

DOI: [10.5575/nairjssh.2022.9.5.3](https://doi.org/10.5575/nairjssh.2022.9.5.3)

A REVIEW OF HURRICANES, TROPICAL STORMS, TROPICAL DEPRESSIONS, AND FLOODINGS' IMPLICATIONS IN THE US AND THE CARRIBEANS DUE TO LACK OF EFFECTIVE PREVENTABLE SCALABLE TECHNOLOGY & SUPPORT FOR ORGANIZATIONAL LEARNING

¹DR. PARK E. ATATAH, ²DR. CATHERINE W. KISAVI-ATATAH, ³DR. LATRICIA L. KYLE, & ⁴DR.
WAWA A. NGENGE

¹ Ph.D. Assistant Professor, College of Education, Department of Health & Kinesiology Research Coordinator,
Prairie View A&M University, Prairie View, TX, USA

² Ph.D., Assistant Professor, College of Education, Department of Health & Kinesiology Health Program
Coordinator, Prairie View A&M University, Prairie View, TX, USA

³ Ph.D., Adjunct Faculty Los Angeles Pacific University, San Dimas, California, USA

⁴ Ph.D., Practitioner Faculty of Economics at University of Phoenix, Phoenix, AZ, USA

ABSTRACT

When dealing processes effective, efficient, and proficient scalable technological developments and the learning processes certain applications should and must be carefully initiated, developed, implemented, and followed step-by-step. However, Houston Harris County, Texas and the spinnabilities have failed the residents due to their leaderships' inabilities, incapacities, and incapacities to address the overgrowth of the populations in the past 10 plus years and the implications that came with it. This study used Double Loop Learning (DLL) process and Deutero-Learning (DL) process theories as lens of analyses. This quantitative research study investigated the populations' overgrowths in Houston Harris County; Texas for the past five years; and the traffics jams issues associated with the growths. The second quantitative research study will investigate populations' overgrowths in Houston Harris, Texas for the past ten years and its flooding effects on Houstonians. The implications of this quantitative scalable technological developments and supports for organizational learning process should eventually bring some possible positive social changes to many Houstonians in Houston Harris County, Texas, and the surrounding areas.

The final three-way quantitative research study finds that when comes to sustainability technology and support of organizational learning when dealing with hurricanes, tropical storms, and tropical depressions in the US and in the Caribbean's, nothing has been done to tackle their humanistic negative implications on peoples' lives and financial damages.

KEYWORDS: *Hurricanes, Tropical Storms, Tropical Depressions, Flooding's, Scalable, Technology, Supports, Organizational Learning, Populations' overgrowths, sustainability, Single-Loop Learning (SLL), double-loop learning (DLL), and Duetero Learning (DL).*

INTRODUCTION

As pinpointed in our scalability research study in 2018, lack of preventable scalability is common in majority cities and surrounding areas in the US; as such, the volumes and the damages created by hurricanes and tropical storms are becoming more expensive and deadly than ever. As affirmed by Ngenge et al. (2017),

Houston Harris County, Texas is the fourth largest city in United States of America (USA); and it is arguable that Houston will possibly surpass Chicago, Illinois as the third largest city in the United States (US), due to its continued and progressive population growths. For example, for the past five plus years, Houston, Texas has been one of the fastest growing cities in the US; possibly, due to the interests of energies employees, employments, companies, or the openness of Texas and local leaderships "open invitations arms" approaches. Sometimes, low or near zero taxes incentives were used as attaché to motivate investors to Houston Harris County, Texas among other factors to mention a few. As result of these types of approaches, it is necessary to immediately implement effective, efficient, and proficient scalable technology and support for organizational learning processes for the city to continue to positively grow within its current complications, implications, and complexities. Beside the above, driving in Houston Harris County, Texas and possibly in the surrounding counties is a nightmare due to lack of effective public policy and leadership support for organizational learning processes. Hagel (2009) found that more and more organizations have realized that in order to be successful in any highly competitive environment, they must encourage double-loop and deuteron educational learning processes. Technically, the double-loop learning (DLL) and deuteron learning (DL) process is designed to plan for today and tomorrow; and singularly for only the present and it can be effective in a short run. As such, the implications of not becoming a learning organization can be costly. It appears that Houston is in for a bumpy and costly transportation ride; because Houston has no mass transits system as the population overgrows. Therefore, the focus of this educational learning quantitative research study is to quantify Houston Harris County population overgrowth for the past five years; quantify the traffic jammed implications the population growth brought with it, and to provide educational methodologies such as DLL and DL on how to symmetrical and systematically enhance the implementations of effective, efficient, and proficient scalable technologies and the supports for organizational learning approaches. (p. 31)

Now, as the populations of all cities in the United States continue to grow endlessly, the human behaviors and activities have impacted the most recent hurricanes and tropical storms' volumes and damages have become overwhelming. For example, year by year in the US, the intensities of hurricanes, tropical storms, or even tropical depressions have become greater that ever; additionally, the financial and humanitarian damages (such as deaths) that come with them cannot be overemphasized. As such, the focus of the research study was to investigate the

financial damages and deaths created by the hurricanes, tropical storms, or even tropical depressions in the past 10 years in the Atlantic ocean's countries especially in the United States of America.

GENERAL HISTORICAL BACKGROUND AND THEORETICAL FRAMEWORKS

As stipulated by Ngenge et al. (2017),

In relationship to scalability of any technological developments and the supports of any organizational learning process, it is argued that for any organization to be successful, the organization should and must adhere to certain types of organizational learning processes (see Hubel, 1991; Grantham, 1993). They summed that for any organizations to be successful, they should and must find ways to implement three proven types such as;

1. **Single-Loop Learning (SLL)**
2. **Double-Loop Learning (DLL), and**
3. **Deutero-Learning type (DL).**

By definition and implementation, the Single-Loop Learning process is designed for organizations to identify errors as they occur and correct them immediately or systematically by developing current policies goals and objectives (see Dodgson, 1993; Fiol & Lyles, 1985; Senge, 1990; Mason, 1993). From a holistic viewpoint, Dodgson stressed that SLL “can be equated to activities that add to the knowledge-base or firm-specific competencies or routines without altering the fundamental nature of the organization's activities” (p. 375). This simply means that SLL are designed to address any organization goals and objectives symmetrically and systematically while immediately overhauling the purpose of the organizational existence.

It should be noted that however important SLL maybe when dealing with Scalable Technology & Support for Organizational Learning process, it appears that the City of Houston Harris County, Texas did not effectively, efficiently, or even proficiently implement these suggestions as the populations' growths increases. This practically fell against the historic dynamics of workable and scalable SLL principles. In fact, it has been argued that “SLL has also been referred to as lower-level learning” (p. 803) process (Fiol & Lyles, 1985). On the contrary, it is arguable that it is adaptive learning or coping by Senge (1990), and non-strategic learning by Mason (1993). As debatable as it maybe, SLL has been successfully implemented for years and it appears it is lacking in Houston Harris County, Texas in addressing its populations' growth in relationship to its current traffics jams in the major highways and beyond hence this topic was selected to be reviewed, identify its problems, and assessed its possible applications that could bring some positive social changes to all Houstonians.

Secondly, by definition and implementation, the Double-Loop Learning process is designed for organizations to the “detection and correction of errors, the organization is involved in the questioning and modification of existing norms, procedures, policies, and objectives. DLL involves changing the organization's knowledge-base or firm-specific competencies or routines” (p. 375). This means in a DLL appears to be doubled folded because it identifies and corrects errors as they come; get the whole organizations involved with the process, and changes organizations' knowledge-based or firm-specific competencies or routine. It further means that symmetrical and systematical multi-dimensions are approached collectively. Additionally, Fiol and Lyles (1985) believed that DLL is “also called higher-level learning” they furthermore believed that DLL expands organizations' capacities,

capabilities, and abilities to become effective, efficient, and proficient finally. Senge (1990) on the other hand, argued that DLL is a strategic learning process; while Mason defined a strategic learning "the process by which an organization makes sense of its environment in ways that broaden the range of objectives it can pursue or the range of resources and actions available to it for processing these North Asian International Research Journal of Social Science & Humanities ISSN: 2454-9827 Vol. 3, Issue 10, Oct. 2017 North Asian International research Journal consortiums www.nairjc.com 33 objectives" (1993, p. 843). In other words, the goals and objectives of the stakeholders, the people in general, and the environments should and must be met for the DLL to be effective and efficient across the board.

Therefore, the lessons learned, and insights gained from reviewing DLL are fundamental and it is a way to proficiently scale any organizational growths and how to make some changes as needed immediately or thereafter. However, this is lacking with Houston Harris County, Texas when dealing with populations' overgrowths and the development of mass transportation methodologies. This is the assumption, perception, and presumption because as the population grew, there were no proficient, effective, or efficient ways to positively develop needed transportation methodologies or even scale the degrees of growths versus the implications associated with traffic jams and that was why this topic was selected. Furthermore, this goes against the principles and objectives of Scalable Technology and Support for Organizational Learning process. For instance, scalability by general agreeable or disagreeable understanding is to develop and implement marginal propensities to identify growths positively or negatively or decreases associated with any technological development. This is missing in Houston Harris County, Texas. Furthermore, the possible lack of support for organizational learning processes is yet another missing link yet this topic was selected in this study.

Finally, Deutero-Learning (DL) usually occurs whenever organizations learn the proper ways to conduct single-Loop learning (SLL) and double-Loop learning processes collectively and periodically. When dealing with using DL as a learning tool, it is argued that the first two forms of learning process will not occur if the organization is not aware that learning should take place. For example, Nevis et al. (1995) affirmed that awareness of ignorance motivates learning. Nevis et al. stressed that "identify seven different learning styles and ten different facilitating factors that influence learning. For example, one of the facilitating factors is identifying the performance gap between targeted outcomes and actual performance..." (p. 1). Additionally, they emphasized that one of the ways in identifying the performances' gaps between targeted outcomes and actual performance was missing in Houston Harris County, Texas for possibly the past ten plus years as its population grew.

Houston Harris County, Texas leaderships failed to notice the gaps in targeted outcomes and actual performances of the major highways as well as the visible complications and implications as the population overgrew. The leadership attitudes fell perfectly under the ideology of DL because Argyris and Schon (1978) and Argyris (1994) suggested that "This awareness makes the organization recognize that learning needs to occur and that the appropriate environment and processes need to be created. This also means recognizing the fact that lengthy periods of positive feedback or good communication can block learning..." (p. 1)...Houston Harris County, Texas leaderships knowingly or unknowingly failed or refused to address the incoming populations' growth dilemmas, or they collectively lacked the identifications of the marginal propensities of the organizational supports for scalable technological developments. As such, DLL and DL were selected to be used as the lens of analyses of data in this educational learning process quantitative research study. Additionally, as summed by Zuboff (1988), Nevis et al. (1995), and Nevis (1994);

Double-loop and deuterio learning are concerned with the why and how to change the organization while single-loop learning is concerned with accepting change without questioning underlying assumptions and core beliefs. Dodgson states that the type of organizational learning also depends on where in the organization learning occurs. Thus, learning can occur in different functions of the organization such as research, development, design, engineering, manufacturing, marketing, administration, and sales. (pp. 84- 85) These reasons among others, were why these educational learning processes were selected as lens of analyses of this quantitative educational learning research study.

These reasons, among others, were why these educational learning processes were selected as lens of analyses of this quantitative educational learning research study. (pp. 31-34)

In light of the above, the question now becomes are we saying that the lack of implementations of scalable technologies in the majority of cities in the US among with those cities within the Atlantic Ocean have complicated the effects of hurricanes, tropical storms, or even tropical depressions in the past 10 years? That was the focus of this research study.

Since this was the finale of the sustainability research study, the below remain unchanged as pinpointed by Ngenge et al. (2017);

LITERATURE REVIEW

Evidence has shown that scalable technology and support for organizational learning is a must, and it should be continually implemented as the environment changes. That is not the case with Houston Harris County Texas because the leaderships in these areas did not see coming. For example, for the past 30 plus years' elections, Houstonians have voted public train mass transits transportation systems down due to some unknown reasons and objectives. As Houstonians continue to vote against any effective public transportation methodologies, the city continued to grow and the ability to implement such policies efficiently or proficiently is possibly too late and maybe costly due to lack of future outlooks for scalable technologies and lack of supports for organizational learning processes. For example, Grantham (1993) states such costs could include loss of market share, loss of competitive edge, loss of intangibles such as reputation and the ability to attract only the best and brightest minds. This is possibly where Houston is today because as the population growths become compacted and more complicated, it is harder to build high frequency transportation methodologies or approaches on top of people who are not ready to relocate for whatever reasons. Based on these experiences with Houston Texas, it is advisable that planning for the future outlooks, instead of procrastinating for unknown is a must when dealing with the ability, capacity, and capability to sustain any changes in scalable technologies and support for the organizational learning processes.

North Asian International Research Journal of Social Science & Humanities...Atatah and Kisavi-Atatah (2015); There is no doubt that the roads' conditions in Houston Harris County, Texas along with the surrounding areas and counties are currently in deplorable conditions. The deteriorations associated with the "roads state of mind" are unimaginable in all fields. First, endless statistics have shown that Houston Harris County, Texas leads the nation in fatal driving while intoxicated (DWI) accidents. Houston Harris County, Texas has also led the way in commercial vehicle accidents since 2009 till date according to Olsen (2014) [1], investigative report in Houston Chronicles. In addition, it should be noted that the majority of the commercial vehicles' accidents are attributed to

the overnight booms of oilfield related businesses along with natural gas associated with hydraulic fracking operations (Schneider, 2014) [2]. (p. 101)

This means the over population of the city of Houston Harris County, Texas for the past five plus years has created unmanageable situation due to ineffective, inefficient, and possibly in proficient scalable technologies and organizational learning approaches. As the population grows, Houstonians somehow find ways to overcome the associated defaults as the city leaderships scramble on how to systematically overcome it. However, coming it without any future outlooks sustainable methodologies is easier said than done. Furthermore, as an aged Houston adage says, "Houston we have a problem." The question now becomes, how do we resolve the congestion of roads and highways associated with the overpopulation in Houston Harris County, Texas by implementing workable and sustainable methodologies without breaking the bank? That is the focus of this quantitative educational research study.

Additionally, Atatah and Kisavi-Atatah (2015) study found that the implications of population overcrowding in Houston Harris County, has created other problems for Houstonians beside the abovementioned. For example, in 2015, they found that the population overcrowding of Houston Harris County, Texas created increased and congested road traffics; additional road accidents, and more interestingly increased road traffics' deaths between 2010 and 2013 and possibly beyond. Therefore, the implications associated with population overcrowding without any sustainable workable methodologies, cannot and must not be overemphasized at any rate. However, the pains and discomfort associated with these overwhelming outcomes have become a matter of everyday life experiences for many Houstonians with no solutions.

As such, the focus of this quantitative educational study is to analyze the recent population increases in Houston Harris County, Texas between 2011 and 2015; as well as to quantify the associative/correlations dread traffic implications and how to fundamentally implement some sustainable and scalable immediate, short-term, midterm and long-term solutions. North Asian International Research Journal of Social Science & Humanities ISSN: 2454-9827 Vol. 3, Issue 10, Oct. 2017 North Asian International Research Journal consortiums www.nairjc.com 36 Scalable technologies and supports of organizational learning process is obviously used in many agencies and organizations as to stay on top of predictable and unpredictable occurrences. For example, Zeng et al. (2013) conducted an organization community partner Health Net (CPH) on how proficient, effective, and efficiently share information with Health-Center-Controlled Networks (HCCNs) community health centers (CHC) and rural health clinics (RHC). This study looked into all 16 member organizations of (CHC & RHC) in CPH which were non-profit health care organizations which provided primary health care to underserved population.

The primary goal of this study was to examine the effectiveness of the scalable technologies which were designed for these health care organizations to improve their services to the underserved populations. The study found that while these newly implemented scalable technologies were effective, it is left for the individual organizations to make them more workable and dependable. In other words, the study found that no matter how good any new technologies may be, it is the willingness of the individual organizations to use them proficiently. Finally, the study summed that that the holistic descriptions of the environment, discussions of the collaborations within the "six original individual CHCs to create CPH, the EHR and Data Warehouse projects at CPH, and then explains CPH's on-going operations and new challenges in the context of meaningful use and big data movement" (p. 45).

These findings posed certain limitations as addressed below when dealing with specified scalable technologies and organizational learning process applications.

In fact, while these primary goals of the study were to implement scalable technologies on organizations learning process, it had certain limitations. First, this study did not address how to initiate, develop, and implement...structural public policies, organizational, and leaderships' applications; such as the populations' overgrowths we currently faced in Houston Harris County, Texas. Additionally, the study did not address how to proficiently overcome the traffics dreadlocks we currently face in Houston Harris County, Texas. As to mention a few, the study did not address how to systematically scale and project future Houston Harris County populations' growth developments and how to plan and implement scalable applications. Above all, the study did not address scalable technologies and organizational learning processes which could eventually benefit many Houstonians; and that is the focus of the scalable technologies and supports for organizational educational learning study.

When it comes to the continuity of any technological development and existence of previously developed and implemented technologies, certain factors should be addressed and revamped (Casalini, Fipretti, & Pyka (2016). They believed that as to distribute or redistribute any type of technologies into any existing organizations with a centralized control, a holistic redesign maybe be needed and possibly majority of the existing industries may need to be completely reconstructed as to meet the new technological applications. Regardless, Casalini et al. North Asian International Research Journal of Social Science & Humanities ISSN: 2454-9827 Vol. 3, Issue 10, Oct. 2017 North Asian International Research Journal consortiums www.nairjc.com 37 (2016) affirmed that "...a technology and a design philosophy that, albeit superior to centralized control..." (p. 1). They argued that such new technologies may survive so long are playful ideology and the technology of foolishness is implemented. In this case study, they reported that if small firms develop and report novel marketing niche, it enhances their ability for them to survive old and new technological development even though the truth behind their successfulness maybe subject to unconfirmed debates. They concluded that technological ideology is the key factor that determines the success or failure of any organization possibilities. Or the technologies of foolishness as assumed by James March may help such organizations to survive new designs and developments. Basically, this study examines some of the critical factors on how to positively survive new or current technological development. This may be what the organizational leaderships need to acquire to sustain the populations' overcrowding in Houston Harris County, Texas, and surrounding areas. Above all, this city and surrounding areas did not address the proactive ways to sustain scalable technology and the support of organizational learning process which is the primary focus of this study.

When dealing with ways to identify scalable technological developments and organizational supports approaches, Busch, Barzel, and Leuders (2015) explored how to develop scalable continued technological developments in students' academic achievements. The primary goal was to develop student achievement in a formative way that deals with crucial skills for planning carrying out effective mathematics learning lessons. This study followed three evidence-based design principles which were "Continuous Professional Development (CPD) unit has been designed for a statewide official in-service teacher program of the Ministry for Education in Baden Wurttemberg, Germany" (p. 53). The study found that of the 26 investigated pilot study which involved repeated administrated workshops; the teachers show a significant statistical difference in participants' diagnostic competencies in their before and after the training. The study suggests that further investigations/explorations need to be performed on a large-scale basis other than the outcomes of the pilot study. However, this study did not investigate the roles of

populations' growth and their implications on technological developments such as mass transportations transits systems; which is the primary focus of this study. Additionally, Venkitachalam and Willmott (2015) investigated ways to factors shaping organizational dynamics in strategic knowledge management in Knowledge management research and practices. They found that for any learning process to be successful, different dimensions approaches should and must be implemented and repeatedly revisited so as to positive scale its effective for the future. This study did not address the impacts of populations' growths in any environments; which is the primary focus of the study. Studies upon studies have been reviewed and the appeared to be profound limitations and gaps in literatures hence this study should be supported as to eventually bring some positive social changes to many Houstonians and surrounding residents North Asian International Research Journal of Social Science & Humanities ISSN: 2454-9827 Vol. 3, Issue 10, Oct. 2017 North Asian International research Journal consortiums www.nairjc.com 38 (see Well, Uplekar, & Pai 2015; Rathi, Given, & Forcier, 2016; Kantabutra, 2014; Luciano et al. 2015; Potworowski, & Green, 2016 Greenhalgh et al. (2016). The reviewed literature came with certain limitations and gaps which were addressed below.

LIMITATIONS AND GAPS IN LITERATURE

There is no doubt that effectively scale any immediate or preexisting technologies and organizational supports learning can be challenging. However, it comes with certain pros and cons because none was identical when dealing with the quantifications or even the qualifications of technological developments talk less of the organizational supports learning processes. And that is the case in this study. First, the similarities with the literatures reviewed as compared to the proposed quantitative research study showed they dealt with three major factors which were immediate or preexisting technological developments, effective or ineffective organizational supports learning processes and the immediate or delayed costs of inactivates on the hands of leaderships. On the other side, the limitations or gaps in reviewed literatures showed that they did not address populations' overgrowths; they did not address the immediate or delayed complications, associated compartments, and short, midterm, or long-term implications. Furthermore, they did not address the traffics jammed issues Houston Harris County, Texas is previously and currently facing as the implications due to lack of technological developments and lack of organizational supports learning processes specifically in these areas. Also, these studies did not provide any effective, efficient, or proficient ways to resolve these implications faced by many Houstonians and the residents in the surrounding areas. Above all, they did not provide any scalable working tips on ways to financially resolve or even ways to sell these drawbacks to the stakeholders of Houston Harris County, Texas and the surrounding areas which is the primary focus of this quantitative research learning process study. These limitations and gaps posed some fundamental research questions (RQs) to investigate in this study.

METHODOLOGY

In any research study, the design and the selected applicable methodology is critical in obtaining effective, efficient, and proficient results, findings and accurate interpretations of findings and this study is not alone as compared to the above analysis. As such, this study will implement a quantitative methodology dealing with possible already existing secondary data in populations' growths for the past five years and the numbers of cars on the major highways on a daily basis especially on Mondays to Fridays monthly. As contended by Atatah and Kisavi-Atatah in 2015; North Asian International Research Journal of Social Science & Humanities ISSN: 2454-9827 Vol. 3, Issue 10, Oct. 2017 North Asian International Research Journal consortiums www.nairjc.com 39

Houston Harris County, Texas, and surrounding areas by using Non-Experimental Descriptive Statistics measurements design concentrating on Houston data between 2010 and 2013. Non-Experimental Descriptive study statistically examines our secondary data and makes some social scientific senses out of the outcomes of data analyses (see Creswell, 2009; [8] Frankfort-Nachmias & Nachmias, 2000 [9]). (p. 103) This among other reasons was why this quantitative methodology was selected in this learning research study. RESEARCH QUESTIONS (see Ngenge et al., pp. 34-39 for more)

RESEARCH DESIGN

METHODOLOGY

This study used Quantitative Research Study using **Non-Experimental Research Descriptive Statistics** as a way to calculate the differences between dependable and independent variables.

THEORETICAL FRAMEWORK

In addition to the above-mentioned theories, this quantitative research study added “**Social Construction of the Ideology of Reality Theory**”; which pinpoints the reasons why public policies and health policies decisions’ make any valuable decisions during the times of such as crisis hurricanes or fail to make any decisions based on their assumptions against their actual realities’ theory of outcomes (see Berger & Luckmann, 1966 for more).

RESEARCH QUESTIONS

There were two major quantitative research questions (RQs) this research study intended to investigate. The first two RQs deal with collecting scalable quantitative workable data; and the last RQ deals with scalable quantitative learning designs processes.

RQ 1: What are the quantified financial damages of hurricanes’ relationships due to lack of implementations of growths’ scalabilities in the US in the past ten years?

RQ 2: What are the quantified scalable numbers of populations growths’ relationships in the US coastal areas due to lack of scalability in the US in the past ten years?

These two major hypotheses were answered in this quantitative research study based on data collected from National Weather Services (2022).

RESULTS AND FINDINGS OF THE STUDY

Figure 1: Hurricane Cyclone Eye



According to data information collected from National Weather Services (2022);

Over the last decade, at least 100 storms tropical storms and hurricanes have impacted states and territories in the Atlantic basin. Luckily most of these systems caused only minor damage to property and the environment. However, atmospheric conditions proved favorable for some to develop or intensify leading to the complete collapse of economies. Here are the five most devastating hurricanes over the last decade. (para. 1)

Figure 1: Showed the eye of a hurricane cyclone's eye due to the intensity of the atmospheric conditions which favorable to it; and tells you the speed limits as well as the possibilities of what kind of damages it can create whenever its' landfall on shore during its landing especially in a populated environment (See figure 1 above for more).

Figure 2: Dorian



National Weather Services (2022);

Between August 24 and September 10, 2019, Hurricane Dorian made its way across the Caribbean causing damage across the Lesser Antilles, Puerto Rico, the Bahamas, Canada, and the Eastern United States. Abaco Islands and Grand Bahama felt the worst effects of Hurricane Dorian when the system remained stationary over the islands for at least a day. Wind speeds of up to 185 mph (295km/h) were recorded. At least US\$4.6 billion worth of damage was reported after Hurricane Dorian. The official death toll of Hurricane Dorian is 84, however, it's believed to be much higher as hundreds of people, who were reported missing after the storm, have not been found. Parts of Grand Bahama and the Abaco are still uninhabitable. (para. 1)

Figure 2: Dorian indicated that the maximum wind speed was 185 miles per hour which exceeded the known Category 5 hurricane at 10 miles more per hour; with financial damages of 4.6 billion dollars. More than 84 people were killed during Hurricane Dorian and the associative aftermaths' side effects that followed; statistically speaking, the actual number of deaths were/are still debatable today (see Figure 2 above for more).

Figure 3: The aftermath of Hurricane Dorian on the Bahamas



Figure 3: showed the aftermath of Hurricane Dorian between August 24 and September 10 of 2019 in the Bahamas (see Figure 3 above for more).

Figure 4: Maria



National Weather Services (2022);

Between September 16 and October 2, 2017, Hurricane Maria hit Puerto Rico and the Lesser Antilles (Antigua and Barbuda, Dominica, Anguilla, the British Virgin Islands, The Bahamas, and Turks and Caicos Islands) while they were still recovering from Hurricane Irma that had hit weeks before. The most severe impacts were felt on the island of Dominica. Wind speeds of up to 175 mph (280 km/h) were felt in the affected areas, leaving \$96.1 billion in damages in its wake. Hurricane Maria left the affected areas without electricity, clean food, and water for months. At least 3,059 people are known to have died during Maria. (para. 1)

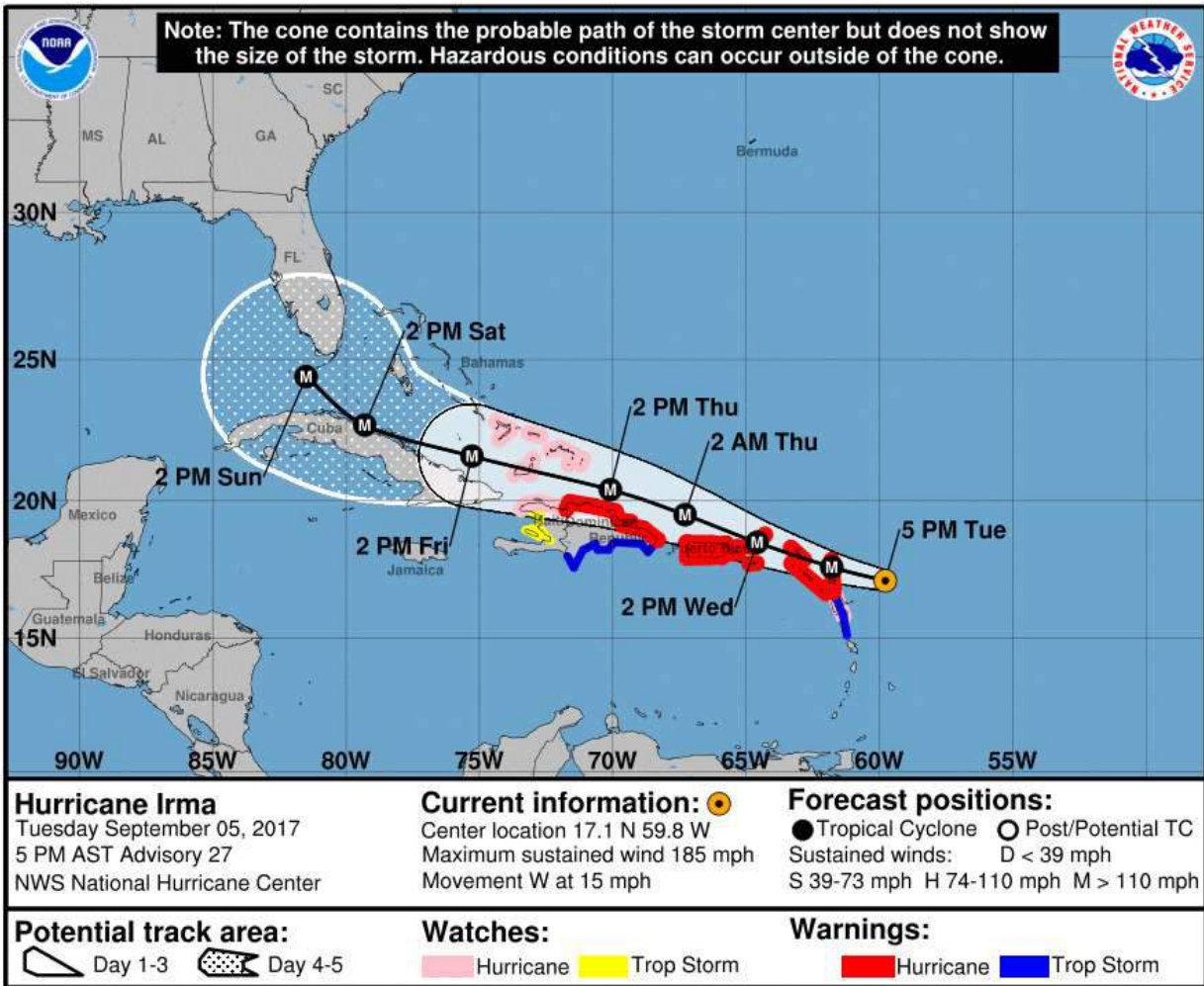
Figure 4: Maria indicated that the wind speed was 175 miles per hour which exceeded the known category 5 hurricane at the tip of category 5 hurricane at exactly 175 miles per hour with financial damages of 96.1 billion dollars. More than 3,059 people were killed during Hurricane Maria and the associative aftermaths' side effects that followed (see Figure 4 above for more).

Figure 5: Dominica after it was ravaged by Hurricane Maria



Figure 5: showed the destructive aftermaths of Hurricane Dorian Between September 16 and October 2, 2017, Hurricane Maria hit Puerto Rico and the Lesser Antilles (Antigua and Barbuda, Dominica, Anguilla, the British Virgin Islands, The Bahamas, and Turks and Caicos Islands (See Figure 5 above for more).

Figure 6: Hurricane Irma



National Weather Services (2022);

Between August 14 and September 14, 2017, Hurricane Irma ravaged the islands of the Leeward Islands (especially Barbuda, Saint Barthelemy, Anguilla, Saint Martin, and the Virgin Islands), Cuba, Puerto Rico, Turks and Caicos Islands, The Bahamas, and Eastern United States. Cuba and Florida felt the brunt of the US\$ \$77.2 billion in damages left behind. Irma was the second major hurricane of 2017 with a wind speed of 180 mph (285 km/h). The official death toll after Hurricane Irma was 134. (para. 1)

Figure 6: Hurricane Irma indicated that the wind speed was 180 miles per hour which exceeded the known category 5 hurricane at the tip of category 5 hurricane at exactly 5 miles per hour with financial damages of 77.2 billion dollars. More than 134 people were killed during Hurricane Irma and the associative aftermaths' side effects that followed (see Figure 6 above for more).

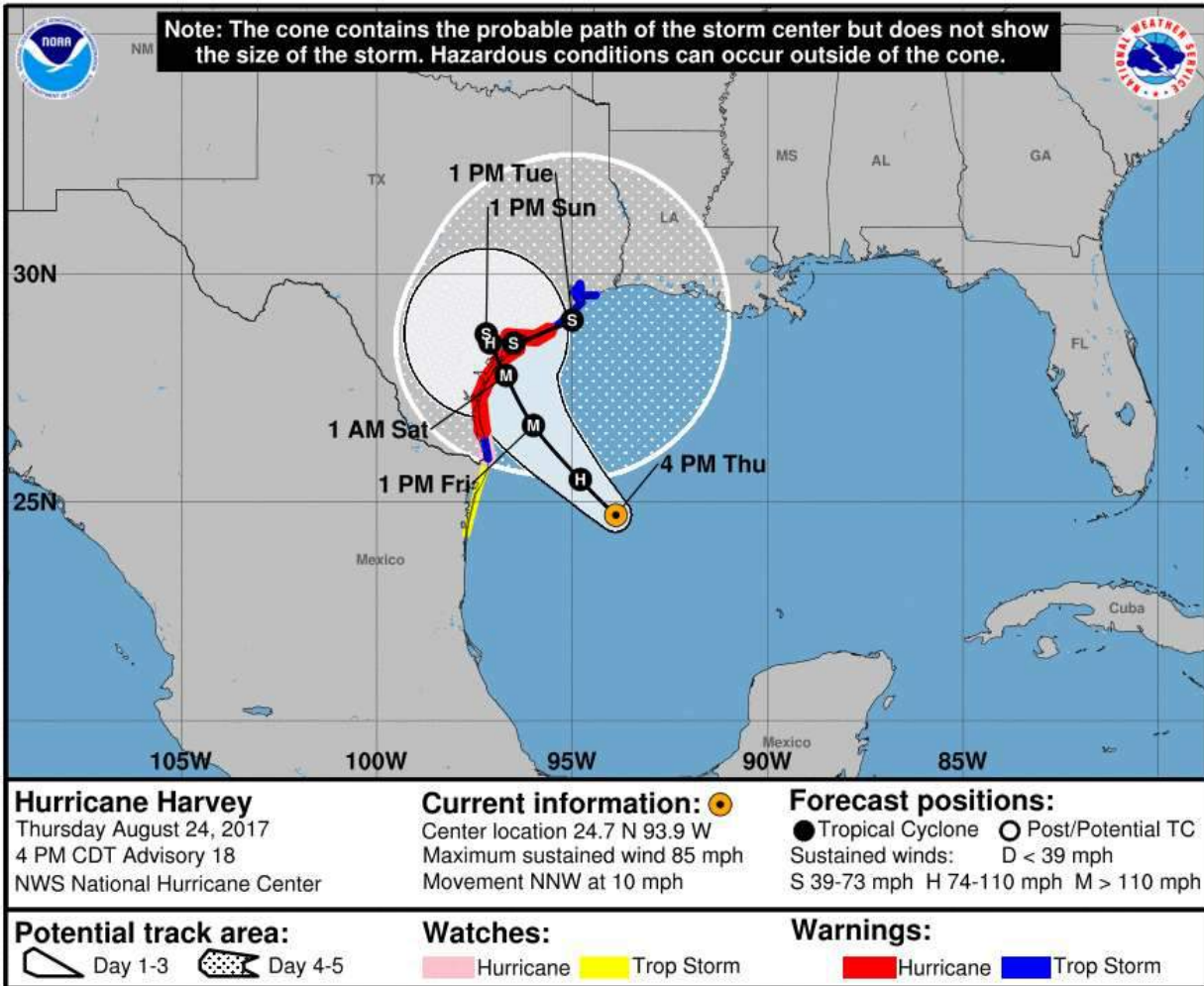
Figure 7: Barbuda was left uninhabitable after it was impacted by Hurricane Irma



(Photo: iStock.com/cdwheatley)

Figure 7: Showed the unbelievable damages and destruction left behind by Hurricane Irma Between August 14 and September 14, 2017 (see Figure 7 above for more).

Figure 8: Hurricane Harvey



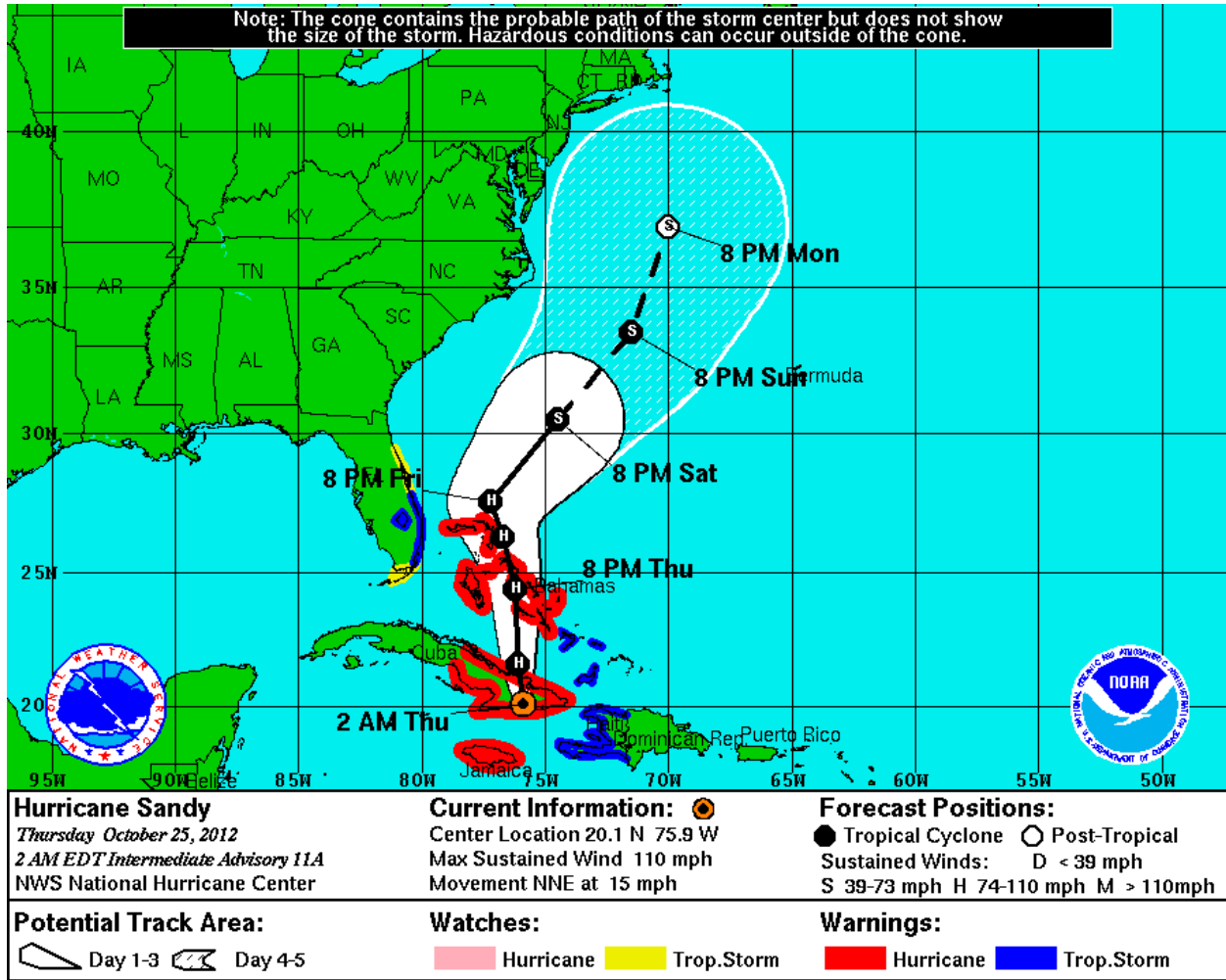
National Weather Services (2022);

Between August 17 and September 2, 2017, Hurricane Harvey left a trail of destruction across the Atlantic. The system impacted the Caribbean as a tropical storm. It intensified to a Category 4 storm before making landfall in the Southern United States. The states of Texas and Louisiana were most affected by Hurricane Harvey. Damages worth USD\$125billion were reported. Wind speeds of 130 mph (215 km/h) were recorded. Officials attributed 107 deaths to Hurricane Harvey. (para. 1)

Figure 8: Hurricane Harvey landfall with that the wind speed was 130 miles per hour which falls within the speed of Category 4 hurricane upon landing with financial damages of 125 billion dollars. While it was/is debatable, more than 107 people were killed during Hurricane Harvey between August 17 and September 2, 2017, and the associative aftermaths' side effects that followed. Additionally, it should be noted that Hurricane Harvey was the second most expensive financial damages created by any hurricanes in the US and the Caribbeans, only second to Hurricane Katrina in 2005 at 161 billion dollars on August 25, 2005, in New Orleans, Louisiana with a landfall of Category 3 with wind as strong as 125 miles per hour. Hurricane Katrina killed directly or indirectly between 1245 to 1833 people according to data statistics obtained from the National Hurricane Center in 2022; which

estimated that 1,833 people were killed by Hurricane Katrina. While the obtained data statistics were still debatable today, Hurricane Katrina remains the second most deadly hurricane since the 1900 Hurricane that consumed hundreds of thousands of people in Galveston, Texas (see Figure 8 above for more).

Figure 9: Hurricane Sandy



National Weather Services (2022);

Between October 22 and November 2, 2012, Hurricane Sandy caused over US\$68.7 billion worth of damage as it travelled across the Atlantic. The United States was the worst affected country. Sandy packed maximum sustained winds of 115 mph (185 km/h). Authorities have linked 233 deaths to the passage of Hurricane Sandy. (para. 1)

Figure 9: Hurricane Sandy landfall with the of wind speed of 115 miles per hour which falls within the speed of Category 3 hurricane upon landing with financial damages of 68.7 billion dollars. More than 233 people were killed during Hurricane Sandy between October 22 and November 2, 2012, and the associative aftermaths' side effects that followed (see Figure 9 above for more).

STAKEHOLDERS ANALYSIS

As affirmed by Ngenge et al. (2017, pp. 40-41),

It is noticeable that these costs grow exponentially in large global organizations that generate a lot of data and need to find ways to learn lessons from their own data and assimilate and adapt to a complex regulatory environment to stay ahead of the competition. Whining dealing with costs, inactivity is the enemy of progress when selecting the stakeholders of any programs. Above all, when dealing with a topic as complex as what we have in our hands, stakeholders' analysis is relatively complex. For example, many Houstonians dread any time they have scheduled or unscheduled appointments to drive through any Houston Harris County highways. Therefore, the stakeholders of the learning study comprise of the employees, customers, leaderships of all associative organizations and regulations in and around Houston Harris County, Texas to make it work. It should be noted that designing any program's success stays in the hands of the future to come; and the future to come is time sensitive which usually determines who the effective stakeholders will be and that is the case in this learning study.

Beside the above, Houston, Texas now stands as the third largest city in the US with approximately additional population growth of almost 70,000 people annually. According to unconfirmed data statistics obtained in 2022, Houston, Texas now stands at 7.2 million residents not counting the immediate surrounding areas. Statistically speaking, this means the need for more affordable housing opportunities for Houston, Texas residents increases as its' population grows. Such desperation often led to building houses in previously condemned underwater or below sea-levels lands, which compromises the impacts of hurricanes, tropical storms, tropical depressions, and even light floodings because majority of such houses were/are built in already condemned lands which sat below sea levels. For example, in one of the most recent debates, majority of insurance companies have classified almost all areas in Houston, Texas as "FLOOD ZONES", which makes it almost impossible to obtain any reasonable house insurance almost impossible for many Houstonians due to the prices and the risks of buying any houses in already classified flood zones by the insurance companies. Additionally, another recent debate between the house builders, the public policies' decision-makers, the political entities, and the future potential buyers should be given a signed full disclosure component prior to buying such flooding's' identified properties. This simply means that the new potential buyers are made to sign a full disclosure document that paraphrases that "***You knowing bought this house in an already known flood zone, already under sea-level zone, or already known condemned land zone; already known below sea-levels lands and you will and agreed to be responsible for majority of unforeseen future natural disasters in this area as they develop***"; unfortunately the desperate residents sign the full disclosures forms with the hopes that the anticipated natural disasters will never come their ways soonest as they buy such properties.

Like Houston, Texas for example, majority of houses in the state of Florida are uninsurable because the insurance companies have to be reinsured themselves as to afford payments from the repeated natural disasters' damages created by "Mother Nature." Recently, the biggest reinsurer in the US is the Lloyd's of London which had warned the US insurance companies that it is becoming unaffordable for their insurance companies' reinsurances because of the repeated billions upon billions of dollars payments annually due to unaffordable associative natural disasters' claims. Similarly, as the stakeholders in Houston, Texas grow, the need for sustainable housing grows, desperations grow, and the marginal propensities of buying properties in already known depressed lands grow

along with some hopes that natural disasters such hurricanes, tropical storms, tropical depressions, or even common simple flooding will not revisit these lands.

STATISTICAL ANALYSES OF THE DATA RESULTS AND FINDINGS

Base on the secondary data statistics collected from National Weather Services in 2022, Hurricane Dorian windfall wind speeds between August 24 and September 10, 2019, was 185 miles per hour which exceeded Hurricane Maria with 175 or 5.4% in windfall wind speeds between September 16 and October 2, 2017. Hurricane Dorian actual properties' damages was 4.6 dillion dollars as compared to Hurricane Maria with properties' damages of 96.1 dillion dollars which was more than Hurricane Dorian at 95.2% properties' damages. Hurricane Irma windfall wind speed was 180 miles per hour between August 14 and September 14, 2017, which was 2.7% miles below Hurricane Dorian but above at 2.7% above Hurricane Maria windfall wind speed with a properties' damages of 77.2 billion dollars which was almost 20% below Hurricane Maria but almost 95% above Hurricane Dorian. Additionally, Hurricane Harvey windfall wind speed between August 17 and September 2, 2017, was 130 miles per hour which was 27% below Hurricane Irma wind speed, almost 30% below Hurricane Dorian wind speed, with a properties' damages of 125 billion dollars which exceeded Hurricane Dorian by 96.3% and exceeded Hurricane Maria by 38% in properties' damages. Statistically speaking, Hurricane Sandy windfall wind speed between August 17 and September 2, 2017, was 115 miles per hour which was also 34.2%% below Hurricane Irma wind speed, almost 38% below Hurricane Dorian wind speed, and almost 12% below Hurricane Harvey with properties' damages of 68.7 billion dollars which was 67% above Hurricane Dorian, but with 11% below Hurricane Maria and 45% below Hurricane Harvey (see figures 1 to 9 for more).

Furthermore, with regard to deaths' tolls directly or indirectly associated with the analyzed Hurricanes, Hurricane Sandy accounted for 233 deaths, the official death toll of Hurricane Dorian is 84, at least 3,059 people are known to have died during Maria, the official death toll after Hurricane Irma was 134the official death toll after Hurricane Irma was 134, and the officials attributed 107 deaths to Hurricane Harvey (see Figures 1 to 9 for more). What was statistically significant about the above data statistics was the windfall wind speeds have no correlations on the deaths' tolls or the dollar amounts properties' damages created by the above analyzed hurricanes for the past 10 years in the US and the Caribbeans. However, what appeared to be statistically significant were the populations' densities of the affected areas, repeated buildings in already known high risks lands, along with lack of EFFECTIVE PREVENTABLE SCALABLE TECHNOLOGY AND SUPPORT FOR ORGANIZATIONAL LEARNING when dealing with assumed but guaranteed incoming Hurricanes, Tropical Storms, Tropical Depressions, or even floodings as to protect its' citizens in the US and Caribbeans' areas. In summation, the analyzed data showed that some hurricanes with Categories 1, 2, 3, or even with Category 4 windfalls wind speeds upon landings, somehow created more properties' damages and death tolls than even Categories 5 hurricanes in the last 10 years. This study signifies that there were significant correlations between proactive preparations for any incoming foreseen and unforeseen hurricanes, tropical storms, tropical depressions, and floodings and the amount of properties damages and deaths' tolls that will occur in the near future. The study suggests that all public policies' administrators, politicians, public health practitioners, public policies' decisions-makers to implement some proactive effective, efficient, and even proficient protocols and applications, when dealing with future in coming natural disasters such as hurricanes, tropical storms, tropical depressions, and floodings in the US and in the Caribbeans.

CONCLUSION AND DISCUSSION

As concluded by Ngenge et al. (2017, p. 41),

In conclusion, this quantitative research provides an indication of dynamics of recent thinking in the field of student learning and educational strategy. This is the case because the lessons learned, and insights gained are always critical in solving or even scaling any immediate or future lingering problems. For example, for more than ten plus years, Houston Harris County, Texas, and surrounding areas have procrastinated on finding the effective ways to resolve the implications and complications in the highways which were created by its populations' overgrowths. Over and over again, ineffective, inefficient, and even proficient applications have been implemented with no success. The roads such as Hwy 59, Hwy 69, I-10, and I-45 among others to mention a few were endlessly expanded and the problems of traffics jams still plague Houstonians and their surrounding residents. This showed that Houston has completely fallen under the lack of using scalable technological developments and organizational learning process for the past 10 years plus based on the reviewed literatures. As popular astronauts' historic saying goes, "Houston we have a problem." And yes, indeed we do. Secondly, according to Late Nights Show Johnny Carson argued in the past during his hosting, "My show is like I-45 in Houston, Texas which you can start the construction; but it never ends" (personal communication). In fact, that still Houston possibly after twenty-something years later. Furthermore, the repeated overwhelming flooding in Houston Harris, Texas and surrounding areas speaks for itself. However, in light of these implications associated with Houston Harris County, Texas populations' overgrowths and the associative traffics jams and repeated flooding, if the proposed quantitative research studies' findings are effectively, efficiently, and proficiently developed and implemented, many Houstonians and surrounding residents should see and experience some positive social changes in no time.

Beside the above conclusion and discussion, this final three-way quantitative research study finds that when comes to sustainability technology and support of organizational learning when dealing with hurricanes, tropical storms, and tropical depressions in the US and in Caribbeans, nothing has been done to tackle their humanistic implications on lives and financial damages. For example, since Hurrricane Harvey in Houston, Texas and surrounding areas, political and public policies decisions makers have done nothing to prevent its' reoccurrences. For instance, more than tens of billions of dollars given to the state of Texas by the US federal government entities to address the aftermaths of Hurrricanes Harvey are still seating in unknown bank and no visibly seen political policies, public policies or even public health policies' applications have been seen in the Houston, Texas and surrounding affected areas. Some state politicians have said that "we are saving the money for a rainy day"; this means we still live in the state of Texas especially in Houston, Texas, and surrounding areas like we did in 2017 when Hurrricane Harvey decimated the cities.

Based on a generalized condition, issues associated with natural disasters such as global warming, excessive rains, droughts, poor foods' harvests, mudslides, erosions, over flowed or dried rivers, creeks, lakes, seas, and oceans along with hurricanes, tropical storms, tropical depressions, floodings, and not to mention tornadoes, were very common worldwide in the past 10 plus years; and the US and the Caribbeans' areas are not exempted from the above humanistic activities' implications. While the facts are noticeable clear to all, many public policies decision-makers have simply overlooked or knowingly ignored them worldwide. For example, in 2012 the south southern region of Nigeria in Delta State was flooded by some unknown sources of waters; however, after a quick brief investigation by Nigeria and Cameroon public policies decisions-makers, the flood was blamed on

Cameroonians' government officials who knowingly opened their southern reservoirs in their country without any proactive warnings about its' implications to them in their country. Once again, exactly 10 years later two months ago in 2022, the process repeated itself; and the recent floodings decimated more than 85% of their south southern Nigeria Deltans' farmers farmlands and the loss of their livestock holdings cannot not be understated. Similar floodings happened in Pakistan also this year. In Houston Harris County, Texas in February 2021, a deep freeze decimated the county due to unpredicted cold weather and lack of planning for the future; and millions of Houstonians and the surrounding areas were left in the dark for days due to power failure in statewide cities and counties. According to unconfirmable data obtained from the state of Texas reports in 2022, 246 people died directly or indirectly; 148 deaths were classified as directly, 92 deaths were classified as indirectly, and six as "possible", using criteria developed by the Centers for Disease Control and Prevention (CDC) to address the disaster. It should be noted that the actual numbers of deaths and cause of deaths remain unknown. What was significant about this study was nothing has been done to address the electrical system failure in 2021 in the state of Texas; and it is predicted to re-occur again this year in December 2022.

Also, the endless lawsuits associated with Hurricane Harvey between residents and US Corp engineers who open the Bakers Cyprus, FM Addick Clodine along Westheimer Road, and highway 6 road's reservoirs against advice from civil engineering experts are still pending till today. Furthermore, since Hurricane Sandy of 2012 nothing sustainable to prevent incoming hurricanes was done by public policies' decisions-makers as to prevent further occurrences; also, this is the same since Hurricane Irma in 2017, Hurricane Maria since 2017, Hurricane Dorian in 2019 and many others just to mention a few (see figures 1 to 9 above for more). Based on the data statistics obtained from the national weather services in 2022 and its' analyses, this answered the two critical research questions in this study that when it comes to preventing lives and extensive damages during further presumed incoming hurricanes, there are negative relationships between dependent and independent variables in this research study. This simply means that public health administrators, politicians, and public policies decisions-makers **LACKED EFFECTIVE PREVENTABLE SCALABLE TECHNOLOGY AND SUPPORT FOR ORGANIZATIONAL LEARNING** when dealing with assumed incoming Hurricanes, Tropical Storms, or even Tropical Depressions as to protect its' citizens in the US and Caribbean's' areas. The study strongly suggests that politicians, public health administrators, and public policies' decisions-makers need to be mindful and comprehensively rethink some positive ways to tackle these brewing unpredicted natural phenomenon as to possibly bring some **POSITIVE SOCIAL CHANGES** to its' citizens.

REFERENCES

- [1]. Atatah, P.E. and Kisavi-Atatah, C.W. (2015). The Impacts of Oilfield-Related Booms and the Overall Safeties Implications in Houston Harris County, Texas, and Surrounding Areas! Open Journal of Social Sciences, 3, 100-117. <http://dx.doi.org/10.4236/jss.2015.312011>
- [2]. Argyris, C. (1994). Good communication that blocks learning. Harvard Business Review, July-August: 77-85.
- [3]. Argyris, C., & Schon, D.A. (1978). Organizational learning: A theory of action perspective. Reading, MA: Addison-Wesley.
- [4]. Berger, P.L. and Luckmann, T. (1966) The Social Construction of Reality: A Treatise in the Sociology of Knowledge. Doubleday & Company, New York

- [5]. Busch, J., Barzel, B., & Leuders., T. (2015). Promoting Secondary Teachers' Diagnostic Competence with Respect to Functions: Development of a Scalable Unit. *ZDM: The International Journal on Mathematics Education*, 03/2015, Volume 47, Issue 1
- [6]. Casalini, A., Fioretti, G., Pyka, A. (2016). Playfulness, ideology, and the technology of foolishness in the creation of a novel market niche for distributed control: The... *Journal of Organization Design*, 12/2016, Volume 5, Issue 1.
- [7]. Creswell, J.W. (2009) *Research Design: Qualitative, Quantitative, and Mixed Methods Approach*. 3rd Edition, Sage Publications, Inc., Thousand Oaks.
- [8]. Dodgson, M. (1993). Organizational learning: A review of some literature. *Organization Studies*, 14/3: 375-394.
- [9]. Frankfort-Nachmias, C. and Nachmias, D. (2000; 2008) *Research Methods in the Social Sciences*. 6th Edition, Wadsworth, New York.
- [10]. Huber, G.P. (1991). Organizational learning: The contributing processes and the literature. *Organization Science*, 2/1:88-115.
- [11]. Kantabutra., S. (2014). Measuring corporate sustainability: a Thai approach. *Measuring Business Excellence*, 05/2014, Volume 18, Issue 2. DOI: 10.1108/MBE-02-2013-0015
- [12]. Kisavi-Atatah, C. W., Atatah, P. E., Branch-Vital, A., & Ngege, W. (2018). PERSPECTIVES OF WOMEN IN NAIROBI KENYA TOWARD MALARIA CONTROL Available at file:///C:/Users/ckisa/OneDrive/Desktop/Bio%20St/GxnEwI_4cMJO5_NME9Wz_tWpT9s_685336.pdf
- [13]. Grantham, C.E., with Nichols, L.D. (1993). *The digital workplace: Designing groupware platforms*. New York: Van Nostrand Reinhold.
- [14]. Greenhalgh et al. (2016). SCALS: a fourth-generation study of assisted living technologies in their organizational, social, political and... *BMJ open*, 2016, Volume 6, Issue 2, DOI: 10.1136/bmjopen-2015- 010208
- [15]. Loop New. (2020). Hurricane Season in the Caribbean. Available at <https://caribbean.loopnews.com/content/live-blog-eyes-ts-gonzalo-it-heads-towards-caribbean-3>
- [16]. Luciano et al. (2015). Organizational Gameplay: The Player as Designer of Character Organizations. *International Journal of Computer Games Technology*, 01/2015, Volume 2015.
- [17]. Mason, R.M. (1993). Strategic information systems: Use of information technology in a learning organization. *Proceedings of the Twenty-Sixth Hawaii International Conference on System Sciences '93*, CA: IEEE Press, 840-849.
- [18]. National Weather Service. (2022). Historical Hurricanes and Tropical Systems. Available at https://www.weather.gov/mob/tropical_events
- [19]. Nevis, E. C., DiBella, A. J., & Gould, J. M. (1995). Understanding Organizations as Learning Systems. *Sloan Management Review*, Winter: 73-85.
- [20]. Ngege, W., Branch-Vital, A., Kisavi-Atatah, C. W., Atatah, P. E., & (2017). A REVIEW OF THE IMPACTS OF HOUSTON POPULATION OVERGROWTHS AND LACK OF EFFECTIVE TRANSPORTATION SCALABLE TECHNOLOGY & SUPPORT FOR ORGANIZATIONAL LEARNING. Available at file:///C:/Users/ckisa/OneDrive/Desktop/Bio%20St/4lw5Wi_908w4k_f3MTQl_ELrR8l_132760.pdf
- [21]. Olsen, L. (2014). Oilpatch Traffic—and Rogue Trucks—Boost Death Toll. Lise Olsen, Investigative Reporter, *Houston Chronicle*, 13 September 2014.

- [22]. Potworowski, G., & Green, L., A. (2016). Training Change Agents in CTA to Bring Health Care Transformation to Scale: The Case of Primary Care Practice...Journal of Cognitive Engineering and Decision Making, 12/2016, Volume 10, Issue 4. DOI: 10.1177/1555343416657237
- [23]. Rathi, D., Given, L. M., Forcier., E. (2016). Knowledge needs in the non-profit sector: an evidence-based model of organizational practices. Journal of Knowledge Management, 02/2016, Volume 20, Issue 1
- [24]. Schneider, A. (2014). Deadly Accidents Involving Trucks Tied to Fracking Operations Surge. Andrew Schneider, 15 September 2014.
- [25]. Senge, P.M. (1990). The leader's new work: Building learning organizations. Sloan Management Review, Fall: 7-23.
- [26]. Venkitachalam, K., & Willmott, H. (2015). Factors shaping organizational dynamics in strategic knowledge management. Knowledge Management Research & Practice, 08/2015, Volume 13, Issue 3.
- [27]. Wells, W. A., Uplekar, M., Pai., M. (2015). Achieving Systemic and Scalable Private Sector Engagement in Tuberculosis Care and Prevention in Asia. PLoS Med... Public Library of Science 12(6), 1549-1676
- [28]. Zeng et al. (2013). Using Electronic Health Records and Data Warehouse Collaboratively in Community Health Centers. Journal of Cases on Information Technology (JCIT), 10/2013, Volume 15, Issue 4
- [29]. Zuboff, S. (1988). In the age of the smart machine. New York: Basic Books.