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A REVIEW OF THE IMPACTS OF HOUSTON POPULATION OVERGROWTHS AND LACK OF EFFECTIVE TRANSPORTATION SCALABLE TECHNOLOGY & SUPPORT FOR ORGANIZATIONAL LEARNING-2: *POPULATIONS AND ROADS RELATED TRAFFIC ACCIDENTS' DEATHS QUANTIFICATIONS*

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ABSTRACT

As stipulated in the initial study, the purpose of this follow-up study was to investigate the effects of overwhelming population growths in Houston Harris County, Texas and the immediate surrounding areas. This study used Single-Loop learning (SLL) process; Double-Loop Learning (DLL) process, and Deutero-Learning (DL) process theories as lens of analyses. This quantification research study investigated the overwhelming populations' overgrowths in Houston Harris County; Texas for the past seven years; and the traffics jams issues associated with the growths, most especially with the vehicles' accidents fatalities. The study found that between 2010 and 2016, Houston Harris County's population overgrowths and the related vehicle accidents' fatalities moved in the same direction. First, population grew from approximately 4.12 million in 2010 to 7.21 million or 43%in 2016; and vehicles' accidents fatalities grew in the same direction from 3060 to 3995 or 23% respectively. This study posed several unresolved implications for all Houstonians and their immediate neighbors. However, if the findings/results of this study are carefully rethink, reexamined, and solutions applications are proactively implemented by public policies decisions makers, they should bring some well needed and well deserved positive social changes to all Houstonians in Houston Harris County, Texas and immediate surrounding areas. ***Key Words:** Scalable, Technology, Supports, Organizational Learning, Populations' overgrowths, Traffics jams, Fatalities, flooding, Vehicles Traffics Deaths, sustainability, double-loop learning (DLL), and Duetero Learning (DL) Quantification.*

INTRODUCTION

In 2017, this study evaluated the effects of overly population growths in Houston Harris County, Texas and immediate surrounding areas as well as its implications and the lack of scalable support for organizational learning. According to Hagel (2009) in Ngenge, Branch-Vital, Kisavi-Atatah, and Atatah (2017), for any scalable application to be successful, "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 on a short run" (p. 31). Furthermore, Ngenge et al. (2017) suggested that 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).

They further suggested that a review of the following literature should shed some lights on how it is proficiently, efficient, and effective done in any environment (see Ngenge et al., 2017; Hubel, 1991; Grantham, 1993; Dodgson, 1993; Fiol & Lyles, 1985; Senge, 1990; Mason, 1993; Fiol & Lyles, 1985; Senge, 1990; Mason, 1993; Nevis et al., 1995; Schon, 1978; Argyris, 1994; Zuboff, 1988; Nevis et al., 1995; Nevis, 1994). They all suggested the most effective applications methodologies on how to periodically resolve human population growths and how to tackle them before it is too late. Furthermore, In Ngenge et al. (2017),

Atatah and Kisavi-Atatah (2015); summed that;

> 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 minds" are unimaginable in all fields. First, endless statistics has 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 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) and (Ngenge et al., 2017). (p. 35)

Based on the historic above data analyses, the growth in Houston Harris County, Texas and surrounding immediate areas cannot and must not be undermined, understated, or underestimated at any rate.

PURPOSE OF THE STUDY

Therefore, the purpose of this study was to investigate the implications of overly population growths and vehicles roads accidents deaths in Houston Harris County, Texas and surrounding areas and to analyze the roles scalable technologies and supports for organizational leadership learning process.

METHODOLOGY

This study extracted secondary data from **Texas Department of Transportation (TDOT) from 2010 to 2016.** These data were fed into **IBM/SPSS Version 21** and the statistical analyses were conducted. The primary concentration of the data analyses was to stick to C**entral Tendencies, Dispersion, and data Distribution measurements** only; which could shed some lights about the overly population growths' effects in Houston Harris, County, Texas and immediate surrounding areas (see Frankfort-Nachmias & Nachmias, 2000; 2008; Creswell, 2009).

This study hypothesized 3 major hypotheses which were;

There are three major quantitative research questions **(RQs)** this proposed research study investigated. The first two **RQs** dealt with collecting scalable quantitative workable data; and the last **RQ** dealt with scalable quantitative learning designs processes.

> ***RQ 1:*** What are the quantified scalable numbers of Houston Harris County populations' growths for the past seven years?
> ***RQ 2:*** What are the quantified scalable numbers of traffic accident deaths in Houston Harris County, Texas for the past seven years?
> ***RQ3:*** What are the quantified scalable working designs when dealing with technological developments and supports of organizational learning processes? (Ngenge et al., p. 39).

This study stipulated that the traffic jams in Houston Harris County, Texas and surrounding areas as the contributory vehicles' traffics accidents deaths factor to Houston Harris in this study's data quantification analyses.

THEORETICAL FRAMEWORK

This study used **Single-Loop learning (SLL) process; Double-Loop Learning (DLL) process, and Deutero-Learning (DL) process t**heories as lens of analyses.

DATA COLLECTION

These available data were extracted from the **City of Houston and surrounding areas database between 2010 and 2016.** These data represented the population growth in Houston Harris, County, Texas and surrounding areas. Additionally, the documented Texas motor vehicle fatal crash statistics were extracted from **Texas**

Department of Transportation (TDOT) from 2010 to 2016.

1) The population of Houston Harris County, Texas in **2010, 2011, 2012, 2013, 2014. 2015 and 2016.**
2) The numbers of fatalities in vehicles' accidents in Houston Harris County, Texas in **2010, 2011, 2012, 2013, 2014, 2015 and 2016.**

DATA ANALYSES AND RESULTS

Table 1: **Houston Harris Co. Pop 2010 to 2016**

Statistics

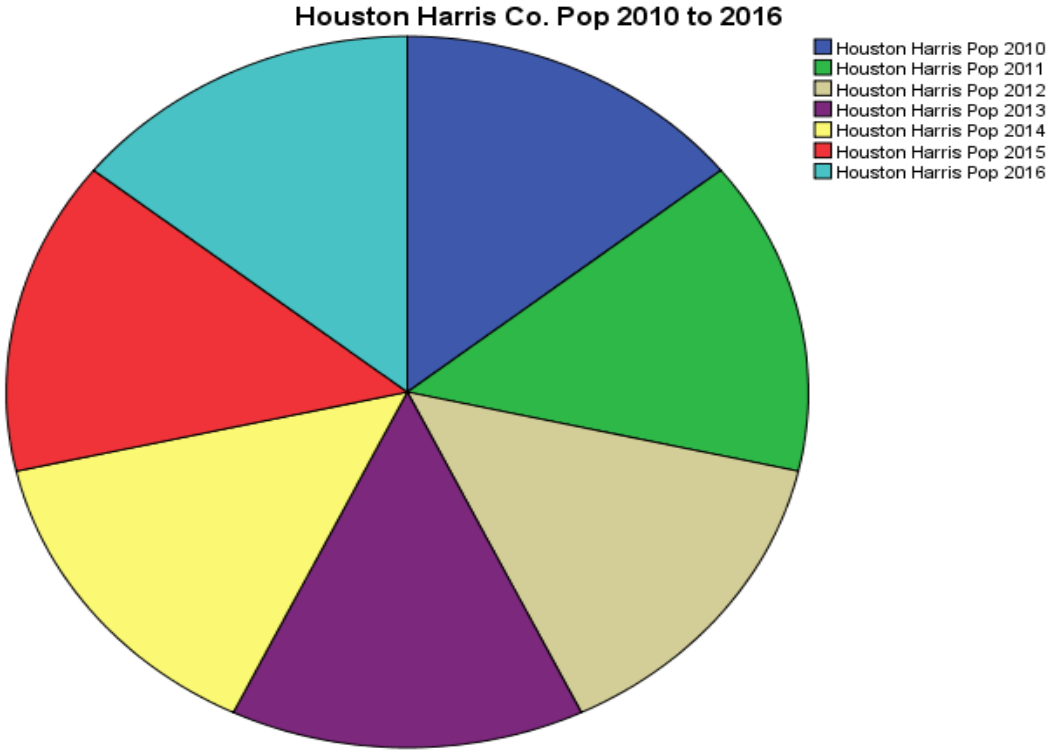
N	Valid	7
	Missing	0
Mean		5.1986
Std. Error of Mean		.48789
Median		4.4300
Mode		4.12[a]
Std. Deviation		1.29085
Variance		1.666
Skewness		.995
Std. Error of Skewness		.794
Kurtosis		-1.012
Std. Error of Kurtosis		1.587
Range		3.09
Minimum		4.12
Maximum		7.21
Sum		36.39

a. Multiple modes exist. The smallest value is shown

Table 2: **Houston Harris Co. Pop 2010 to 2016 Cumulative Frequencies**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Houston Harris Pop 2010	1	14.3	14.3	14.3
	Houston Harris Pop 2011	1	14.3	14.3	28.6
	Houston Harris Pop 2012	1	14.3	14.3	42.9
	Houston Harris Pop 2013	1	14.3	14.3	57.1
	Houston Harris Pop 2014	1	14.3	14.3	71.4
	Houston Harris Pop 2015	1	14.3	14.3	85.7
	Houston Harris Pop 2016	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Figure 1: **Houston Harris Co. Pop 2010 to 2016 Color Coded Pie Chart**



As shown, **Table 1**, **Table 2**, and **Figure 1** indicated the population mean **(*M*)** in Houston Harris County Texas and surrounding areas to be 5.20 million, the minimum and maximum were 4.12 and 7.21 million respectively. The data statistics variance ***(V)*** was 1.7. The standard deviation **(*SD*)** was 1.29 while the Standard Error of Mean ***(Std.EM)*** was 0.49 and the cumulative data analyses showed no messing data as shown in tables 2 due to 100% representations (see **Table 1**, **Table 2**, and **Figure 1**as shown). These data showed that Houston Harris County, Texas and surrounding areas' population rose from **4.12 million to 7.21 million** or approximately **43% from 2010 to 2016** in population increase as shown above.

Table 3: **Houston Harris Co. Traffic Accidents' Deaths 2010 to 2016**

Statistics

N	Valid	7
	Missing	0
Mean		3517.15
Std. Error of Mean		122.87
Median		3479.0
Mode		3060.00[a]
Std. Deviation		325.065
Variance		105667.143
Skewness		.295
Std. Error of Skewness		.794
Kurtosis		-.626
Std. Error of Kurtosis		1.587
Range		935.00
Minimum		3060.00
Maximum		3995.00
Sum		24620.00

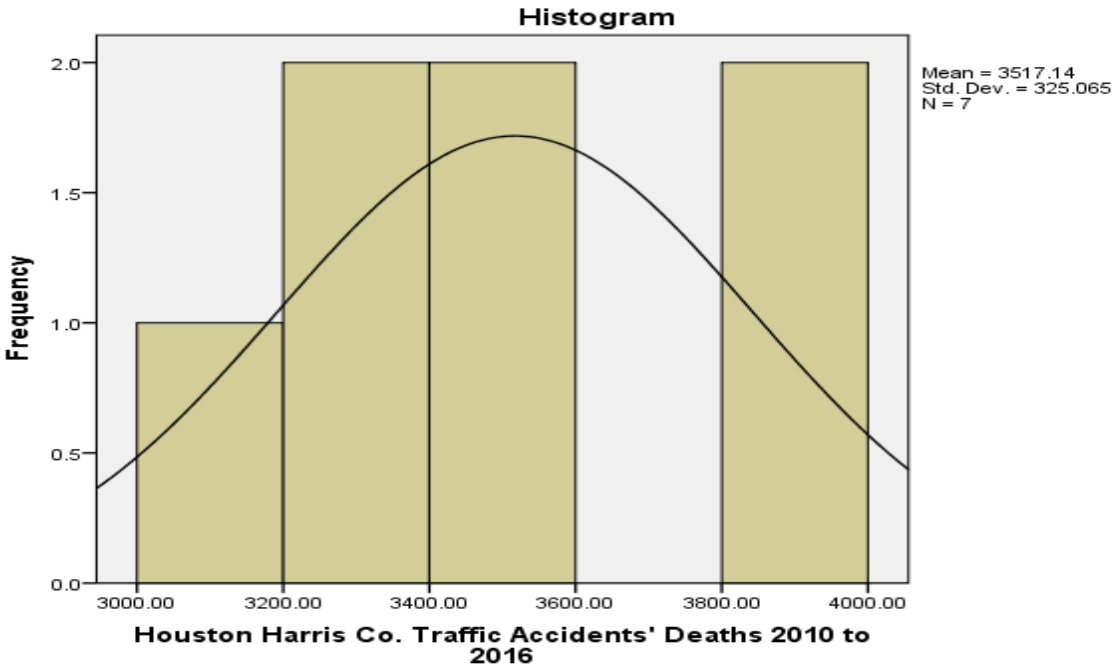
a. Multiple modes exist. The smallest value is shown

Table 4: Houston Harris Co. Traffic Accidents' Deaths 2010 to 2016 Cumulative

Houston Harris Co. Traffic Deaths 2010 to 2016

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Houston Harris Traffics Deaths 2010	1	14.3	14.3	14.3
	Houston Harris Traffics Deaths 2011	1	14.3	14.3	28.6
	Houston Harris Traffics Deaths 2012	1	14.3	14.3	42.9
	Houston Harris Traffics Deaths 2013	1	14.3	14.3	57.1
	Houston Harris Traffics Deaths 2014	1	14.3	14.3	71.4
	Houston Harris Traffics Deaths 2015	1	14.3	14.3	85.7
	Houston Harris Traffics Deaths 2016	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

Figure 2: **Houston Harris Co. Traffic Accidents' Deaths 2010 to 2016**



As shown, **Table 3**, **Table 4**, and **Figure 2** indicated the leading cause of death in Houston Harris County Texas and surrounding areas between 2010 and 2016. Table 4 showed 100% frequencies in 7 years, 14.3 in percent, and valid percent, and 100% in cumulative percent. In seven years, the **(*M*)** was 3517 while the **(*Md*)** was 3479, the **(*Min*)** was 3060 and the **(*Max*)** was 3995 vehicles' incidents deaths in Houston Harris County Texas. Furthermore, **Table 3**. The **(*Std. E*)** was 122.87, but the **(*Std. D*)** was 325.07 which indicated a statistical significant differences increase from 3060 in 2010 to 3995 or 23% increase in 2016 (see **Table 3**, **Table, Table 4**, & **Figure 2**) as shown above.

DISCUSSIONS AND CONCLUSIONS

In summary, it is fair to pinpoint that many scholars and ordinary Houstonians have argue that the paradigm of Houston Harris County, Texas and surrounding areas over population growths for the past 10 plus years, had a correlation with the mentalities of the state, cities, districts, and local leaderships' "open arms invitations" to oil and gas investors and others without any workable public policies' plan to tackle the implications. Today, it is unprecedented and disturbing; above all, failure to wisely implement simple economical laws or theories as analyzed above, will surely indicate the beginning of the oil burst, like what we all have experienced in the early 1980s internationally, but, only time will tell. As overwhelmingly stipulated in Atatah and Kisavi-Atatah (2015);

> Today, it is unprecedented and disturbing; but, failure to wisely implement simple economical laws or theories as analyzed above, will surely indicate the beginning of the oil burst, like what we all have experience in the early 1980s internationally, but, only time will tell. (p. 114)

This stipulation can be systematically and symmetrically tied to the continued and continuous population over growths in Houston Harris County, Texas and surrounding areas for the possibly the past 10 years. There is no doubt that Houston Harris County, Texas and surrounding areas' overly population growths and effects are unequivocally fundamental across the board. **Even more disturbing, since the oil burst occurrence in late 2014 and early 2015, Houston Harris County, Texas and surrounding areas' populations continues to grow.**

In fact, the implications these overly population growths brought with them, such as increased vehicles' accidents deaths, overreached and unaffordable homes for native Houstonians, and traffics jams to mention a few, cannot and must not be undermined or understated. Also, the applications of improvements' theoretical frameworks as stipulated by Ngenge et al. (2017) such **SLL, DLL, and DL** are still lacking (see Well, Uplekar, & Pai, 2015; Rathi, Given, & Forcier, 2016; Kantabutra, 2014; Luciano et al. 2015; Potworowski, & Green, 2016

Greenhalgh et al., 2016; Creswell, 2009; Frankfort-Nachmias & Nachmias, 2000) are nowhere to be found. From a general standpoint, the application of scalable technologies and support for leaderships' organizational learning processes are practically missing in Houston Harris County, Texas and surrounding areas as a whole.

However, there is hope; due to the visitation of **Hurricane Harvey** because for the first time in a while, state, cities, and local public policies administrators have all agreed that something different needs to be implemented; rather than applications of old failed ineffective, inefficient, and in proficient applications and approaches. **Note that Houston public administrators have voted down various trains mass transits transportations applications down for the past 35 plus years for some unknown reasons.** Therefore, **Hurricane Harvey** unscheduled visitation to Houston Harris County, Texas and surrounding areas in late August 2017 spoke for himself; therefore, **RQ 3** could not be addressed in this study. In fact, this will be addressed in the final follow-up research study on these prevailing unresolved questions faced by Houstonians and immediate neighbors. In fact, the overly population growths were obvious; and the implications they brought with them were and are still overwhelming. Furthermore, majority of the constructions, reconstructions, and expansions of Houston Harris County, Texas and surrounding areas highways such as **Hwy 59, Hwy 69, I-10, Hwy 290, Hwy, 610, Hwy 6, I-45 and other connective roads to mention a few, are yet to be completed; therefore, "Houston We Have A Problem"** as historic **NASA** astronauts once stressed from space whenever something goes wrong with their space shuttles. Yes indeed, **Houston we have a problem.**

In conclusion, as previously summed in Ngenge et al. **(2017);**

> … 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 develop and implemented, many **Houstonians and surrounding residents should see and experience some positive social changes in no time.** (p. 41)

The summation of the study remains the same as above because the primary purpose of this study among others was to shed some colorful lights about the scale of public policies' effects, public health effects, environmental effects, regional effects, political effects, and the lack of the overwhelming leaderships' applications. This study also shed some lights that when it comes to **sustainability, scalability, Single-Loop Learning (SLL), Double-Loop Learning (DLL), and Deutero-Learning (DL) types** were completely lacking with leaderships. Above all, these endless unequivocal fundamental identifications and quantifications of these

overwhelming effects by this study should eventually create some effective, efficient, and proficient proactive interventions for all Houstonians and surrounding areas. These assumed proposed interventions **should bring some positive social changes to all Houstonians and the immediate surrounding areas.**

RECOMMENDATIONS OF THE STUDY

This study copied the initial recommendations of Atatah and Kisavi-Atatah (2015) study that pinpointed the initial reasons for Houston Harris County population over growths and its implications among others.

Recommendations for the City of Houston Harris County Leaderships

1) Both the city and the county leadership should collaborate in resolving the overnight implications created by the oilfields drilling companies in Houston Harris, Texas and surrounding areas.

2) Secondly, they should allow road law enforcement officers to be more proactive rather than reactive to keep our roads safer for all native and new Houstonians.

3) The leaderships should effectively, efficiently, and proficiently use their portion/s of proposition 1 funds in addressing the impacts created by oil field drilling companies in the areas.

Recommendations for the State of Texas Leaderships

1) Texas leaderships should understand that the oil drilling companies' leaderships has systematically forced themselves into certain drilling areas such as Denton, Texas to mention a few which needs to be addressed.

2) Texas leadership should compel oil drilling companies to be transparent to all in their drilling areas and beyond.

3) Texas leadership should compel the oil drilling companies to ensure that all their commercial and private vehicles are roads ready.

4) Texas leadership should compel Texas Department of Public Safety (DPS) to stiffen up qualifications requirements in obtaining private and commercial driver licenses in the state of Texas.

5) Finally, Texas leadership should and must pay attention to the public approval of proposition 1 in the recent midterm election by utilizing the approved funds efficiently, effectively and proficiently in addressing the quagmires created by the oil field drilling companies in the state of Texas. (p. 116)

These recommendations will surely reduce some of the population over growths and associated implications in Houston Harris County, Texas and surrounding areas.

However, in addition to the above study's historic recommendations, this study also recommends the followings;

1. Houston leaderships should find ways to expand the **Metro Light Rail Transportation Transit System** as to unequivocally accommodate residents from the city to and fro the immediate surrounding areas as to reduce immediate roads jams during work hours.
2. Houston leaderships should find ways to accommodate public and private organizational leaderships to experiment with "**four cards work hours' shifts**" such as **6 am to 3 pm, 7am to 4 pm, 8 am to 5 pm, and 9 am to 6 pm;** which should significantly reduce the numbers of vehicles in the already overly busy streets; at the same time daily in Houston Harris County, Texas and surrounding areas.
3. Houston leaderships should find ways to educate the public and private organizations leaderships **about the importance of scalable technologies and supports of organizational learning process.** And finally,
4. Houston leaderships should find ways to implement **sustainability and scalability processes such as Single-Loop Learning (SLL), Double-Loop Learning (DLL), and Deutero-Learning (DL) types** as to be effective, efficient, and proficient for years to come.

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CONFLICT OF INTEREST

We share no conflict of interest in this study.

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