceuticals and supplies, as well as the accessibility of insecticides necessary to control vector-borne disease [403], are just a few examples of such problems.
5. Both conflict and climate crises cause displacements, which bring not only food and health crises but also unhealthy competition and newer

- conflicts. Pandemics, climate crisis, and economic downturns poses major hit during and/or after a major conflict. Environmental pollution would not cause 26% of mortality in Afghanistan if it had not been a war zone for the last 20 years. The Vietnam War lasted some 30 years and killed three million people or more [404]. Following the war, Vietnam was completely dedicated to an economic revolution and did not engage in any significant conflict. Violence was much lower after the Taliban took over, but it is now increasing as the Taliban fights two insurgencies. Azerbaijan and Armenia could resist more against a pandemic induced 5% GDP drop and \$1.2 billion in healthcare damage. A noticeable fact is that 700 medical institutions were destroyed at the cost of the Nagorno-Karabakh conflict, and the water crisis in Azerbaijan was a key factor, driven by the climate crisis [405, 406]. Medical advances in Iran have boosted the country both domestically and internationally; the country was once known for producing 80% of the world's medicinal herbs [407]. Conspicuous sanctions and spiraling unrests worsen their health situation, make life-saving drugs unavailable, and make it home to nearly half of the MENA region's injecting drug addicts.
6. 80% of all humanitarian needs are also influenced by conflicts. Up to two-thirds of the world's extreme poor will reside in unstable and conflict-affected areas by 2030 [408, 409]. If the food crisis, inflation, economic stagflation prevails, healthcare will be less focused. And above all, people below the poverty line, facing any sort of discriminations or crisis can easily be engaged in crime, conflict, and chaos by shrewd opportunists. It will further decline the public health facilities. The European race to conquer Africa was fueled by commercial greed, territorial ambition, and political rivalry [228]. They encouraged Africans to fight each other in order to gain power [410, 411]. Gutiérrez-Romero, 2022, stated that a 10% increase in the local price index is associated with a 0.7 percentage point increase in violence against civilians in Africa. The Ukraine crisis contributes 25% of their food insecurity, according to the UN and Red Cross [297]. Furthermore, Christian Aid claims severe economic stagflation will multiply conflicts in the future [238]. Their health system is also a terrible mess. They may never get rid of this position unless there is a solution to their conflict.
 7. Approximately 450 terrorist attacks on healthcare facilities, mostly by bomb explosion, have been registered in more than 60 countries over the last five decades. It also raises the question of the credibility of these data, given that over 430 attacks on healthcare facilities in Palestine [233] and more

than 800 attacks on medical facilities in Ukraine have already been reported [124], [412-414]. Also, it is of great concern that victims of oppression are not even safe in hospitals, as are the caregivers and health providers.

8. For whatever reason, the total number of displaced persons exceeded 100 million, and there were 32.5 million refugees worldwide as of mid-2022, according to the UNHCR's refugee data finder. They are posing healthcare and economic burden to the already stressed host countries. Like Sub-Saharan Africa, which is facing multiple viral disease outbreaks due to the climate crisis, an intolerable food crisis partially due to the Ukraine war and triple drought, and vaccine discontinuation due to the COVID-19 outbreak, it is now hosting refugees who have become half of its Hepatitis E population. Furthermore, the EU is home to one in every eight HIV patients in the world—more than 25% of Ukraine's population has been displaced and taken refuge in EU countries, where they are already among the highest rankers of HIV, drug-resistant tuberculosis, measles, and hepatitis B and C. Although close to 50% of the Ukrainian war refugees had returned by June 2022 (12.6 million vs. 6 million), their vulnerabilities remained high [415, 416].
9. Transition in healthcare is not unusual; the same is happening in other sectors as well. Without sustainable economic growth, skilled workforce development is a myth. A peaceful, independent nation can take this challenge easier than a community under conflict [417-419]. In response to an expected Russian attack, the Eurozone increased its arms purchases by nearly 20%, despite the fact that spending on healthcare would be more necessary given the region's severe healthcare shortages, which may cause the region's health system to collapse in the near future (Figure 7) [420]. This was the case despite the fact that the global trade in major arms fell by 4.6% [421].
10. It is impossible to shelter the population from biological weapons, but possible antidotes or vaccines may have been developed in secret. However, they will not be given away for free, and there will be an option to purchase them at a bargain price. Opportunistic gain is at the heart of all types of mischiefs. If that is the case, the potential for a nuclear attack becomes almost non-existent, because there will be no opportunity for dirty instincts to be satisfied if civilization does not exist. But risk arises when terrorists capture a nuclear weapon through hijacking or, in some cases, misconceptions [374], [422].

VI. LIMITATION OF THE STUDY

Media control and propaganda always put strain over information broadcast, especially when it is related to war and conflict. Therefore, data collection from media source become a limitation for any researcher. However, the present analysis mostly uses statements from ADB, CDC (US), CRED, IMF, IEA, MOPIC, MSF, OECD, UNESCO, UNHCR, WFP, WWF, WHO, UNICEF, and World Bank, collected from their website or from the media.

VII. CONCLUSION

War, conflicts, climate change, and pandemics are all contributing to the crisis's escalation, both directly and indirectly. The coexistence of all of these issues may endanger civilization by causing the loss of many basic healthcare facilities such as health system access, vaccination, poison control, coverage health insurance or co-payment policies, health vigilances and surveillances, monitoring of adverse drug reactions, telemedicine support, patient education or awareness programs, newer drug inventions, and allied technological advances and innovations. In a stable socio-political environment and sound economy, any of these facilities in countries or localities would take longer to develop and necessitate government and other allied authority support, IT innovation and protocol advancements, and public adherence to the health system.

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Abbreviations

ADB: Asian Development Bank
 AFP: Agence France-Presse
 AIDS: Acquired Immune Deficiency Syndrome
 AMD: Advanced Micro Devices, Inc.
 API: Active Pharmaceutical Ingredient
 BBC: British Broadcasting Corporation
 CDC: US Centers for Disease Control and Prevention
 COVID-19: Coronavirus disease of 2019
 COVAX: COVID-19 Vaccines Global Access
 CNN: Cable News Network
 COP27: 27th Conference of the Parties to the United Nations Framework Convention on Climate Change
 CRED: Centre for Research on the Epidemiology of Disasters, Brussels

CNBC: Consumer News and Business Channel
 EU: The European Union
 GDP: Gross Domestic Product
 GP: General Practitioner
 GTD: Global Terrorism Database
 HIV: Human Immunodeficiency Virus
 HP: Hewlett-Packard
 H&M: Hennes & Mauritz AB
 HSBC: Hongkong and Shanghai Banking Corporation
 ICU: Intensive Care Units
 IEA: International Energy Agency
 IMF: International Monetary Fund
 JPMorgan Chase: JPMorgan Chase & Co.
 MENA: Middle East and North Africa
 MSF: Médecins Sans Frontières
 MOPIC: Ministry of Planning and International Cooperation
 OECD: The Organization for Economic Co-operation and Development
 MOPIC: Physicians for Human Rights'
 PLI: Production Linked Incentive
 PPE: Personal Protective Equipment
 PTSD: Post-Traumatic Stress Disorder
 QUAD: Quadrilateral Security Dialogue
 SMEs: Small and Medium-sized Enterprises
 STDs: Sexually Transmitted Diseases
 TBS: The Business Standard
 TDF: Tigrayan Defense Force
 TSMC: Taiwan Semiconductor Manufacturing Company Limited
 UAE: United Arab Emirates
 UNESCO: United Nations Educational, Scientific and Cultural Organization
 UNHCR: United Nations High Commissioner for Refugees
 UNICEF: United Nations Children's Fund
 WFP: World Food Programme
 WHO: World Health Organization
 WWF: World Wildlife Fund
 YOY: Year-over-year

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Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

TIPS FOR WRITING A GOOD QUALITY SOCIAL SCIENCE RESEARCH PAPER

Techniques for writing a good quality human social science research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of human social science then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow [here](#).



6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

19. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.



20. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

21. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

22. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium through which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

INFORMAL GUIDELINES OF RESEARCH PAPER WRITING

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.



Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.



The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.



Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."



Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

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BY GLOBAL JOURNALS

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Topics	Grades		
	A-B	C-D	E-F
<i>Abstract</i>	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
<i>Introduction</i>	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
<i>Methods and Procedures</i>	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
<i>Result</i>	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
<i>Discussion</i>	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
<i>References</i>	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring



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