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ADAPT

EDUCATION OR RECREATION: AN INQUIRY INTO THE MOTIVES OF EUROPEAN EDUCATIONAL TOURISTS IN THAILAND (THE CASE OF PHUKET)

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REAL ESTATE 5.0: SYNTHETIZING THE NEXT GENERATION OF BUILDINGS

EU Business School

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Benjamin Franklin

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FOREWORD

The year 2020 - in hindsight has been a watershed year and will remain an unforgettable year for most of us. As we write this, the ongoing Covid-19 pandemic still raging in many parts of the world, has claimed more than a million lives and left the livelihoods of many more in jeopardy. It has been manifestly catastrophic for the economy and for many businesses, as it is becoming clearer that many may not survive the onslaught. The pandemic has also led to the erosion of democratic values and fundamental rights – much fought for in many parts of the world, by placing greater burden on the poor, minorities, and the marginalized. It has overburdened the healthcare sector and exposed the fragility of our values, institutions and mechanisms. Governments, meanwhile, have had to experiment and scramble to find a balance between curbing the spread of the virus through various interventions/restrictions on one hand, and to normalize human activity on another. Hopefully the successful rollout of effective vaccinations (now in sights) and treatments by early next year does provide a glimmer of hope. But for now, it is sad but safe to predict that we will end 2020 on a low.

However, the year has also portrayed stories of human kindness, hope, resoluteness, and solidarity. The pandemic has inadvertently championed the spread of digital transformation that has allowed unprecedented human collaboration and adaptation. Digitalization has transformed how we work; the way we work, how we interact; how we meet; and how we conduct our daily activities. The pandemic has thrust us back but into-the-future, giving us the opportunity to rethink our existing social, political, and economic models. What will the world look like in a few years? How do we educate ourselves? How do we interact with the economy, as well as with ourselves? How do we reskill and upskill the current workforce? What will be the future of work, and how do we adapt to the new realities? At ONResearch, we have been able to positively adapt and even expand our horizons during this period. Through increased digitalization, we have been successful in engaging more stakeholders in our pursuits; further proliferate our ideas; and benefitted from the collaborations made possible.

We intend to carry many of these transformations into the future.

Suddha Chakravartti

Editor-in-Chief

TABLE OF CONTENTS

ON RESEARCH Vol.5

EDUCATION OR RECREATION: AN INQUIRY INTO THE MOTIVES OF EUROPEAN EDUCATIONAL TOURISTS IN THAILAND (THE CASE OF PHUKET)

Anastasia A. Maga & Peter E. Nicolau

ABSTRACT: *In this study, we explore the topic of educational tourism and incoming students' motivations governing their choice of study location as well as their perception of the chosen location and the willingness to return in the future. We define educational tourism as 'all learning activities undertaken outside of home geographical environment within a duration between 24 hours and 12 consecutive months' (Maga, Nicolau, 2018a). The context of the study is Phuket, Thailand. The study is qualitative and interpretivist in nature, it is conducted on the materials on in-depth interviews with 11 incoming undergraduate students from Europe at the location of a local university. The findings indicate that first of all, all respondents fall within the educational tourism category, nether one qualifies for longer term academic mobility category (academic migration) (1); secondly (2) Phuket was not the students' first choice of study destination; thirdly (3) in the tourism-first-education first dichotomy, all of the respondents inclined to define their motive as tourism-first; fourthly (4) most students consider education in Phuket easy but effective; fifthly (5) none of the respondents verbalized an intention to return to Phuket for educational or work purposes, however would recommend the location for educational tourism to their peers; as to the intent to return to Phuket for tourism and recreation the opinion is divided; sixthly (6) students perceive the location as 'cheap' and tend to spend more on food and entertainment and travel than at home with the mean value of the average local income. Finally our findings support previous research in the conclusion that educational tourism tends to be driven by a general tourism trigger, and governed by the price factor, the main motive being tourism, not education; however, our results don't support the body of research on the economic value of educational tourism, we find that price-driven educational tourists make a very little contribution to the local economy.*

KEYWORDS: **academic mobility, educational tourism, tourism destination, interpretation, case study.**

Phuket is a southern province in the kingdom of Thailand consisting of the Phuket Island and some smaller Islands off the coast; it belongs to the Andaman Sea. It has long been a favorite tourist destination in South-East Asia; also named one of the top leisure destinations in the world in Mastercard's 2018 Global Destination Cities Index ranking number 12 (Mastercard, 2018) with the average of 300,000 incoming tourists per month (MOTS, 2017). In total, the tourism sector in Thailand directly and indirectly contributes 20.6% of GDP (Turner, 2017) or over $80 billion USD.

Parallel to that, Thailand is also a popular destination for academic mobility, with the total number of incoming students in tertiary education exceeding 31,000 people in 2016 and the average annual growth rate of over 19% in the period of 10 years between 2006 and 2016 (UNESCO, 2109).

In this study, we concern ourselves with the combination of the aforementioned sectors in Thailand, and namely Phuket. We chose Phuket because as it is the tourist destination leader with respect to recreation and beach life; however it remains undervalued by international students. According to the statistics by the 'X' university, its Phuket Campus had only 93 international students in 2016 ('X', 2019) and during the period of observation (fall 2018) only 34 international students were enrolled in various programs at 'X', Phuket. It must be mentioned that 'X' is the only tertiary level institution in Phuket offering international programs, hence it is the only one to have educational tourists on campus, so we limited our target population to 'X'. Educational tourism (ET) is defined as 'all learning activities undertaken outside of home geographical environment within a duration limit of between 24 hours and 12 consecutive months' (Maga, Nicolau, 2018a); thus we are mainly looking at tertiary level ET experiences, which are easily measured through 'X' statistics. Hence, our research based on results acquired from 'X' students can be considered indicative of the ET parameters for Phuket.

RESEARCH QUESTIONS AND OBJECTIVES

Our study is both exploratory and explanatory in nature as we are aiming at exploring the educational tourists visiting Phuket and explaining their behavior. Thus the research has two main questions (RQs):

RQ1: Why do incoming international students choose Phuket as their academic mobility destination?

RQ2: How do the incoming international students evaluate their ET experience in Phuket?

The stated questions call for achievement of the following **research objectives** (ROs):

RO1: Identify incoming international students in Phuket as educational tourists.

RO2: Give a characteristic of the educational tourists in Phuket.

RO3: Explain the students' intent for educational travel.

RO4: Identify the students' motives for choosing Phuket.

RO5: Describe the students' perceptions of the ET experience in Phuket.

In this study, we rely on the interpretivist philosophy as we attempt to understand the motives and implications of educational tourism as a product of human action. Our approach to theory development is mainly abductive where we begin the study with already developed theoretical framework on educational tourism and aim to find the results consistent with it, but we also attempt to deduce the theoretical implications from the collected information and interpret the results.

LITERATURE REVIEW

Even though the term 'educational tourism' (ET) is relatively new to the extant literature, the phenomenon itself and the attempts to describe it appeared some time ago. The first ET experiences of humanity date, by various accounts, back to 17-19th century when a tremendous undertaking, the Grand Trip took members of British aristocracy around European countries for enlightenment; the next ET even reported by literature was the legal training in the UK undergone by American legislators at the dawn of the American state (Ritchie, 2003). Since then, the number of students travelling internationally under various programs has increased exponentially, Varghese (2008) finds a nine fold increase in student mobility between 1963 and 2006, also supported by other literatures (CTC, 2001; Rappolo, 1996). However the first mentioning of the term 'educational tourism' can be seen only in 1992 when it was used in a different form, first as 'educational travel' (Kalinowski &Weler, 1992; Bodger, 1998; Randell, 1992) and later as 'edu-tourism' (Holdnak & Holland, 1996). And the definitions ranged from '…travel with the primary purpose of engaging in a learning experience directly related to the location' (Bodger, 1998), or 'purposeful learning and travel' (Ritchie, 2005 referring to Paul, 2003). Smith and Jenner (1997) acknowledge that as all tourism broadens the mind all of it can be considered "educational". And Ritchie (2003) suggests a logical framework for educational tourism clearly defining its parameters, where he elaborated the dichotomy: tourism-first/education-first categorizing the types of ET by intent, as well as by time and formality. In this research we use the definition by Maga and Nicolau (2018), which delineates educational tourism in temporal perspective (between 24 hours and 12 months) and includes all learning activities. Educational tourism is placed within the framework of academic mobility as one of its types, the other being academic migration (Fig. 1).

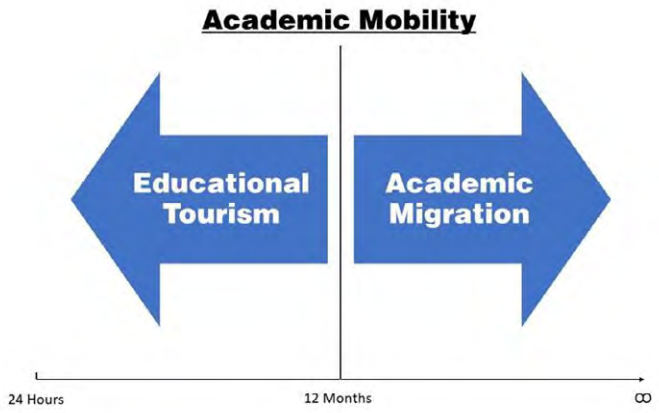

Figure 1. Time framework of academic mobility.

Maga and Nicolau (2018a) also categorize the academic mobility types placing such activities as school trip, language tour, summer school, excursion, skill tour, gap year, and exchange term/year among the types of ET.

A number of publications discuss the motives for educational tourism and the choice of destination. Harazneh, Al-Tall, Al-Zyoud and Abubakar (2018) find that cost, quality, environmental, regulatory, cultural, political, safety and social factors are crucial for educational tourism in Northern Cyprus; Wang and Li (2008) find that educational tourists in China tend to be attracted by bigger cities, which is in line with Richie and Goeldner (2006) who find that the attractiveness of the destination is the most important factor. However, the extant literature lacks explanation as to how these factors differ within the tourism-first/education-first dichotomy. Another question that remains unanswered is how destination management can increase ET demand, an attempt to answer it was made by Maga and Nicolau (2018b) where it was found that education tourism potential (ETP) is determined by the total tourist attractiveness, public spending on tertiary education and the overall English language proficiency (EPI). However, there is still a need to triangulate the results using a qualitative approach.

A considerable body of research focuses on the importance of educational tourism for specific educational programs (Prakapienė & Olberkytė, 2013; Dembovska *et. al*, 2016; Pitman *et. al*, 2010) and raising overall academic standards (Smith, 2013), which connects to another stream of literature aiming to measure the economic impact of educational tourism (Stroomberge, 2009; Ari, 2018; Arici *et. al*, 2014; Ankomah & Larson, 2000; Sharma, 2015).

METHODOLOGY

Method

The chosen methodology is a mono-method qualitative research based on interviews resulting in a case-study on educational tourists in Phuket, Thailand. The findings of this study were acquired in interviews with ten European students who study at different departments of the 'X' University, Phuket Campus, Thailand. The results of this investigation offer a unique insight into the context of educational tourism, which has not been reported previously. A rather small sample allowed us to conduct a deeper inquiry into the students' motives and perceptions of their ET experience. The sample size is attributed to the target population being only 34 international students (from Europe and Asia), with 11 agreeing to take part in the interviews. The number of exchange students at 'X' varies with each term, where most students come for an exchange semester. Hence, the chosen methodology is an in-depth interview. However, we cannot generalize the findings of this study due to a small sample size. The sample also limits us to the interpretation of ET perception of only European students, as educational tourists from Asian countries were unavailable.

Sample

The sample included 11 students, six of which are from Germany, three from Austria and two from Belgium. Nine students are female and two are male. All 11 subjects are within the 20 – 25 years old age category. Students are in Phuket for an exchange term of 4 months (qualifies them as educational tourists), and 10 are enrolled in Hospitality and Tourism program, and one is enrolled in Engineering.

The target population at the time consisted of 34 international students, and we used self-selection (volunteer) sampling method having informed the International Student Advisor about the upcoming interview. We then collected data from volunteering students, and group interviews selected to induce subject to discuss the topic and come up with more insights. The interview was semi-structured, and audio recorded.

The interview was conducted in October 2018. The interview location was suggested by the 'X' student advisor at a local café frequented by foreign students. The atmosphere was quiet, and no interference was detected.

Data collection and analysis

At the beginning of the interview session, the researchers explained the goal of the research, however the topic was presented as 'academic mobility' to avoid the tourist connotation and avoid contextual bias. Initially the students were offered a questionnaire with 24 questions pertaining to their profiles and intent, after which a discussion was induced about their choices and experiences, where the interviewers took notice of their tone of voice, facial expression and the choice of words. The questions discussed were: "*Why did you choose 'X'/Phuket?*", "*Is education your main goal in this experience?*", "*How do you evaluate the education here? Is it difficult to learn?*", "*How do you evaluate your experience here? What do you like the most*?", "*Do you want to come back here?*", "*Would you recommend Phuket to your fellow students back in your home country for an exchange semester?*", "*Do you tend to spend more on entertainment here? Do you perceive Phuket as a cheap destination?*".

The interviews with participants were recorded with a recording device and then transcribed. The data was coded and classified for recurrent themes. In this study, names of the respondents are coded. The confidentiality of the respondents was assured to facilitate free expression. The interview was conducted in English, which is also the language of instruction in their respective programs at 'X'. All students had sufficient command of English, which was also an academic exchange requirement.

RESULTS

The participant's profile

We summarized the participants' profile in Table 1.

Table 1. Participant's Profile.

No	Age	Gender	Home Country	Academic status	Length of visit	Academic program
Subject 1	between 20 and 25	Female	Belgium	Exchange student/ B-level	less than 12 months	Hospitality and tourism
Subject 2	between 20 and 25	Female	Belgium	Exchange student/ B-level	less than 12 months	Hospitality and tourism
Subject 3	between 20 and 25	Female	Austria	Exchange student/ B-level	less than 12 months	Civil Engineering/Hospitality and tourism
Subject 4	between 20 and 25	Female	Austria	Exchange student/ B-level	less than 12 months	Hospitality and tourism
Subject 5	between 20 and 25	Female	Germany	Exchange student/ B-level	less than 12 months	Hospitality and tourism
Subject 6	between 20 and 25	Female	Germany	Exchange student/ B-level	less than 12 months	Hospitality and tourism
Subject 7	between 20 and 25	Male	Austria	Exchange student/ B-level	less than 12 months	Hospitality and tourism
Subject 8	between 20 and 25	Male	Germany	Exchange student/ B-level	less than 12 months	Hospitality and tourism
Subject 9	between 20 and 25	Female	Germany	Exchange student/ B-level	less than 12 months	Hospitality and tourism
Subject 10	between 20 and 25	Female	Germany	Exchange student/ B-level	less than 12 months	Hospitality and tourism
Subject 11	between 20 and 25	Female	Germany	Exchange student/ B-level	less than 12 months	Hospitality and tourism

The researchers evaluated the interviewees' English proficiency as B2-C1 level according to the European Language Portfolio (ELP). Out of the participants, 80% are females, 20% are male; 90% are enrolled in Tourism and Hospitality program; all students are at undergraduate level. All students came to Phuket for one exchange semester and the interview time was in the middle of their exchange term. Interviewees pointed out that they came to 'X' under exchange programs assisted by Asia Exchange organization[1], which is an alternative to Erasmus+ for European students who have insufficient GPA level to qualify for Erasmus+ exchange programs.

Recurrent Themes

Several fundamental themes were obtained from the interview subjects regarding their motives and perceptions of ET experience in Phuket:

(a) Perceptions about their choice of exchange destination

(b) Perceptions about their motives

(c) Perceptions about the positive and negative sides of education in Phuket

(d) Perceptions about the positive and negative sides of the location

(e) Perceptions about the cost of living in Thailand and their expenditures

1 Asia Exchange helps arrange academic exchanges in nine locations in Asia and Oceania.

The overall perception of the ET experience is very positive. All subjects said they were having '*the times of their lives*' there.

Perceptions about their choice of exchange destination

Students pointed out some important issues. Of primary concern, all responded that Phuket ('X') was not the first choice of location, for some not even the second. Students going on exchange primarily choose a university partner under Erasmus+ programs, however to qualify for Erasmus+ supported exchange, which is usually either cheaper or free; depending on the agreements between institutions, a student needs to satisfy a certain level of GPA - which they did not. Therefore, the only alternative option for them was to use Asia Exchange organization, which operates in Europe and facilities exchange for students wishing to go to Asian universities for a degree program or exchange. Asia Exchange has a number of study destinations from New Zealand to South Korea.

The first choice to go on exchange was elsewhere in Europe, followed by North America. However, they had to abandon their first choices because of either low GPA or the expenses involved. Among the first choices, the students named Sweden, Canada and Japan.

Interview Subject 3 gives the following commentary:

I chose Thailand because I could not afford Canada and it was a good option and I found a good program (Asia Exchange)…

Interview Subject 1 corroborates:

My first choice was Sweden but it was a bit too costly with the accommodation cost and all…

Among Asian destinations, Phuket was chosen due to several reasons; first of all, it was a positive word-of-mouth recommendation from previous students.

Interview Subject 3 says:

I was between Bali and Phuket, and then I just asked them what is better, what is better accommodation… and it was a recommendation, the students in general were more satisfied in Phuket than they were in Bali…there was another university in Kuala Lumpur, but I was a bit scared because they are so religious, so I didn't want to go there.

Secondly, interviewees contributed positive impressions of Thailand and intrinsic motivations due to climate and beaches as their motivations. Some said their choice was due to a wish to experience cultural differences. The most widely verbalized motive was climatic. For European students among Asian destinations, Thailand has a unique combination of sought after properties: proximity (not too far, too distant locations are also associated with higher transportation

costs) and climate.

The subjects' comments about their choice of destination included: *"beautiful and tropical", "climate, cheap, sea", "weather, sea, beaches, landscape, culture", "climate and food*" (climatic factor); "*visited Thailand before and really liked the culture", "new experiences, different culture*'. Three subjects indicated that they always wanted to go to Asia and one subject commented: "*courses in English, offers good education, course selection*".

Perceptions about their motives

When asked directly as to their main motive; whether it was tourism first or education first, all subjects unanimously agreed that it was tourism first.

Interview Subject 1 says:

Well clearly for my parents its education first, but for me is 50/50 (laughs), I like to travel

Subjects pointed out that if it were education first they would have chosen another destination.

Interview Subject 5 says:

If it was education first I'd go to maybe Bangkok…

Among the destinations chosen by their fellow students from the list of Asian locations were Bangkok, Seoul, and Shanghai. Thus, tourism-first travelers, make their decision based on the tourist attractiveness of the location, and only then inquire about the university and its programs.

Perceptions about the positive and negative sides of education in Phuket

The subjects named a number of positive and negative sides of their academic experience at 'X', however they were mostly positive, with the main negative experience verbalized as the grade transfer process between Thai and European universities. It's often difficult as the credit values in ECTS (European Credit Transfer System)[2] are different and students have to study more in Thailand to get the required number of credits.

Students also complained about the learning outcomes of some courses that they chose. However, they also admitted that they had the same problem at their home universities. Tourism and Hospitality students considered the studies relatively easy, the Civil Engineering student on the other hand complained about the difficulty. However, that particular student (Interview Subject 3) was enrolled in Tourism and Hospitality in Phuket as she was on exchange for elective courses. Interview subject 3 also said that she was learning a lot more in elective courses in Phuket than

2 The courses held at our Thai partner universities are worth 3 or 4 Thai credits per course, which translates into 5-6 ECTS credits, usually not enough to meet the 30 credit term requirement at their home universities.

she would have at home. The relative easiness of studying at 'X' was also explained by one subject as follows:

You need to go to classes, but even if you did not pay attention, you can come to the last class before the exam and they tell you everything that is going to be on the exam…

Most students said that they are learning many new things, with most subjects they had selected being very useful. They mentioned that the course on Business Finance was especially useful and that it was delivered at a very high level. The overall perception was that applied courses were difficult and made students study more, and humanities were relatively easy, but still very useful. They also were impressed by the university facilities.

The interview subjects agreed that they had no problem with the level of English language in Phuket, nether at the university, nor away from campus. However, they pointed out that 'if the goal of exchange is to improve English skills, Phuket is probably the wrong place to go'. Students clearly estimated the local level of English proficiency as low, though they did not verbalize it, but their facial expressions indicated discontent. On an average, the students rated English proficiency in Phuket as 2.18 on the scale between 0 and 5. All students reported that they are constantly engaged in various extracurricular activities, such as travelling around the islands, and taking part in local festivals organized by the university's international student coordinators. All students said they would recommend 'X' as an exchange destination to their fellow students in Europe.

Perceptions about the positive and negative sides of the location

Out of 11 interviewees only two had been to Thailand before, and for the rest of them it was their first experience. Interview subjects gave an overall positive evaluation of Phuket as a tourist destination, but they complained that the area was overcrowded with tourists. Five out of ten subjects would not recommend visiting Phuket for recreational purposes because of that. Seven interviewees verbalized no intent of revisiting Phuket, not because of negative reasons, but due to having had the experience already and a single visit would suffice. Another negative side of the location that the students indicated was traffic, the lack of public transportation infrastructure, and the high cost of taxi services.

Among the things they liked the most about Phuket - 'climate' and 'beaches' were absolutely the most frequent answers, followed by 'atmosphere' and 'culture' and finally 'food' and 'nightlife'.

Only one subject verbalized a wish to stay and find permanent employment in Thailand.

Perceptions about the cost of living in Thailand and their expenditures

All students indicated that the cost of living in Thailand is very low and on average they spend more in Phuket than in their home countries. Their main budget lines include accommodation, food and entertainment.

Seven out of 11 interviewees indicated that accommodation was their main expenditure. They also said that it was very cheap and even though the university provided them with dormitory accommodation on campus, they declined in favor of rented apartments around the campus. Only two out of 11 students pointed out that their main expense was food, but others also said that

they tended to spend a lot on food and never cooked at home. Two interview subjects indicated that their main expense was travel. The average monthly budget per student apart from tuition fees and textbooks was 25,000THB primarily spent on accommodation and food. Students also said they were happy with local nightlife and certainly spent some part of their budget pursuing social activities at night.

DISCUSSIONS AND CONCLUSIONS

We find that Phuket is not the most popular destination for educational tourists, where out of over 3.6 million annual visits, only 34 – 93 are educational tourists in tertiary education in the form of exchange. We have to note the possible category of skill tours and language schools on the island, but these were difficult to identify among the agencies only existing for visa purposes.

Our findings indicate a number of important observations about European educational tourists in Phuket:

(a) Educational tourists admit that their choice of exchange destination depended on 2 main factors, the first being affordability and the second climate. Ideally, educational tourists prefer locations with better academic reputation, but if such locations are out of the affordable price range, the main factor for choice becomes the tourist attractiveness of the location.

(b) Thus, the second observation is connected with the first, the main motive of educational tourists visiting places with high tourist attractiveness is tourism, and hence we connect to Ritchie's (2003) logical framework of educational tourism and Richie and Goeldner's (2006) statement that the tourist attractiveness of the location is the key factor. However, we also see that such statement is only true for most tourism-first visitors. Therefore, such a statement has yet to be corroborated by empirical evidence.

(c) Educational tourists favored Phuket among other locations as the one where student satisfaction was the highest. On an average, the students reported lower academic stress and relatively good quality of education regardless of the average English proficiency on the island. Students also reported more free time which they spent travelling around the area. Students' surprised reaction at the level of education also corroborates that they were largely unprepared for such efficiency but relative ease of studies, again connecting to Ritchie (2003, 2006) and his tourism-first education-first perspective.

(d) Phuket as a location is perceived more positively than negatively, with educational tourists pointing out the negative side reluctantly as traffic problems and overabundance of tourists. So the answers regarding whether they would recommend Phuket for tourism purposes and academic purposes differed. They would recommend it for an ET experience but wouldn't recommend for recreational travel.

(e) Our findings on perceptions about the cost of living and expenditures indicate that educational tourists find the location 'cheap' and tend to spend more than at home, the average budget per month among the group of exchange students was 25,000THB which is above the average income, and all is spend on consumption, the main expenditure being accommodation, even though its regarded as cheap.

The limitations of our study include non-generalizability of inferred data due to a small sample size. However, the qualitative approach compensates for the lack of generalizability as it provides unique insights into the topic.

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DO ONLINE CONSUMERS AND USERS REALLY CARE ABOUT THEIR PRIVACY?

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ABSTRACT: *Online and digital services firms are continuously evolving. In parallel, cyberthreats are only rising. Yet, whether on social media or e-commerce platforms, online consumers and users continue to grow. It seems that consumers' value and benefit perception might probably outweigh their privacy concerns. Furthermore, online consumers and user's association to a given digital firm or a brand can take place via different ways that may contribute to how strong the relation is between the firm/brand and the consumer. As many marketing scholars have depicted, this associations can come under the categories of brand addiction, brand loyalty, brand attachment, brand love, brand trust, brand passion and brand liking. Such associations may also be a reason why an online consumer or user might continue engaging with online firms despite any cyberthreats or privacy concerns. Accordingly, marketers have a lot to capitalize upon in order to ensure a minimal customers loss should any privacy violation or a data breach takes place in the firm. One important marketing technique that may help marketers in such mission is cognitive marketing that would allow online firms to optimize their marketing and communication messages in real time to their users and ensure that the value communication propensity and message crafting is properly adjusted in accordance to the users changing sentiments. i.e. privacy concerns.*

KEYWORDS: **privacy, e-commerce, social media, digital services, marketing.**

PRIVACY VIOLATIONS AND USERS BEHAVIOUR

Do online consumers and users really care about their privacy? Though answering this short question may appear simple and straightforward, yet, it can be very intricate. The frequency of news about high profile data breaches leading to the compromise of millions of online customer and user data are only increasing. However, we continue to see an increase in the utilization of online and digital services by users, be it the use of online social media, online banking or more commonly e-commerce and online shopping. For example, Facebook was a victim of a breach in 2018 which impacted around 50 million users (Matsakis, 2018) as well as the controversial involvement of Cambridge Analytica that included the data of over 80 million Facebook users (Wikipedia, Facebook-Cambridge Analytica Data Scandal). Similarly, in 2016, the account credentials of up to 167 million LinkedIn users (Burgess 2016) were available for trade

on the dark web (Franceschi-Bicchierai, 2016) where most of such stolen data resulted from the 2012 LinkedIn breach (Ngak, 2012). Uber, the most famous ridesharing app, announced in 2016 a data breach that affected 57 million users (Khosrowshahi, 2017) which was probably more than half its global users by then.

What is more interesting is that regardless of the staggering breaches these firms experienced, we can still find a tremendous increase in all the previously mentioned platforms' number for user. For instance, compared to quarter two 2018, in quarter two of 2020 - Facebook realized an average increase of 17% in its monthly daily active users - a rise from 2.234 billion to 2.701 billion users (Statista, n.d). In the same vein, LinkedIn realized an increase in its number of members where in 2012 it had around 277 million members and currently it has almost more than 600 million members (99firms). Similarly, looking at digital services firms like Uber, we can find that the number of monthly active users grew from almost 50 million users in 2016 to around 110 million users in 2019 (Statista, n.d). Moreover, the number of rides uber gave worldwide increased from 889 million ride in quarter two of 2017 to 1.9 billion ride in quarter four of 2019 (Statista, n.d). All the latter mentioned actual cases clearly contradicts with some conducted surveys (Security Magazine, 2019), where among the findings were that 78% of respondents would stop engaging with a brand online if it experienced a breach or that 49% would not sign up or use an online application or service that experienced a breach recently.

When it comes to business-to-consumers (B2C) e-commerce and online shopping, in order for each successful transaction to take place, online shoppers are obliged to submit their personal and financial information. However, despite that e-retailers data breaches are increasingly publicized (Green & Hanbury, 2018), B2C e-commerce continues to only increase with a global monetary exchanges that are projected (Statista, n.d) to exceed $ 6.5 trillion USD in 2023 (from $ 3.53 trillion USD in 2019 and $ 2.98 trillion USD in 2018).

INCRASING CYBERCRIMES

Furthermore, as a result of social distancing and lockdowns, the current coronavirus pandemic crisis is further fueling the shift to e-commerce and user adoption of apps and digital services (Koeze & Popper, 2020). For sure, due to each industry economic specifics, not all products and services categories are getting their share of such growth realized by e-commerce and digitalization. On one hand, digital firms like Airbnb are facing an unprecedent threat to their existence as a result of the decrease in global travel. On the other hand, e-commerce pertaining to grocery, household and healthcare items are currently experiencing a tremendous growth (Berthene, 2020). Similarly, on-demand streaming services like Netflix are highly likely to realize a huge rise in user numbers and subscriptions. Regardless of the categories different products and services fall into, our point here is that generally, e-commerce will definitely get a boost from the consumers' changing lifestyle and fear of visiting physical stores as a result of the pandemic crisis.

In contrast, there are no doubts that cybercriminals are viewing such increase in online engagements as an opportunity for extra profits. Cyber threats are continuously evolving and will only continue to rise which will in turn lead to data breaches. Such data breaches are increasing in frequency and magnitude as more and more online consumers and users engage

online or purchase online. That is why most of these breaches usually involve the compromise of customers personal and financial information. Generally, it is very well known that cyberattacks and consequently data breaches are only a matter of "when" and not "if". Furthermore, customers information breaches leads to additional negative consequences such as identity thefts, online scams and online fraudulent acts by cybercriminals.

Though online cyber risks are only rising, why do online users and consumers continue to increasingly engage in online activities? Why do online users continue to use social media and post information about themselves, whether personal information, pictures, location, career update etc.? Why do B2C e-commerce continues to increase and consumers are attracted to it rather than the traditional brick and mortar stores? Do online users and consumers really care about their privacy? Or do online users and consumers forsake their privacy in return of other benefits?

THE ROLE OF MARKETING

Many factors play a key role in answering each of the abovementioned questions, including but not limited to: the psychological factors of the consumer, personality traits and risk tolerance. However, we can deduce a possible common ground answer, i.e., the user's perception of value and benefit.

Each online user or consumer conducting an online activity is usually seeking a benefit from such engagement and perceives a value out of it that outweighs the effort, cost and risks – including cyber risks – of performing such online activity. For instance, despite cyber threats, consumers are increasingly relying on e-commerce. Why may that be the case? Does the comfortability of purchasing online outweigh their privacy concerns or effort of visiting the physical store? Or does the expansively wide variety of products and services they can virtually compare choose online? Though social media platforms were victims of data breaches compromising their user's data, why have the number of users continued to steadily increase? Do users value the social connections and the exposure they get from social media over their privacy? Is sharing and craving for information and updates on social media more important for a person than his/her privacy? A short answer at a glance to all of this would be a resounding yes.

Accordingly, countering cyberthreats with its associated data breaches are an inevitable challenge that any online interfacing firm have to deal with as well as a persistent risk that online users have to tolerate. However, online interfacing firms, with its marketing function, should simultaneously devise a strategic marketing and communications plan that can strategically reinforce the psychological extent of what online users and consumers perceive in terms of value or benefit when engaging with an online firm. In doing so, online firms may indirectly instill the compulsive shopping attitude and engagement in online consumers and users which can then be reflected on the consumers' brand loyalty or brand addiction as some marketing researchers are coining the term for the strong psychological engagement of consumers with a given brand (Reimann *et. al.,* 2012; Fajer & Schouten, 1995).

Overall, online interfacing firm should always be prepared to handle cyber incidents, a key pivotal factor that can possibly outweigh online users privacy worries and contribute to their

"forgiveness" attitude towards an online (breached) firm, is their perception of value and benefit. After all, it may be the case that online users and consumers tend to value the benefit of the online service they get from a firm over their data privacy. Furthermore, apart from online consumers and users perception of benefit which might outweigh their privacy concerns when engaging with a given online firm, the consumers relation with a given brand or an online firm can play an important role in how online consumers and users engage despite cyberthreats and privacy concerns. Accordingly, marketing scholars also argue that brand attachment, brand love, brand trust, brand passion and brand liking are different ways with which consumers can strongly associate with a given brand (Cui *et. al.,* 2018).

CONCLUSION

While different marketing techniques can be utilized to achieve such objective, however, cognitive marketing can help in achieving this purpose. Especially with the rise of artificial intelligence (AI) technologies and tools that undoubtedly gave a strong boost to cognitive marketing over the past few years. In general, going after what is on the consumers' minds and addressing it purposefully should be ultimately the goal of any marketer. In adopting cognitive marketing, theoretically, online firms do somehow allow the consumers and users to be in control. However, with the aid of AI, the marketing and communication strategy of the firm is personalised based on customer's engagement, preferences, and most importantly — their behaviour. Thus, this allows online firms to capitalize on such user's data flow in order to constantly optimize their marketing and communication messages in real time. This would most probably ensure that the value communication propensity and message crafting is properly adjusted in accordance to the users changing sentiments*, vis-à-vis*, privacy concerns.

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BOOK REVIEW

BAD BLOOD: SECRETS AND LIES IN A SILICON VALLEY STARTUP

Book by John Carreyrou

Knopf, 1st Ed. (2018): ISBN-10: 152473165X: ISBN-13: 978-1524731656

Review by Vasilis Gkogkidis

Bad Blood: Secrets and Lies in a Silicon Valley Startup by John Carreyrou aims to document the rise and fall of Theranos, a healthcare-tech company founded in 2003 by then 19-year-old Stanford dropout Elisabeth Holmes. A Silicon Valley unicorn valued at $10 billion, Theranos promised to reinvent the way blood tests are conducted, developing a technology that would allow the running of hundreds of blood tests possible using a drop of blood instead of a whole tube. The promise was never kept, as it proved scientifically and technologically impossible to reliably test for any disease with such a small quantity of blood. Instead of accepting these limitations, Theranos decided to lie about the capabilities of their technology, exposing patients to inaccurate blood test results and putting their health in danger. Eventually, whistle-blowers revealed information proving that the innovative technology Theranos claimed to have developed was not working properly, driving the value of the company to zero and resulting in Holmes being charged and convicted for fraud. Carreyrou achieves the book's goal by collecting and presenting information leaked to him by ex-employees of the company alongside publicly available data like reports provided by regulators. The book takes the reader on a stunning saga of lies and corporate fraud, offering a plethora of lessons for management, academics, and practitioners.

Theranos was founded in 2003; managed to raise more than $700 million; started providing their services to customers in 2013; stopped offering blood tests after the scandal broke out in 2015; and finally ceased operations in September 2018. Power dynamics, group interests and knowledge claims have been largely absent in management education and literature, but cases like Theranos have a lot to teach practitioners and academics alike. Power – knowledge theory by Foucault (1995) suggests that Power is Knowledge, meaning that certain social groups who yield power can shape knowledge to their liking and rebuff knowledge claims made by less powerful groups. Bad Blood describes many instances where Theranos employees, many of them trained scientists with some holding PhD titles, talked to Holmes or other top management, trying to

convince them to reconsider their practices. Even though these employee knowledge claims cited inconsistent blood test results and data revealing that the company's technology could not pass standard quality control, they were bluntly rejected by management, either claiming that everything is going to be fixed, and that there was no reason to worry, or by simply firing the employee and threatening them with lawsuits if they shared any information with anyone outside the company. Power – knowledge theory also posits that knowledge is power, meaning that knowledge can provide social groups or individuals with access to power (Foucault, 1995). Having been scientifically trained, ex-Theranos employees knew that the company was engaging in unethical, illegal behaviour and held proof to support that knowledge claim. Sharing their concerns with Carreyrou and regulators, they managed to expose Theranos and their practices to the outside world, eventually leading to the company's downfall. The Theranos case can also teach us a lot about leadership, corporate social responsibility (CSR) and human resource,s where Holmes and top management utilised shockingly unethical management practices that created a corporate culture of fear and intimidation to keep their employees in line.

A company does not operate in a vacuum though, and Bad Blood offers the chance to identify factors in the company's environment that contributed to Theranos being able to "fake it" for so many years. Legislation governing how private health care firms operate was exploited by top lawyers working for Theranos, enabling the company to engage in unethical business practices. A critical reader wonders how it is possible for a company to start providing blood tests to consumers when their technology has not been properly vetted by regulators, and data from their labs have not been peer reviewed by the scientific community. Silicon Valley's innovation driven "fake it till you make it" culture fuelled by popular media discourses - where CEOs like Holmes are awarded almost heroic status also contribute to how the public thinks of private businesses as heralds of progress while often forgetting the need to scrutinise their practices and decision making. Being the first female CEO of a big business in Silicon Valley, Holmes managed to leverage another discourse, that of encouraging more women to go into science and technology, enabling her to get some political influence getting endorsements from then Vice President Joe Biden as well as Democrat nominee for the 2016 US Presidential elections, Hillary Clinton.

The main strength of the book is the depth and breadth of data that it provides the reader with. The main data collection methods used throughout the book are interviews and examinations of publicly available records like the Therano's website, press coverage of the company, scientific literature and reports published by institutions like the FDA (Food and Drug Administration), the US based regulator responsible for assessing the safety of medical practices and products. Carreyrou conducted multiple interviews with former Theranos employees and stakeholders including consumers, physicians and partners of the company, providing readers with a detailed timeline of the company's activities and its misgivings.

On the other hand, this is not an academic book, so it does not place the Theranos case study in a larger body of literature around ethical business practices or corporate scandals in the healthcare industry for example. There are no connections to theoretical frameworks explaining the behaviours individuals and organisations engaged with during the case. In that sense we could assume that Bad Blood offers raw data to be interpreted by researchers engaging with organisational and management literature. It can also be viewed as an educational case study that students need to interpret in the context of their studies, rather than a standalone piece of literature that offers insights into management theory - but that is not its goal anyway.

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EMPLOYMENT IN THE GIG ECONOMY

Bora Ly

ABSTRACT: *Current developments in innovative technologies and trends like the Internet of Things (IoT) has expanded and changed the way businesses operate. Consequently, these improvements need to discover a way for people to modify the impact of various modernizations in their lives. Concurrently, the fast growth of the gig economy and the progress of such work relations has led to the lack of specific study in this field. This article tries to figure out the current concerns about the gig economy employment and its players. Also, it uses a combination of narratives, explanations, and assessments according to the topics feature. As a result, it contributes both pros and cons. Within these unstable employment relationships, measures must be taken to protect the workers and adapt their employment rules to modern business practices.*

KEYWORDS: gig, collaborative, sharing, platform economy, flexibility employment.

Recently, new forms of employment have emerged with social and economic growth, such as increased demand for employee and worker flexibility (Mandl *et al.*, 2015). Also, the forces of globalization and the spread of information technology have created new markets. This new phase highlights greater flexibility in the market and labor relations but increases the presence of ambiguous jobs which manifest in the form of no insurance, low wages, and unsafe employment conditions (Fudge & Owens, 2006). The characteristic feature of these new types of jobs is that they contribute to outsourcing, shifting risk from businesses to workers, as well as contributing to workers' income instability (De Stefano, 2015). This new form of employment strengthens the traditional relationship between workers and companies, challenging the in-depth ideas of labor laws and the labor markets. According to this trend, the concept of outsourcing, together with the development of cutting-edge technology, constitutes as "gig-economy" (also called a collaborative, sharing, or platform economy) (Schmid-Drüner, 2016).

The primary purpose of this paper is to offer a satisfactory definition of the "gig-economy." The distributed nature of the gig economy benefits both consumers and providers are the key to sharing economy. In Western societies, it is a common trend that sharing or borrowing provides workers mobility and flexibility. In our fast-changing world, these features are becoming increasingly important and as such, it is not surprising that the gig economy has recently begun to spread in the developed states.

The sharing economy has five characteristics that make up the phenomenon (Kane, 2016). Firstly, the sharing economy needs a digitally empowered marketplace, that allows transactions in the digital setting, for example, Airbnb and Uber. Secondly, the business model of the sharing economy uses abandoned capital, which is a waste of resources. Businesses aggregate demand and supply on a platform and use complete pairing distribution technology. Thirdly, the development of complex networks facilitates communication. It is impractical to ignore the prevalent systems and models of engagement. It therefore makes sense that crowd-based networks are also applied to the workplace. The simple use of technology and human interaction today further reflects the need for the gig economy. Another feature of human interaction that highlights the growth of the gig economy is concerns around work-life balance. This feature is a big problem for families working full time and raising children.

High unemployment rates and unpredictable job environments have also contributed to people more easily giving up their privacy. As a result of the nature of the platform economy, jobs provided through this system/approach tend to sacrifice workers privacy in the employment process. Finally, what new economies have created to enable customers and suppliers to change supply and demand is the simple yet still a digital marketplace.

As a new tool in the business model palette, additions to sources and present regulation should be further discoursed on the collaborative economy. Much like all new regulatory elements, the platform economy remains fickle for employees. There are ongoing discussions about the gig economy however these have not yet gained widespread/public recognition. It is still a significant concern today and definitely will continue for decades ahead. The transition from a traditional workplace to a tailored economic environment incurs advantages and drawbacks.

This article is intended to explore the developments and evaluate both positive and negative implications. Hence, the article asks they key question "*what is the primary purpose of the gig economy, and how can it be achieved*?"

METHODOLOGY

This paper utilizes a mixture of explanatory, descriptive, and evaluative studies based on the nature of the topic (Matthews & Ross, 2014). It utilizes academic papers, reports, institutions, articles, as well as analyses relevant procedures and practices and secondary sources. A brief introduction to the subject and the literature studied of the books and articles are reviewed to compare various ideas about the gig economy. Also, it represents a comprehensive study on the topic of the sharing economy, focusing on business perspectives and working relationships.

DISTINCTION

As the overview already addresses this topic, the role of technology is growing in the maintenance of economic development and competitive edge (Dahlman, 2007). Various scholars use the term globalization in the early 20th century; nevertheless, its interpretation dates to the 1970s (James & Steger, 2014). Consequently, substantive transition has been implemented in the business

and employment structures. However, this section portrays a big difference from other types of innovative works that occurred in the era of globalization. Primarily, this section could best help in understanding what the positive and negative features of globalization are.

Globalization improves free trade and communication between countries, along with other advantages including access to technology, social and economic development, media advancement, education and health care improvements, better quality consumer goods etc. Technological innovations in the labor market have almost eliminated traditional systems of work, and new modes have been created to replace possible vacancies. On the other hand, consider the shortcomings of globalization, including its adverse effects on the societies and economies of emerging nations, the homogenization of cultures. Various arguments for and against globalization are possible due to its complicated nature and its impact on topics such as poverty alleviation and increased disparity.

In conclusion, this section looks at the phenomenon called "*Uberism*." Uber as a company continues to innovate and disrupt activity like most startups that have succeeded in a gig economy. The study goes on to deliberate frustration from a juridical perspective. Uber does not protect workers in the same way that ordinary workers are protected from distortions of competition.

New Forms of Employment

There are nine new forms of employment based on European Foundation for the Improvement of Living and Working Conditions updated in 2018. These forms of include strategic employee sharing, job sharing, interim management, casual work, ICT-based mobile work, voucher-based work, portfolio work, platform work, and collaborative self-employment (Mandl & Biletta, 2018). This paper will portray the brief contradictions among independent contractors, freelancers, and entrepreneurs.

On-demand firm's simple foundation is a type of innovation in the labor market, such as mobile applications, and demand-driven business support. All of this can be classified under the shared or gig economy. Its feature is to employ technology to react to customers' needs promptly (Dugan, 2016). Thus, technology provided the substance for business creation. The sharing economy uses the platform as an intermediary marketplace, focusing on supply and demand, just like the original definition of the market. It helps HR organize data to a certain level and allocate as desired. Eventually, crowd employment can support the crowd.

Freelancers and Independent Contractors

Over time, the job market began to get more polarized, IT revolutions led to an expectation of millions of people with IT skills due to the rising trend in the sector in the 90s (Ford, 2015). Today, the demand for IT professionals, application developers, or similar task skills is still increasing. When you want to know about the work status of a platform economy company, you should merely ask about the company's staff, but this is of course difficult to do.

In the US, this misinterpretation can be penalised by the Fair Labor Standards Act. The Internal Revenue Service organizes the labor classifications, and the differences are the same across organizations. According to the IRS, "anyone who performs services for you is your employee if you can control what will be done and how it will be done," and then again, "an individual is an

independent contractor if you, the person for whom the services are performed, have the right to control or direct only the result of the work and not the means and methods of accomplishing the result" (Lumix CPAs and Advisors, n.d.). Effort has gone into the gig economy as companies like Uber have maintained to show independent contractor status for "partners" despite the potential effects of misclassification.

Taking into account the 2019 survey conducted by Upwork and Freelancers Union, it turns out that more than 57 million people (about 35% of the workforce) do freelance work. They are considered as independent contractors, so gig workers are different from the conventional employment. Perhaps, employees receive the protections and benefits provided by labor law (such as sick leave or health insurance), while independent contractors are not covered (Ford, 2015). Except in some cases, on-demand corporations still use the firm's platform to refer and transact with customers, considering them as independent contractors rather than staff and contractors. Relatively, the platform economy can be seen as a classical extension of freelance work (Dugan, 2016).

Nevertheless, the gig work may differ from classical freelance work in some ways. Keeping track of work arrangement through on-demand firms' spend less of access and procedure of companies and enables workers' involvement to be even more momentary inside the gig market place (e.g., flexibility of working hours). An additional difference usually prevents a few on-demand businesses from taking work beyond the platform of the particular customer. As a freelancer, providers have no limit selecting their clientele. Platform users on the other hand do not have the freedoms as freelancers. Also, remuneration differs, platform businesses often require that a specified percentage being paid for access to the application.

Freelance or Entrepreneur?

Whenever considering the differences from traditional freelancing, the question remains as to how the inventor should choose a carrier. Setting up a business in the gig economy may sound attractive, but there are a few advantages for the old-fashioned approach.

An entrepreneur, in general, individual with significant initiatives and risks bearing, especially those who produce and perform something unique that people have not done. Entrepreneurs play an essential role in every economy, taking into account the demand and using the skills and initiatives needed to bring new ideas to market. The results of tax obligations can vary by state and region, and of course, working relations are critical factors of a successful business process. As the head of the business, with or without employees, the entrepreneur has to be able to wear many hats and effectively use them.

Instead, the freelancer, the person does not have to formulate or produce something new. They require a capacity of their field and personally prepare and provide services. Entrepreneurs concentrate on growing, but freelancers need not to build a disposition or seek the services of people. The freelancer can freely organize their life and become their boss. Thus, they intend to maintain stable work without a boss, to do a great job, and to continue growing need for their work, thereby growing wages and the quality of the gigs. Entrepreneurs' goals are different and individual, but they can include achievement, financial success, or social change.

Hence, the significant difference between these two type falls to time (DiPiazza, 2016). Because freelancers commute time utilization of funds (while so much better paid than a classic work),

but entrepreneurs rely on systems and employees to work without direct intervention (DiPiazza, 2016).

Uberism

Uber is probably the most commonly known online transit symbol in the gig economy. It was founded as UberCab by StumbleUpon, co-founder of Garrett Camp and StumbleUpon in 2009, who sold Red Swoosh startup for $19 million USD in 2007 (Bacon, 2012; Lagorio-Chafkin, 2013). It is predicted to have 110 million users worldwide by 2019 (Mazareanu, 2019). It is prevalent in the sharing economy, and as a result, industry change is called uberization (Michael, 2015; Kristyn Nika, 2016). They created a system that links riders with cabdrivers; thus, they own a billion-dollar business today. So far, this may be another promising startup, but the most significant change in the fast-growing business is that Uber does not own the vehicle which the drivers' use.

Uber drivers reported higher incomes in 2019 than in 2018, and driving experience, about 47.8% were satisfied (Campbell, 2019). The concept of Uberism can be related to higher income and satisfaction rates. Why is it so popular with workers? Firstly, individuals can create their timing, and this flexibility is everything they need to balance work and family. Comparing Uber with regular cab drivers, they usually decide to work less time a week, because it depends on how much they manage in the following week. Secondly, it is a very diverse workforce. Men and women, students, and veterans choose to drive Uber, even those with high and low levels of education. Also, one-half of the drivers are married with children, and the majority are between 40-50's. Decisively, it has wide-ranging works, and students take extra time to supplement their budgets or support their families.

Lastly, the steps at which employees can participate are different. The following features allow us to spot several functions, including UberBLACK was the first car service offered by Uber. Thus, UberBLACK is an advanced version of UberX today. UberX service is about 20-50% less expensive than taxi alternative (Allen and Berg, 2014). The newest regulars would not have prior experience; however, they function over 30 hours a week. Finally, part-time work does require experience and workers can function over 30 hours a week as well.

GIG ADVANTAGES

Recently, the Bureau of Labor Statistics conveyed that 55 million people in the United States were gig employees, which account for more than 35 percent of the US workforce. This figure is projected to 43% by 2020 (Swaniker, 2019). The gig economy offers a wealth of opportunities for extra cash or full-time living.

The way of working has been revolutionized, bringing opportunities and risks. As Dyal-Chand (2015) claims, organizations have leveraged digitization to produce efficiency and value. By increasing employee productivity, stimulating consumption, improving innovation, and entrepreneurship, it can increase economic growth and create well-being (Burtch *et al*., 2016; Sundararajan, 2014). Thus, employees recognize real benefits.

As Dobson (2017) claims, most of the gig economy is very flexible. These flexibilities are found to be beneficial for both workers and companies. Thus, workers can allocate time and resources

at their choice (Hall & Krueger, 2018; Burtch *et al*., 2016). This is in line with the provisions of the labor law, which gives the self-employed worker the control to accept and refuse the job as desired (Emir & Selwyn, 2016).

The rising markets in the 1990s contributed to the development of the global economy, providing job opportunities for those who are not able to work usually. This labor regulation is especially important in areas where there are no job opportunities (Greene & Mamic, 2015; Narula et al., 2011). Sometimes, the use of the platform economy provides work for persons and give these people access to consumers in relatively more affluent nations (Agrawal *et al*., 2015). Huws *et al*. (2016) recommends that the platform economy is utilized as a method of rendering additional revenue, while in other cases, it is the only source of income for employees. Differences in income dependence can play an essential role in identified advantages. The flexibility and ability to work anywhere, anytime with a secure revenue, offers individuals the ability to pursue other activities simultaneously (Shah & Tripsas, 2007; Burtch *et al.,* 2016).

GIG DISADVANTAGES

In some markets, job competition becomes fierce, underestimated, and unsustainable, allowing workers to work longer, thus losing the flexibility they seek (Aloisi, 2016; Felstiner, 2011). So, night shifts and other part-time are treated without further compensation (Gupta *et al*., 2014).

According to Emir and Selwyn (2016), the workers under this employment relationship group have more obligation and less control than self-employed; however, minimal compared to employees. The absence of entitlements from work has resulted in several challenges, including unbalanced bargaining power between employers and employee's (Rogers, 2016). Companies often have more power than individuals, and as a result, workers suffer. Many people encounter poor wages and employment conditions, without safety nets and other benefits provided by typical employee status (De Stefano, 2015; Taylor *et al.,* 2017; Kuhn, 2016). Also, common work issues such as wage cuts, unfair dismissals, and terms of contract regularly falsely employees as self-employed (Taylor *et al*., 2017). Often this type of employment is shaped without considering full legal title, and individuals often appear to be abused by employers because of their employment status (Rogers, 2016).

Due to the great revolution of the gig economy, yield eradication through the technology and work environment that create new jobs, as explained in economic theory (LexisNexis, n.d; Schumpeter, 1976). Even if the advantages, especially for individuals with a weak attachment to labor and a high level of education, yielding eradication has disadvantages, especially for low-paid work (Burtch *et al.,* 2016). A substantial concern is the extent of sustainable uncertainty (Huws et al., 2016). If it does not know when a worker is likely to work, then it is common in a zero-hour contract. It is easy to externalize duties to employees, not the company itself. Companies are required to carry out risk tests, deliver training, and consider safety precautions; for instance, use of a computer screen and seat (Huws *et al.,* 2016). There are specific risks for workers involved in driving, such as Uber, if it is not regulated for a long time, fatigue can occur, and accidents can increase as consequences (Huws *et al.,* 2016; Gullo, 2014).

CONCLUSION

Given all areas of the gigs, we can predict that development, rather than customer and service providers, will not hinder increased engagement. The gig economy represents both pros and cons. As a result, in this type of employment, individuals must take into account the value and impact of labor. The result also emphasizes misperception, so recognizing and understanding the problem before getting into a contract may mitigate unfavorable emotions, as a result, lower the notion of the more substantial drawback. Besides, the lack of advantages and alternatives encourages non-employed people to consider the gig. According to BBC News (2017), companies like Uber are under much scrutiny due to a craving for procedure and recently adverse media spotlight. Businesses in the gig economy have to be cautious in progressing to place difficulties upon workers. The growing craving for guidelines raises the risk of a directive that can disrupt and end business models. Therefore, companies should instead provide more complete factors as motivation for entry into the gig economy. Also, measures must be taken to protect workers within such an unstable employment relationship and to adapt the rules of employment to modern business practices.

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THE GROWING IMPORTANCE OF A SCIENTIFIC APPROACH IN WEB DESIGN FOR INFLUENCING ONLINE PURCHASE INTENTIONS

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ABSTRACT: *The article provides an overview of the growing understanding of the importance of being present online for companies from different segments of the economy. Moreover, it provides a brief rationale of the importance for the development of online presence in a professional and scientifically proven way. In order to provide a complex overview, the article summarizes the outcomes of the reviews and professional opinions based on practical experience, including the successful implementation of techniques such as neuromarketing. Online presence paves the way from an unknown tool through one of the most common forms, such as an online shop, with a focus on private customers up to leading and solving core issues within industries. Moreover, it spreads to all areas of the economic environment. Nowadays it is becoming technically difficult to compete with top players in the market in terms of user-friendly and customer journey optimized solutions. However, it is inevitable to build a smart online presence for any type of organization to be able to join the race towards winning new customers. The development of modern research approaches combined with the rapidly changing market conditions and accelerating technological progress poses managers with the question of priority implementation of the new market positioning methods. This article aims to put focus on the importance of taking into consideration modern trends in the struggle for online purchasing.*

KEYWORDS: online, purchase, customer, economic environment, presence.

The global economic world is permanently seeking for the new business development opportunities. Since the companies get almost unlimited access to the information with the help of the new technologies and internet, the development and implementation speed of the new methods increased dramatically (Ouyang, 2016). Thus, to stay competitive, it is inevitable that a company must use innovative technics, to anticipate the future and to shift from classic methods. Successful organizations connect innovation activities with business objectives, and they are not afraid of experiment (Ikeda *et al*., 2016).

THE MAIN TRENDS IN BUSINESS

The main trend in the business world nowadays consists of the big need to be competitive. Startups are not the only ones that have to be prepared for changes, every type of organization should not ignore the discussion of ongoing changes which are mainly driven by web applications, social networking and online presence development (He *et al.*,2019). Even well established and consistent organizations with a focus on hierarchical business relationships are trying to innovate and become digital to maintain their relevance (Shen *et al.*, 2020). The fast development of the knowledge base made it inevitable to put additional attention on technology and user experience by reaching the goal of digitalization. (Zhang *et al.,* 2019). The rapid development and improvement of technologies, as well as development of the international economy in the last decade (Shanshan & Lei, 2010) lead to rapid development of e-commerce, building on the developments that e-commerce got in the 90s (Shanshan & Lei, 2010). Jelassi and Enders (2005) determined e-commerce as the mechanism which helps to deal with transactions and selling process of products and service online via the Internet or other network.

Nowadays e-commerce covers different aspects of market relationships. It pushed not only B2C and B2B relationships, but also determines the range of different technologies which led to improvement in trade relationships (Shanshan & Lei, 2010). Thus, according to Shanshan and Lei (2010) e-commerce became a new way of business and trade activities which uses electronic means supported by the Internet. Kalakota and Whiston (1997) determined four different perspectives of e-commerce definition: communication perspective, business perspective, service perspective and online perspective. Therefore, there are a wide range of activities which could be determined by e-commerce. Torres (2014) confirms the Internet as the tool for being online has accelerated the fast development of e-commerce. Kozinets (2019) confirms that nowadays e-commerce is not only the one possible way of successful usage of online presence technologies. One reason is that the presence in the Internet facilitates dynamic interaction between companies and their potential clients, which can lead to the long-term successful relationships and increase of company's perception (Andreopoulou *et al.*, 2009). Its influence on online purchase intention (which can be defined as the respondent thoughts and doubts whether to buy a product or not) it terms of increase in number of decisions towards redeeming of deferred purchase (Shaouf *et al.*, 2016). It is evident that new technologies create new marketing mechanisms which provide a platform for companies to take advantage of the scale and heterogeneity of many internet markets (Popescu, 2013). Business today is becoming more complex (Sargut & McGrath, 2011). Despite the fact, that the term electronic commerce carries different meanings to different people the company should be presented in web by having website, which is inevitable in the current decade (Sadeghein *et al.,* 2012; Poong et al., 2006).

The main point nowadays is that the productive development could be only possible by implementing scientific findings (Breiter *et al.,* 2015). Not surprisingly, that the website design becomes a fundamental concern, because the first touch point is more likely to happen in Internet (Tsekouropoulos *et al.,* 2011). The quality of website design is very important for any online store and business related to it (Ganguly *et al.*, 2010). The research on impact of website quality on company's performance will create benefits not only for the surveyed company, but also for the whole ecommerce market, because the new ways of designing the website could be applied to any company in any industry. It is critical for each company nowdays to develop high quality website (Kim, & Lennon, 2013).

Although marketing on the Internet can benefit companies of all sizes, Paul (1996) argued that the smaller organizations may have the maximum gain from their online presence. Schaupp and Belanger (2016) confirm this statement emphasizing the importance of Internet marketing for growth and development. The main challenge for the marketers is problem of conveying product attributes in a technology mediated environment (Wells *et al*., 2011) and the method and base which were used for website adaptation (Kopcso *et al.,* 2000). The website design or the website presence is determined as the set of text, pictures, graphics, layout, sound and even smell as well as motion – context, which keeps the information about the company's message (Rosen & Purinton, 2004).

Since each company requires nowadays an Internet presence and because of the understanding that e-commerce itself became the center of business world (Chong *et al*., 2006) it is inevitable that every manager tries to do their best in order to make their company competitive online (Wells *et al.,* 2011). Moreover, the patterns, skills and guidelines of offline presence cannot be transferred to online presence (Singh *et al.,* 2005). It is obvious that the managers and business owners do not want to lose users due to poor website structure (Singh, 2015), but still not many designs are adopted – only some versions of texts are common to be changed (Bartikowski & Singh, 2014). Therefore, the further research on this topic could give an additional advantage. Singh et al. (2005) noted that the improvement of website effectiveness by adopting content helps visitor increase the emotional involvement by giving a possibility to better look inside and feel the website. Xin-jian et al. (2009) mentioned that the attractive website can be created only by effectively designed layout of website with combination of all the informational elements. Thus, it is obvious, that the key to online success is inside the website quality assuming that all other factors are equal. The difficulties can be not in understanding that only specific features can lead to effective website design (Rosen & Purinton, 2004), but in findings of these features. Therefore, the overview of all related opinions and outcomes summed up in the current article gives the impulse to closer attention in this field and practical implementation of the high edge technics by any type of the company and area of business. Thus, in order to be competitive and to have a possibility to move forward the more comprehensive approach in website design is needed nowadays (Chong *et al.,* 2006). Only deep analyses and hypothesis testing can give the right experience and bridge the communication gap between target audience and the company (Chong *et al.,* 2006). Luckily, it is already proven by researches that the dependency of website visitors' behavior and the number of visits itself are influenced by the website design (Rosen & Purinton, 2004).

NEUROMARKETING

As far as the challenge is to find the right method for website adaptation, sometimes the effect could be reached by the method which is not obvious for the first look (Barker & Milivojevich, 2016). Another challenge is that it is not enough to have the interest and idea for implementing the new techniques - the area should be explored. Despite the interest of marketers in using neuroscience techniques to understand the consumer's thought processes, neuromarketing as a science in relation to marketing is quite an unexplored area (Da Rocha *et al.,* 2013). The ability of neuromarketing to exert even greater control over consumer choices remains uncertain (Sokol, 2014). Researchers and practitioners have contradicting ideas on the importance and application of

neuromarketing. The research-practice gap in neuromarketing is caused by different perceptions among researchers and practitioners on the development and application of neuromarketing knowledge (Gang *et al.,* 2012).

Neuromarketing as one of the most powerful and leading techniques is able to provide key insights into issues concerning business (Sharma *et al.,* 2014). Researchers use technologies such as Functional Magnetic Resonance Imaging (fMRI) to measure changes in activity in parts of the brain, electroencephalography (EEG) and Magnetoencephalography (MEG) to measure activity in specific regional spectra of the brain response (Sharma *et al.,* 2014). Other methods such as eye tracking, measuring physiological responses: heart rate, blood pressure, and hormonal levels are used; and often some combination of these and various other techniques are used (Sokol, 2014). Neuromarketing is simply trying to understand thoughts and actions of the consumer (Miljkovic & Alcakovic, 2010) by attempting to understand the biology of human behavior (Butler, 2008). Researchers see the potential for further development of marketing by manufacturer for other business strategies by applying findings from the neuromarketing research (Sokol, 2014). Examples of the applications of such findings are well-known brands such Coke® and Pepsi® (Da Rocha *et al.*, 2013). Breiter *et al.* (2015) states that neuromarketing findings could be used in broader prospective including design. However, since neuromarketing is one of the latest developments in the field of marketing, more research has to be conducted to better understand and investigate the implications of the potential impacts of neuromarketing in the business world (Breiter *et al.*, 2015).

CONCLUSION

Nevertheless, we are faced today with the situation where big companies employ marketers which using "neuromarketing tools" – becoming "standard" in market research and other disciplines (Ramsøy, 2015). Neuromarketing is often seen as the commercial use of neuroscience insights and tools that companies can use to better understand or influence on consumer responses and service-related communication effort (Ramsøy, 2015). It makes it possible to use the proven scientific research finding in order to influence customer behavior and increase their emotional involvement (Breiter *et al.,* 2015). There definitely exists a great opportunity to adopt and implement neuromarketing practices in broader prospective and there is the potential for further development and implementation (Sokol, 2014; Breiter *et al.,* 2015). Nevertheless, the founders and drivers of the companies still do not believe in the power and potential of the science (Grewal *et al.,* 2020). The reason could lead to a statement that such an approach has certain limitations, because there is no possibility to use special equipment in order to measure, e.g. brain activity. Business today is facing a gap between the latest scientific findings and their applications. Spence (2020) tried to overcome the gap by stating that the consumer-focused neuromarketing techniques can be heavily taken into consideration by developing and moving forward high edge digital projects and presence as a part of contemporary business environment since the proven researches and methods are strongly developed and shown in a user-friendly way with an important assumption of assigning those projects a specified labeling showing the need in ongoing correlation on the upcoming trends, scientific rationale, and policies.

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CHINA'S INCREASING FOOTHOLD IN ANTARCTICA

Preethi Amaresh

ABSTRACT: *Antarctica, that has been shielded against exploitation since several decades, is a cache of abundant resources and has been considered as a global collective where no country has territorial claims. China, since its consent to the Antarctic Treaty in 1983 has been extending its dominance and control over the Antarctic mainland and the Southern Ocean. Just like how China built an Arctic Silk Road, it is further attempting to include Antarctica into its Belt and Road Initiative (BRI) and maintain environmental artifices to advance its territorial expanse. China has already built four Antarctic bases with the fifth base to be completed by 2022 alongside setting up of a permanent airfield. The Antarctic race will forthwith follow the great power struggle in the South Pole and China's presence is set to become a commonly grave matter at the global level.*

KEYWORDS: **Antarctic Treaty, arctic silk road, Belt and Road Initiative, China, Antarctica.**

This year, 2020 signals the 200th centennial of the earliest sighting of the white continent, 'Antarctica'. The initial validated or documented sighting of mainland 'Antarctica' was in 1820, is connected to the Russian expedition that found an iceberg shelf in the shoreline of Princess Martha, which was accepted later as the 'Fimbul Ice Shelf' (Mark Eagleton, 2020). Following the late 19th to early 20th Century, many voyages were taken by colonial powers to explore Antarctica. Today, Antarctica may be the only landmass in the world that has not been affected by the COVID-19 pandemic.

ENVIRONMENTAL CONCERNS OF ANTARCTICA

For many years, Antarctica has been guarded against exploitation. It has a wealth of resources that include commercial fishing, oil, coal, minerals and hydrocarbons and has been viewed as a global collective where no country has territorial rights. Fishing in the mainland is governed by a strong global convention based on communication and good science. However, the Antarctica region is currently been aching from abnormal pressures from ocean acidification and climate change. Global warming has also been accountable for the acidification of the waters in the region. One

of the main species in this active ecosystem is krill, that is a notable element of the mainland's food web and ecosystem. Presently, Australia manages over 40 per cent of the white continent. It has attained attention as an international player in Antarctic environmental administration and continues to be a key player and an advocate of the white continent. Australia has pledged almost $190 million for its 2020–21 Antarctic programs and is one of the most requisite players in the mainland (Feiger & Wilson, 2020).

THE SIGNIFICANCE OF THE ANTARCTIC TREATY SYSTEM

The 1959 Antarctic Treaty System (ATS) was put forth during the Cold War and was supported by many countries to shield Antarctica for peaceful prospects. It was a Cold War instrument aimed at maintaining competition within the United States and the Soviet Union and concerns over geographical interests amongst the Antarctic signatory countries. This treaty later expanded into interlacing of laws and controls to what came to be recognized as the ATS that refers to sea and land, besides other international laws. The ATS prohibits any military or drilling operations in the region, but it does allow for the management of the Antarctic fisheries. Just like the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the ATS beams to check conflicts between the countries, foster international harmony and enable scientific progression. Under ATS, nations are allowed to explore one another's research facilities to not just keep all member countries aware of the projects, but also make sure that no country is up to anything perilous. Since the past few decades, the South Pole is quickly growing into an amphitheater for great power competition between countries. The New York Times in 2017 had asserted that "*maps will need to be redrawn*" when an enormous iceberg broke apart of Antarctica (Patel & Gillis, 2017). The region has lately become a barometer of a climate shift.

CHINA'S INITIAL FOOTSTEPS IN THE WHITE CONTINENT

China until late 20th century was a paltry and unprotected power, fighting to protect itself from the colonial powers**.** However, China since the last few decades has been attempting to change the 'balance of power' by enhancing its strategic influence in the white continent. China considers the region as a 'treasure dwelling of resources,' significant for its continued economic headway. China, since 1980s, commenced its participation in Antarctic activities after it opened the gateway to the world through its economic reforms. Its imperative interests in the region include security, science, resources and technology. According to the 12th Five-Year Plan (2011–2015), China began a polar engineering research network to grow and extend the research affinities in polar and space engineering that has been paying attention to the eco-rich oceanic presence in the region's waters (Brady, 2017). A paper by the Australian Strategic Policy Institute stated that China has been involved in undeclared military pursuits and mineral research that has violated international law (Brady, 2017).

Strategic moves of China in the region

China's stakes in the resource-rich Antarctica have expanded in contemporary times. It is believed that China is determined to upturn ATS that was strongly based on harmony and scientific research following the period of World War II. Since its consent to the ATS in 1983, China has been extending its dominance and control over the Antarctic mainland and the Southern Ocean. China

has named various places in the region, made substantial geophysical explorations, and strives to develop domestic presence through tourism by molding public opinions inside china through numerous forms of media and communications to set the ground for likely territorial interests. China's standard description of Antarctica is that the region associates to 'no sovereignty' that is further submerged under the rules of the ATS. China was the only nation in the world that built so many research stations in Antarctica since the 2000s. It likewise considers Antarctic mainland as an important workroom in engineering for an upper-level space program. China began its scientific research mission and its first icebreaker 'Snow Dragon 2' set off for Antarctica, in late 2019 which joined its Ukrainian built sister ship the 'Xuelong' (Zhou, 2019). It has also set up an intercontinental Antarctic sky route and is expected to use its Air Force jets soon to strengthen its capability and polar activity (Airport Technology, 2019). Australia had promoted China's expansion in Antarctica from the late 1970s. But now both countries have locked horns against each other. Australia is preparing for new impediments of rising global order. China endeavors to further include Antarctica into its Belt and Road Initiative (BRI) and continue environmental tactics to advance its territorial expanse just like how it has created an 'Arctic Silk Road' (Chun, 2020).

Chinese President Xi Jinping had briefly revealed that China firmly calls for a further considerate government to enhance global cooperation in the deep seabed, polar regions, outer space, and the internet (Champion, 2018). The Polar Research Institute of China (PRIC) plays a prominent function in providing analysis on science and technology and strategic matters in Antarctica (Sun, n.d). China likewise has four Antarctic bases with the fifth base to be completed by 2022 alongside the decision to build a permanent and robust airfield that has a thriving presence amongst the ATS signatories. The seaside waters of China have nearly been depleted with fish and it is also massively furthering in aquaculture and oceanic ranching, as China would need Krill to feed the farm fish that is available in the Antarctic region. The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) convention was implemented in 1982 as an element of the ATS. The convention asserts on the sustainability of the fisheries and concentrates on the fisheries administration prospect, which states that any fishing has to be done in a way that doesn't destroy the ecosystem. It was only in 2007 that China entered the CCAMLR (British Antarctic Survey. n.d). When it entered into the CCAMLR, China declared that the convention pertains to all fishing in the southern ocean. When China joined the convention after many years, it reached with various expectations such as strategic interest in fisheries and mainly krill. So, China desires to augment the ability to exploit the following resources.

For the Chinese Communist Party (CCP), the increasing foothold in Antarctica is a win-win strategy. Through the BeiDou satellite system, which is a twofold civil-military technology, China's polar research stations perform a decisive purpose in assisting China to upgrade its command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) system capabilities (Bommakanti, 2020). The stations set up by China's Global Navigation Satellite Systems (GNSS) has better focused on the nation's inclination to geo-shaping position automated means (Wilson, 2017)

China has a vast polar ionosphere, geomagnetic and auroras experimentation program that gains from the Arctic and Antarctic research. Since the glacial areas are undergoing warming, China aspires to shield its strategic interests in the Antarctic region. It has previously been targeting countries with regional interests in the Arctic region to increase influence by advancing and

investing in significant anchorages in Iceland, Greenland, Norway and Russia. China's presence is set to become an often-ominous concern worldwide.

CONCLUSION

The Antarctic competition could well end up as a great power conflict in the U.S struggle with China and Russia in the South Pole. Australia should consider guarding its strategic importance with investments by administering 'careful diplomacy' to accomplish its administrative and economic cooperation with China. Australia should also try building associations with countries that have similar interests in Asia and Indo- Pacific. The great power conflict for Antarctica is understandably going to become unavoidable as the Middle East oil demand is expected to fall when the global demand is predicted to peak in 2041 with 115 million barrels a day, and a gradual decline from then onwards apart from the domestic demands among the nations (Di Paola, 2020). The U.S should allow more resources and polar capacities to heighten its presence in Antarctica, and Australia should strengthen its Antarctic collaborations with Asia. Hobart's role as a gateway to Antarctica could also be promoted to Japan, South Korea and India. Australia, which is an advocate of the Antarctic region, should consider developing more high-powered diplomatic bonds with other players that share related interests and likewise to maintain 'balance of power', for better 'Antarctic governance' and to keep a 'check on China's strategic moves'.

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REAL ESTATE 5.0: SYNTHETIZING THE NEXT GENERATION OF BUILDINGS

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ABSTRACT: *The real estate sector is going through a great transformation due to the digital advancement, looming climate change and the fall-out of the COVID-19 pandemic. These forces are putting pressure on the how buildings are to be designed and managed to adhere to the new set of performance requirements. To understand the impact of these forces on the real-estate market, the paper examines how these trends are reflected in the building performance requirements and investigates the resulting effect on the competitive advantages of buildings. For that, the paper provides a review of the sector's main stakeholder groups (user, market, regulator) and trace how their requirements have evolved and how building regulations have responded. As a result, a new classification of buildings based on performance criteria that define the characteristics of the next generation of buildings is proposed. Hence, the five distinct generations of buildings are introduced: 0.0 shelter, 1.0 safe, 2.0 sanitary, 3.0 sustainable, 4.0 smart and 5.0 sterile (healthy) buildings. The COVID-19 pandemic has strengthened demand for Healthy (Sterile) Building 5.0 – a new generation of buildings – that will build upon previous generations of buildings and transform our spaces into infection resistant, healthy spaces that improve users' physical and mental wellbeing. The resulting classification of buildings provide a simple and easy tool that solves the aggregation and performance convergence problem and empower investors to gain a holistic view of their assists to better assess the required investments and the competitive advantage of their real estate.*

KEYWORDS: sustainability, smart buildings, real estate, building performance requirements, building certification systems.

We are going through an unprecedented period of time, unprecedented in its scope and depth of transformation due to the mixture of digital advancement, looming climate change and the fall-out of the COVID pandemic. This mixture has confronted individuals, companies and policy makers with difficult questions because of the current uncertainty. The coronavirus outbreak has tested the resilience of all sectors of the economy and put forward the importance of main principles of business, commonly referred to as social responsibility: transparency, accountability and sustainability (Crowther & Aras, 2008). Real estate sector is not an exception with an expected lasting long-term effect due to the current crisis (Global Real Estate Market Outlook, 2020). The COVID-19 pandemic has caused great

uncertainty to the real estate sector affecting demand, selling process and confidence in real estate (Nicola *et al.*, 2020). However, like any crisis this one will end too, and already now discussions are raging on how the sector will transform post the COVID-19 pandemic. The real estate sector stands today at the crossroads of many policies, energy and environmental targets on regional and national levels, social changes and technological shifts, that got accelerated due the current COVID-19 pandemic. The rapid digitalization of the 4.0 revolution coupled with the COVID-19 pandemic profoundly altered the performance requirements for buildings, blurred the classical borders between residential and non-residential buildings, changed building user expectations and highlighted the potential of big data to optimize building performance.

The current COVID-19 pandemic has brought new variables to the real estate with lasting medium- and long-term effects and changed the whole business philosophy of the industry (Nicola *et al.*, 2020). Already now we can point out three transformative forces that are relevant for the real estate sector.

The first one concerns ongoing digital transformation of businesses on different levels: from shifting to home officing, increase in online sales of products with increased demand on self-storage and logistic spaces, remote learning and education, to transferring to the virtual channels of delivering services like telehealth or virtual tourism. This brings changes in building performance requirements that will alter the classical definitions of real estate types, that usually distinguishes between residential, commercial and industrial real estate.

The second pillar concerns ecological transition. The real-estate sector is already under regulatory pressure to drastically cut down its energy consumption and greenhouse gas emission in order to achieve the 2015 Paris agreement targets and the UN Sustainable Development Goals (WGBC, n.d.). The lockdowns forced by the pandemic, have revealed some 'positive' side effects, such as noticeable reduction of air, noise and light pollution. This contributed to the increased pressure on the sector from a wider public to provide carbon neutral, environmentally friendly structures. The effect of which is reflected in the recently adopted EU Green Deal[1], which will facilitate formalization of stricter requirements for sustainability of buildings.

Finally, the third pillar is associated with the growing focus on health aspects, which can be observed in the ongoing campaign in favor of a healthy lifestyle. The health domain will continue to proliferate and dictate development in many spheres including the building sector, affecting principles of spatial design and performance requirements for buildings and accelerating demand for healthy spaces. The importance of the health domain in the building sector has been previously underlined by Mahesh Ramanujam, COO of the U.S. Green Building Council (USGBC) in his remarks at the Tenth International Conference on Green and Energy-Efficient Building & New Technologies and Products Expo in 2014: "It is not only green buildings, but healthy green buildings that are good for the environment" (Ramanujam, 2014). On the policy level, the current challenges are addressed by the UN-Habitat COVID-19 Response Plan, that contributes to the UN Sustainable Development Goal 11 (make cities inclusive, safe, resilient and sustainable), is focused on the city-level response to the COVID-19 crisis. It clearly addresses health domain via collaboration of UN-Habitat and WHO 'to tailor public health responses and guidance in urban settings' (UN-Habitat, 2020, p. 4).

1 See https://ec.europa.eu/info/research-and-innovation/strategy/european-green-deal/call/energy-and-resource-efficient-buildings_en.

In this paper, we look at how the real estate sector have transformed as the result of above-mentioned transitional forces and outline the features of the next generation of buildings. The paper examines how the mixture of sustainability, digitalization and health are reflected in the building performance requirements and investigates the resulting impact of these changes on the competitive advantage of the real estate objects. For that we have reviewed the sector's main stakeholder groups (user, market, regulator) and have traced how their requirements have evolved over time and how building regulations have responded to these changing requirements. As a result, we propose a new classification of the building types based on performance criteria and identify the characteristics of the next generation of buildings. Hence, the "S" Pyramid of Buildings Generations" defines five distinct generations of buildings: 0.0 shelter, 1.0 safe, 2.0 sanitary, 3.0 sustainable, 4.0 smart and 5.0 sterile (healthy) buildings. The Smart Building 4.0 reflects the existing fourth generation of buildings that transcends the sustainability issues and absorbs the advantages of Industry 4.0. The COVID-19 pandemic strengthened the demand for fifth generation of buildings – Healthy (Sterile) Building 5.0 – a new generation of buildings that will build upon the requirements of indoor air quality (IAQ), indoor air hygiene, toxic free environment, thermal, acoustic and visual comfort of the second and the third generations of buildings and take advantages of the Industry 4.0 innovations to optimize the building performance to meet these new requirements. In essence, the Building 5.0 is to transform our buildings into an infection resistant, healthy space. It will provide spaces that can limit aerosol, droplet, and airborne transmission of infectious diseases and improve users' physical and mental wellbeing.

PERFORMANCE-BASED DESIGN: EVOLUTION OF BUILDING REQUIREMENTS

The perception of what a building should be expected to fulfil has evolved over many centuries. The basic function of a "shelter" has developed to include other aspects related to occupant health and safety. Within the past century, we have witnessed a proliferation of a wide range of societal concerns such as sustainability, energy and resource efficiency, as well as accessibility, and indoor air quality (Meacham, 2010). Worldwide this has triggered a strong interest in altering the traditional prescriptive building requirements into performance-based (Foliente, 2000; Sexton & Barrett, 2005). The advantage of functional, objective-based or performance-based approach is that it does not limit opportunities for innovative buildings as it focuses "on what must be achieved, but does not interfere with the designer as to what materials to use or how to assemble them. The designer has considerable flexibility in selecting materials, products and systems that can achieve the required performance" (Meacham *et al.,* 2005, p. 24). Moreover, performance-based building "guides and encourages the generation and implementation of appropriate new ideas by relevant actors throughout the building life cycle, which enhances overall building performance and satisfied actors' needs" (Sexton & Barrett, 2005, p. 147). The performance approach can be used in both regulatory and non-regulatory context. At the same time, more and more countries are integrating performance-based regulations in their building codes (Lützkendorf *et al*., 2005).

The main stakeholders, that impose specific performance requirements to the building during different stages from planning to operation, are well identified in the available literature (Becker, 2008; Lützkendorf *et al.*, 2005). It is possible to reorganize them into three groups – users (occupant, owner, operator and public), market (investor, finance, insurance company, planner, manufacturer, contractor, research) and regulator (government, authorities, regulatory frameworks). The formalization process of the performance requirements has evolved over time

in an adaptive process that integrates a number of cross-cutting topics from safety and security to sanitary, comfort, sustainability. At the same time, stakeholders' performance requirements went through an evolutionary process that reflected advancement of building performance over time. By tracing this process of 'building up' performance requirements one over another, we distinguish between five generations of buildings, which is represented and visualized in the "S" Pyramid of Building Generations", that we are to describe in detail in the following.

Figure 1: "S" Pyramid of Buildings Generations reflecting evolution of stakeholders' performance requirements. Source: self-constructed.

The Generation 0.0: Shelter

Modern buildings trace their origin to the first shelters constructed by humans around 380,000 BC (Behling & Behling, 2000). These early structures had clear and basic functional requirements that correspond to the fundamental human need – shelter – that is shelter from weather, climate, predator, etc (Gaskell, 2019). Although traces of comfort and safety performance aspects can be detected, they were far from being universal. The basic functional user requirement is at the core of the Building 0.0 (Shelter) and serves as a foundation for further requirements.

The First Generation: Safe Building 1.0

With the development of the sedentary lifestyle of humans and creation of settlements, early communities started to take shape and buildings as distinct human made structures started to appear. With the establishment of early communities, a new stakeholder, namely, the regulator, appeared and played a crucial part in influencing the formation of the first generation of buildings. According to the first known building regulation – so called the Hammurabi's code (1754 BC), the most important function of a building was determined as structural safety: Article 229: '*The*

builder has built a house for a man and his work is not strong and if the house he has built falls in and kills a householder, that builder shall be slain.' (Cited in Foliente, 2000, p. 13). From the perspective of the performance-based approach, this statement reveals the basic performance requirement of the building – safety, that is "the building should not collapse and kill someone" (Foliente, 2000, p. 13).

The demand for the extension of building regulations has increased in response to growing cities and increasing risk of fires. The Great Fire of London in 1666 is considered as an accelerator for more formal regulations in the sphere of fire protection contributing to the safety of housing. In response, the Rebuilding of London Act was passed, specifying the building regulations in order to prevent the devastating destructions caused by fire. This document is considered as origin of the modern use of building regulations (Fischer & Guy, 2009).

This shows that the evolution of the building performance criteria starts with the basic need of the end user – safety, that has been required from the building from the early on. In other words, the first generation of buildings meets the requirements of shelter and extends its performance to be safe.

Second Generation of Buildings: Sanitary Building 2.0

The industrial revolution in the late 18th century and the related economic boom and massive urbanization brought with it a plethora of social and health problems (Kelley & Williamson, 1984). The Public Health Act of 1848, legislating on the sanitary conditions of England and Wales is considered to be a milestone in public health and have addressed among others repair of sewers, control water supply, controlling of new streets and buildings (Fee & Brown, 2005). Rapid growth of cities fueled concern over the spread of diseases in big cities and accelerated further development of building regulations in the dimension of providing sanitary conditions. Thus, the second generation of buildings, Sanitary Building 2.0, puts forward sanitary requirements for buildings that nowadays became embedded in all building codes, which means that all buildings should fulfil these minimum building requirements.

Through 1950s and 1960s countries' building codes had been addressing a wider range of sanitary and safety aspects, including air exchange rate, water and waste-water, windows, light, structure, fire, toxic hazard, etc. (See, for example, Legislation.gov.uk, 1948; ICBO, 1964). However, one can argue that the introduction of new performance requirements for buildings on the legislative level proceeds with a very slow pace and remains within the safety and sanitary sphere. Thus, most of the existing building stock belongs to the second generation of sanitary buildings, either due to outdated regulations or due to the fact, that most of the existing building stock was built during the post WWII construction boom of the golden age of capitalism (1950s – 1970s).

Third Generation of Buildings: Sustainable Building 3.0

The building performance requirements started to grow further from the late 1960s onwards covering environmental aspects. One can argue, that the third generation of building, Sustainable Building 3.0, has evolved as a response to a number of events starting from the environmentalism movement of the 1960s (Griswold, 2012) and the creation of the U.S. Environmental Protection Agency (EPA) in 1970, that aimed to protect human health and the environment via setting the

goals and standards.[2]

"The Limits to Growth" of the Club of Rome (Meadows, 1972) generated a wide range of controversial responses, triggering, more attention to the overuse of natural resources. Together with the energy crisis of 1973 and dramatic increase in oil price, it accelerated introduction of stricter thermal regulations in order to reduce energy consumption. For example, the UK regulations have included requirements on thermal insulation (Legislation.gov.uk, 1972) as well as the regulations for new buildings in the US have included energy conservation for the first time in the Uniform Building Code of 1979 (ICBO, 1979).

In response to growing international interest in sustainability, the UN commissioned the establishment of the World Commission on Environment and Development (WCED) with the goal to tackle the sustainability problems of the modern world. Consequently, the WCED published its first report "Our Common Future", which presented the first definition of sustainable development – "*development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs*" (WCED, 1987, p. 43).

With the growing interest in sustainable buildings, independent sustainability certification systems have been developed. Starting with Building Research Establishment Environmental Assessment Method (BREEAM) established in 1990, today many voluntary sustainability or green building rating schemes (over 100 labels) assess and recognize sustainable buildings based on a number of requirements or standards. It is predicted that the number of sustainability rating tools will continue to increase due to the growing interest in certifying buildings. (Sbi.dk, 2018). Sustainable building certifications, evolving as a result of the market shifts, help drive innovation by formalizing sustainability performance criteria, transforming innovative solutions to the norm. Most sustainability assessment systems are based on the triple bottom line (TBL) framework and address environmental (e.g. resources, emissions, toxicity), economic (e.g. life cycle costing, value stability) and social (e.g. health, safety, social responsibility) dimensions of sustainability.

The misalignment between the growing public interest in sustainability (user) and the slow response of the authorities (regulator), the market as an important player in formulating the building performance requirements started to take the lead. This resulted in a proliferation of sustainable buildings. Sustainable building, also earlier referred to as green building or high-performance building, utilizes the practice of increasing building and resource efficiency, improved user comfort and reduced carbon footprint (Dator, 2010). It is important to note that energy efficiency remains an important aspect of sustainable buildings, but not the only criterion. Till recently, the building regulations (minimum requirements) prioritize two aspects – reducing CO2 emissions and decreasing energy consumption of buildings. The regulator has been focused mainly on the energy and emissions side of sustainability without adequately addressing social and economic dimensions of sustainability.

The different aspects of sustainability or 'greenness' of buildings became slowly formalized in the local building requirements (laws). For example, many cities in United States specify LEED standards in their building codes (Nelson, 2007). In the EU, steps have been taken to address the shortcomings of the existing regulations. Likewise, the European Commission has adopted a new Circular Economy Action Plan as one of the main blocks of the European Green Deal. The new

2 See https://www.epa.gov/

Action Plan announces initiatives along the entire life cycle of products, including construction and buildings (EC, 2020). It refers to using Level(s) – a framework to help design and construct sustainable buildings – to promote circular economy processes.

Fourth Generation of Buildings – Smart Building 4.0

The Industry 4.0 revolution resulted in an addition of the 'smart' dimension to the building functions, enabling transition to the fourth generation of buildings – Smart Building 4.0**,** which is considered to be the current state of the art. The evolution of today's building functions from shelter and safe to sustainable and smart is only possible through an increased dependency on IoT sensors, automated systems and AI application. Among most significant innovations affecting the construction, use, and management of real estate are robotics, augmented and virtual reality (AR/VR), sensor technology, Internet of Things (IoT), smart grids and Building information modeling (BIM) (Deloitte, 2018).

Smart buildings optimize the building performance in all aspects of the previous generations. They enable bidirectional information flow between the building and its greater service networks (heat, power, IT, etc.), and improvement in user convenience (drone deliveries, remote control, live fed information, etc.). In result, one can say, that the introduction of smart performance criteria to the fourth generations of buildings, Smart Building 4.0, is transforming the golden rule of the real estate investment to 'connection, connection, connection'. For instance, application of AR/VR can enhance connectivity by enabling virtual visits. Sensors and IoT can enable remote monitoring, remote inspection and repairs. The BIM promotes the use of building information to create of digital twins and live building models.

The new thematic trends in certification systems address the performance requirements of the fourth generation of buildings. This is evident in emerging labels, such as WiredScore[3] which focuses on the quality of internet connectivity in office spaces and R2S label (Ready to Services), which determines the requirements "*to be met by a Smart Building, an open and communicating building, ready for the services*".[4]

The implication of Industry 4.0 technologies and the sustainability objectives are tightly connected. There is a strong relationship between Industry 4.0 technologies and all 17 United Nations Sustainable Development Goals (SDGs) (Bai *et al*., 2020). In regard to sustainable cities and communities (SCC), Industry 4.0 technologies contribute to the creation of inclusive, safe, resilient and sustainable cities. In the dimension of affordable and clean energy (ACE) as well as combatting fuel poverty, automation technologies and smart systems have potential to increase energy reliability and cost saving.

The second recast of the Energy Performance of Buildings Directive (EPBD) is based on the EU's goal of developing sustainable, competitive, secure and decarbonized energy systems and integrates many requirements regarding the acceleration of deep energy renovation of buildings in Europe (Hogeling & Derjanecz, 2018). The recast of EPBD acknowledges the crucial role of smart technologies in buildings and expands direct requirements for building automation. Moreover, it is envisaged that the introduction of an EU wide rating scheme for the "smart

3 See https://wiredscore.com/en/

4 See https://www.smartbuildingsalliance.org/en/project/r2s-frame-of-reference

readiness" of buildings will foster the transition to smarter buildings. It is possible to conclude, that the foundation to formalize smart attributes of performance requirements has been set and every new building in the future will have to meet these new performance requirements.

Fifth Generation of Buildings – Sterile (Healthy) Building 5.0

Health campaign, bundling on the powers of the 4.0 revolution, is providing access to a range of applications and tools to help people stay healthier and adopt a healthier lifestyle. A growing number of online fitness training and dietary consultancy services coupled with new products, focusing on improved health benefits, as well as widely spread smart watches and health application, are to accelerate the transition towards a "healthy life" as a need and value. This will provide the real estate business with opportunities as well as impose certain challenges for existing buildings of the previous generations. The COVID-19 pandemic highlighted the importance of the quality of the air we breathe, especially because we spent 90% of our time inside buildings.

The current requirements for buildings focus on measuring indoor air hygiene and indoor air quality, moisture and mold safety, hygiene and water quality. They basically address health from sanitary and safety perspectives. At the same time, smart and sustainable buildings are already addressing the need to reduce buildings' impact on both the environment and human health. Sustainable buildings use non-toxic building materials in their construction, which promote healthy indoor environments with minimal pollutants (Dator, 2010). The importance of indoor climate and indoor air quality (IAQ) for health and comfort has been receiving increasing attention (Sateri, 2004). IAQ is generally defined as the physical, chemical and biological properties that indoor air must have, in order not to cause illnesses, and to secure high level of comfort to the building occupants (Sateri, 2004). Improved thermal and visual comfort, high quality acoustics, air and illumination of sustainable buildings may also promote the comfort and well-being of building users. However, this viewpoint of health performance criteria reflects basically functional, safe and sanitary aspects of user requirements.

Consequently, we trust, that the current focus will shift towards Sterile (Healthy) Building 5.0. This new generation of buildings will seek to reduce the spread of diseases, and at the same time, to improve the metal and physical health of its occupants. This will require a change in the way of how the building spaces and systems are designed, constructed and used. The fifth generation of buildings, Sterile or Healthy Building 5.0, will put a priority on previously identified health attributes of performance requirements and will go beyond by formulating requirements to allow for providing spaces that are resistant to the aerosols, droplets, and airborne spread of diseases. This might be achieved through redesigning the doors and windows so that they become usable without doorknobs and handles. Touchless faucets as well as automatically disinfected surfaces will become mandatory. Elevators will be operated *via* gestures; hand-rails will be subject to sterilizing UV light. Lighting will be sensor-based and electricity will be wireless to eliminate disease spread *via* light switches and electrical sockets. Air filters and ventilation systems will designed to reduce airborne transmittance. This will require a wider adoption of Industry 4.0 technologies in the building sector.

Currently, an increasing number of certification systems are shifting their focus from sustainability

and smartness of buildings to health and the wellbeing as in WELL[5], Fitwell[6], Living Building Challenge.[7] Indeed, the improvement of occupant health and wellbeing is listed as second-important drivers for building certifications according to The Sustainability Certification Barometer 2019 (Greensoluce.com, 2019).

It should be admitted that the formalization of stakeholders' requirements for buildings in the legislation lags behind the current real estate market demand. Embedding the performance requirements reflecting this 'sterile' (healthy) dimension in building codes might take some time.

CLASSIFICATION OF BUILDING GENERATIONS: APPLICATION FOR THE REAL ESTATE MARKET

Difficulties to understand requirement processes or multiplicity of certification schemes are listed among the main challenges to promote sustainable and smart buildings (Greensoluce.com, 2019), which makes convergence and interoperability of building performance criteria increasingly important. The globalization of the real estate market implies that buildings are becoming traded in a global market, which requires information to be standardized and easily accessible to different market actors, including stock market investors and portfolio managers. From this perspective, building performance criteria need to be easily comparable between different countries and systems, so that they can be used by a wider audience to better assess real estate objects (Lützkendorf *et al.,* 2005).

Therefore, we believe assigning performance requirements to certain generations of buildings can solve the problem of lack of convergent information about buildings. The proposed classification of generations of buildings can empower investors and owners to better understand, improve, and promote their buildings as well as better assess the competitive advantage of their real estate. Moreover, the proposed classification is a universal system that is easy to comprehend, which, in turn, will allow for new players/stakeholders to have a greater voice in the real estate market (such as crowdfunding, etc.). Every stakeholder will be able to better understand the expected performance of the building and assess whether it reflect their investment needs.

Given the current multitude of different certification systems, legal requirements at local, national, regional and international level, the proposed classification of the building generations contributes to the use of harmonized language on national and regional real estate markets, making it possible for regulators to evaluate the impact of their policies (e.g. structural funds and public building renovation schemes). Hence, the proposed "S" Pyramid has a potential to provide the institutions in charge of transnational policies, such as the European Commission, with the possibility to obtain an overview about the overall impact of financial tools and will make it easier to determine the strategical goals in the building sector. Moreover, a regulator can use it as a tool to communicate its policies to general public. It can also serve managers of transnational building stocks as they can obtain an overview of their real estate portfolios and potential investment requirements. Using the proposed classification of generations of buildings is a unique and simple tool for investors in real estate funds to compare the value of different generations of buildings in different countries.

5 See https://www.wellcertified.com/
6 See https://www.fitwel.org/
7 See https://living-future.org/lbc/

CONCLUDING REMARKS: FROM CHALLENGES TO OPPORTUNITIES

From the economic perspective any crisis or change comes hand in hand with hidden benefits to communities as a whole and to entrepreneurs in particular. There are direct business opportunities emerging in telecommunications, health care, production of safety and ecological products, etc. In the real estate industry, the advancement of user needs and expectations for buildings stems from the development in the product market due to Industry 4.0 and climate change that stimulate increased number of different tools and create new user needs, like smart devices, sensors, IoT, etc. Buildings respond to these changes and trends on the product markets. The requirements of sustainable Building 3.0 and smart Building 4.0 generate, in turn, a growing demand for new smart tools, sustainable materials and applications. The shift of user needs towards healthy spaces, that are resistant to transmission of infectious diseases and promote well-being, will also facilitate the use of innovative tools that will enable these transformations. As real estate becomes a service and the user is a consumer, ultimately, implementation of evolved user needs may translate into long-term competitiveness of real estate objects.

In regard to financing opportunities, one can argue that ongoing economic and health crises cannot contribute to ecological progress as companies and governments do not have resources to invest, but need to ensure ongoing liquidity. On the other hand, the stimulus plans to facilitate economic recovery should be favoring sectors and technologies that will allow us to build more sustainable and resilient economies. This means that public investment funds may play ever-larger role in financing sustainable, smart and eventually healthy (sterile) buildings, providing greater capital funding for investors cautious to evolving user needs and expectations. Moreover, new business opportunities will arise in connected industries.

Buildings do not exist in isolation as they are a part of a wider grid. Being an active part of the system, they produce, export and import services. Smart buildings require interaction, and starting from the fourth generation of smart buildings, the golden rule for real estate investment will be 'connection, connection, connection". This means that, due to growing digitalization, proliferation of remote work, interconnectedness *via* internet, blurring borders between residential and commercial real estate, the principle of 'location, location, location' as a rule of desirability and value of real estate would not come in the first place. The value of buildings would not be linked predominantly to their location anymore. The decisive factor will be connectivity of buildings, that is their connection to other buildings and infrastructure within the neighborhood, connection to renewable sources of energy, connection to the services (communal services, internet, health care), to the network and to stakeholders, which will enable bidirectional flow of information and resources and contribute to health and wellbeing of building users.

Currently, demand for the third generation of buildings (sustainable) is driven by increasing public demand for sustainability, governmental incentives, stricter building codes as well as the attractiveness of the sustainability image to investors. We believe, the investment demand for smart and healthy buildings can lag behind due to still weak public sector policies, lack of specialized knowledge and experience to design and operate smart buildings successfully as well as misalignment between investor costs and user benefits. In order to address these challenges, a coordinated effort between the public domain, the real estate market, the higher education and specialized training institutions is required.

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AN EMPIRICAL STUDY OF SERVICE QUALITY PERCEPTION IN BRAZILIAN PUBLIC SECTOR

Lie Koba & Antonia Koumproglou

ABSTRACT: *This is an empirical-descriptive research based on SERVPERV model to investigate the influence of 5 dimensions (tangibles, reliability, responsiveness, safety and empathy) on the service quality perception in Manaus which is one of the main cities located in the North region of Brazil. In addition to the SERVPERF dimensions, the possible influence of the 3 following factors have also been tested: customer-orientation, continuous improvement and innovation. The findings indicate that the level of satisfaction differs across the regions of the country and that reliability plays a crucial role in the process of satisfying users. Moreover, customer-orientation and innovation were also found to influence the satisfaction of service quality. Although the service quality awareness and related regulations have gained more importance in the public sector in the last few decades, there is limited amount of studies in the country. Surveys data available show discrepancy in service quality perception between providers and users which indicates that policies might be being designed based on inaccurate data. This research will examine the quality perception of public service considering the user's perspective and aims to fill data void of the referred region by giving a better insight on citizen's perception and add to the construction of a basis which will reflect in changes in the public sector.*

KEYWORDS: **SERVPERF, service quality, public sector, Brazil.**

Service quality has been a key factor for private organizations to compete and succeed in a global business environment. However, in the recent years, the concept of service quality has also been gaining importance in the public sector led by the increasing society awareness and knowledge as it determines the level of a nation's competitiveness and the performance of the government (Hsiao & Lin, 2008). However, despite the recognition of the importance of the public sector function, there is a popular belief that the public sector performance is inferior when compared to the private sector which also relates to the popular common perception that the public sector is ineffective and inefficient (Poister & Henry, 1994).

Within this context, some researchers advocate the idea of transferring the positive experience

of the private sector to the public sector, supported by external agencies to evaluate this segment from the customers point of view. Wellers (cited in Magd & Curry, 2003) supports this approach by suggesting the use of benchmark in the public sector in order to improve service quality towards a change from 'public sector organizations' to' organizations of quality' by adding value to the public service users. As quality in public services tends to be a global common goal, national governments are increasingly pursuing changes towards a customer-orientation approach. Therefore, focus on the user's needs would be an essential element in service quality. In amidst of this movement, the present research will investigate the level of the public service quality perceived in Brazil with focus on citizens of Manaus city as it is one of the main cities located in the North region.

This research will analyze the perception of service quality from customer's point of view through SERVPERF methodology proposed by Cronin and Taylor (1992). This methodology evaluates customer's satisfaction on 5 dimensions (tangibles, reliability, assurance, empathy and responsiveness) based on perception of the service provided. In addition, 3 hypotheses will be tested:

H1: Customer orientation approach influences the perception of satisfaction in service quality.

H2: Continuous improvement practices influences the perception of satisfaction in service quality.

H3: Innovation influences the perception of satisfaction in service quality.

LITERATURE REVIEW

The Public Sector

Public sector refers to the part of the economy which is under government's control (Collins, n.d.) and consists of organizations that provide services to attend the community's interest (Poister & Henry, 1994). Considering the essential function of this sector within the society, the organizations that are part of this system are arranged to offer the public services which are considered essential to the wellbeing of the community. In Brazil, the Public Sector emerged during the Imperial Period in 1808 when the country still was a Portuguese colony. However, there were no specific regulations for the public sector until 1939 when the first related documents were created. In 1988, with the promulgation of the constitution, the public sector in Brazil was given a better quality to the public service by establishing the public tender, providing equal opportunities to all citizens and avoiding nepotism (Negreiros, 2014). In 1995, a civil service reform was undertaken in Brazil during the administration of President Luiz Carlos Bresser Pereira. This reform was known as the State Reform Plan and aimed at improving productivity in the public sector and lasted until 1998 (United Nations, 2004). According to Puppim de Oliveira (2017) the current form of public administration has been greatly influenced by this State Reform which was based on New Public Management principles. The public sector has been switching to the adoption of a new form of management towards a more transparent and open form of government, increasing the access to information and citizens participation in the public administration.

It Is worth to note, however, that despite measures towards a cleaner public service, Brazil is perceived as a highly corrupt country. According to the data provided by Transparency International in 2003 (cited in United Nations, 2004), Brazil scored 3,9 out of 10, where 10 stands for perception of 'highly clean' country whereas 0 stands for 'highly corrupt'. This suggests that unethical practices hinder the development of an effective public administration.

Service Quality

The concept of quality was initially used for goods. With reference to the tangibles, Crosby (cited in Sharabi & Davidow, 2010, p.190) defined quality as the 'conformance to standards and specifications'. However, the boom of the service industry by the end of 1980s brought a different perspective on quality and, since then, the term for services seems to have not yet achieved a common definition among scholars and researchers. Magd and Curry (2003, p.265) explain that quality in public sector refers to the 'extent to which a product or service meets and/or exceeds consumer's expectations.' It is notable the efforts performed by the public sector to implement quality programs. The benefits are translated into operational efficiency. Focus on quality practices improve efficiency as it reduces losses caused by errors. Moreover, with the increasing demand for better services from the users, public institutions are pressured to keep improving the level of services provided. Such level, in turn, serve as an indicator of a nation's welfare state and, consequently, serve as a parameter of a country's economic state (Magd & Curry, 2003). For this reason, the performance of the public service is at the center of the governments' concern.

Models related to service quality are constantly evolving. Consequently, several service quality models have been created or adapted to date. For this research, it will be followed the classification proposed by Ghotbabadi *et al*. (2012) who have carried out a literature survey and concluded that the most relevant models that formed the basis of the current service quality models are four, as follows:

Nordic model (or technical and functional model): Designed by Grönroos in 1984, it was the initial attempt to define quality and assess its performance based on technical (product) and functional (delivery process) qualities. Seth et al. (2005) have included 'image' in this model as it would be a consequence of the first two qualities. Due to the lack of technique to measure those outputs and tests, this model has had weak support.

GAP or SERVQUAL model: Proposed by Parasuraman, Zheitaml and Berry in 1985, this assessment is based on the discrepancy between expectations and perceptions of the delivered services (gaps).

This model is considered as an improvement of the Nordic model as it has included service quality measurement through five dimensions: reliability, responsiveness, assurance, empathy and tangibility. According to Cerchiaro (2006), such dimensions are defined as:

Tangibility: Physical facilities, personnel's appearance and equipment;

Reliability: Competence to deliver the promised service in a correct and trustful fashion;

Responsiveness: Eagerness to assist users and deliver the service on time;

Safety: Kindness and knowledge towards customers and capability to instill confidence;

Empathy: Individual attention.

In 1992, Cronin and Taylor proposed the SERVPERF model which focused solely on the service performance and excluded expectations. These authors argued that the expectations considered to evaluate the level of quality of a service do not express correctly the customer's perception and advocated that only performance can properly measure the service quality (Cerchiaro, 2006).

Multi-level model: Also known as the Retail Service Quality Model, it was proposed by Dabholkar, Thorpe and Rentz in 1996 to allow measurement in retail store and encompasses a three-level structure: perception of service quality, primary dimensions and sub-dimensions. This model,

however, does not have wide applicability since the attributes of sub-dimensions are not clarified and additional aspects such as prices and environment shall also be taken into consideration when assessing service quality.

Hierarchical model: A combination of the previous three models, it has clarified the factors that are relevant to service quality assessment. Brady and Cronin suggested this model in 2001 and added a definition of service quality perception and measurement method to the SERVQUAL model by clarifying the service outcomes. Three dimensions are used in this measurement: (i) quality of interaction, (ii) physical environment, and (iii) outcome quality (Pollack, 2009, cited in Ghotbabadi *et al*., 2012).

Since the objective of this research is to examine the overall performance level of the service quality rather than examining the causes of possible shortfalls that would assist managerial decisions, which would be provided by SERVQUAL measurement method, SERVPERF is considered to be the most suitable to provide data for the purpose.

Public Sector in Brazil

Despite the availability of large amount of data and information about public service from developed countries, there is limited literature about its performance in Brazil.

In November 2018, the Federal Government published, for the first time, the results of a survey regarding the quality of public services. These results refer to the first phase of the survey and asked managers of public institutions to verify their perceptions with regards to the service quality measurement (Brazil, 2018b).The results indicate that the major part of the public organizations have no performance indicators with regards to their efficiency and users' satisfaction. Interestingly, most part of the managers evaluate the services provided as satisfactory (in average, 70% of managers self-scored 7 out of 10 where 10 stands for excellent; 3,5 if converted into 1-5 scale). Since the data provided relate to the public services at the federal level, it will serve as a reference since the public services to be analyzed in the present research are diverse from the ones presented in the survey above-mentioned.

Differences Among Regions in Brazil

Brazil is officially divided into 5 regions by Brazilian Institute of Geography and Statistics (IBGE) since 1969: North, Northeast, Central-West, Southeast and South. However, Pedro Pinchas Geiger proposed in 1967 a territorial division based on historical process of the Brazilian development, mainly focused on the industrialization (Furlan, n.d.). Known as geo-economic regions, they are classified in Amazon (referred to as North region in this research), Northeast and South-Central regions. This classification is useful for this research as it reflects the real contrasts among regions, clustering areas according to the economic, historical and cultural similarities and thus, grouping areas with similar social indicators.

Geo-economic regions:

(1) Amazon

(2) South-Central

(3) Northeast

Figure 1. Brazilian geo-economic map. Source: Wikipedia (2019b).

Furlan (n.d.) explains the regional differences as follows:

Amazon (North): Despite being the largest region, it is the least populated area. Major part of the population is concentrated in 2 main capital cities: Manaus and Belem. The economy relies on animal, vegetal and mineral extractivism. Industry is also notable part of the economy. According to Peixoto (2009), this region was part of Spanish colony during the first years that followed the discovery of Brazilian land and later was actively colonized by the Portuguese. The region went through brief periods of prosperity during rubber boom. With its end, animal and vegetable extraction (mainly soy and livestock) became the flagship of the region's development.

Northeast: The oldest region in terms of historical records but also the poorest area with high child mortality, illiteracy and malnutrition rates. Population is concentrated in the coast and capital cities. Bernardes (2007, cited in Brito & Damazio, 2018) explains that the region has developed based on the relation between the elite with economic powers (landowners) and the productive base (mainly slaves). The region is historically characterized by the exploration of *Pau Brasil* - Brazil wood (Wikipedia, 2019c), large export of sugar from 16th to 18th centuries and livestock. However, land concentration, income inequality and drought have caused many inhabitants to look for other regions since colonial period (Wikipedia, 2019d).

South-Central: Considered the most economically developed area as it is the main source of the country's GDP. It is also the most populated region where Sao Paulo and Rio de Janeiro are located. This region is mainly industrial and also a big exporter of agricultural products. Bernardes (2007, cited in Brito & Damazio, 2018) describes that the region has prospered through agricultural production which was influenced by European immigrants. Small production units originated industries and the agribusiness expanded to other industries. Currently, industries and services are the main economic factors.

METHODOLOGY

A survey was carried out by applying questionnaires with public service users as this tool allows to collect current primary data about the service quality perception with users in Manaus city. Social media and mobile application were used as data gathering means which was supported by word of mouth tactics which aimed at reaching different groups of people.

Stratified sampling was applied for collecting samples. Empirical studies conducted by Sivesan and Karunanithy (2013) indicate that demographical factors that influence service quality perception are age, income levels and education level. Another study carried out by Christia and Ard (2016) showed a similar result and concluded that age, income and ethnicity are factors that influence the quality perception. This said, this research considered age strata for sampling. Since income level is judged as respondent's sensitive data, this data was opted for not being asked in the questionnaire.

As to the reliability, the statistical tool Cronbach's alpha was used to verify consistency of the data.The questionnaire is composed of total of 32 questions, 22 being based on SERVPERF model. A few adjustments have been executed in the questions to adapt to a few specificities of the public services, observing to not alter the essence of the SERVPERF model.

First part of the questionnaire relates to the respondents' profile in terms of age, gender and education level. In the second part, respondents were asked to select one public service they commonly use and they would wish to evaluate out of 11 options as follows: (a) Electric power supply / street lighting, (b) Water supply, (c) Department of traffic, (d) Public school / university, (e) Cleaning / garbage collection service, (f) Postal services, (g) Public transportation, (h) Road paving, (i) Public safety, (j) Airport and (k) Hospital / Emergency care units.

The evaluation was performed based on the 5 dimensions given by the SERVPERF model: tangibles, reliability, responsiveness, safety and empathy (questionnaire in the Appendix).

In addition to SERVPERF-model-based questions, statements to verify customer-orientation, continuous improvement and innovation were also included in the questionnaire for hypotheses testing (See Appendix). Data were submitted to analysis of variance (ANOVA) at 95% level of confidence where 'customer satisfaction' was used as the dependent variable whereas the additional factors served as independent variables for regression analysis.

Literature about service quality frequently mentions the concepts of Total Quality Management (TQM) which involves tools for continuous improvement, customer-orientation and innovation. Lagrosen and Lagrosen (2003) have identified these factors among the core values of the quality management which reinforces the applicability of the questions included in the research.

For all the questions related to the service quality perception, respondents were asked to assess service quality of the chosen public institution by giving opinion on a likert-type 5-point scale ranging from "1" Completely disagree to "5" Completely agree (being "3" the mid or neutral

point) for 22 statements given in the questionnaire which were based on SERVPERF model and to 6 additional questions for hypotheses testing, except for the question related to the frequency of the issues solved and overall satisfaction (questions designed by the researcher).

FINDINGS

Demographics

From 100 questionnaires collected, 95 were usable which corresponds to 0,005% of the population of Manaus city based on 2010 census. Demographic details are described below.

Table 1. Research data - Demographics. Source: Research data

Item	Category	Samples	%
Gender	Male	42	44
	Female	53	56
Age (years old)	18 to 24	12	13
	25 to 34	44	46
	35 to 44	26	27
	45 to 54	11	12
	55 to 64	0	0
	Over 65	2	2
Education	Incomplete primary education	0	0
	Incomplete secondary education	3	3
	Incomplete higher education	27	28
	Complete higher education	65	68

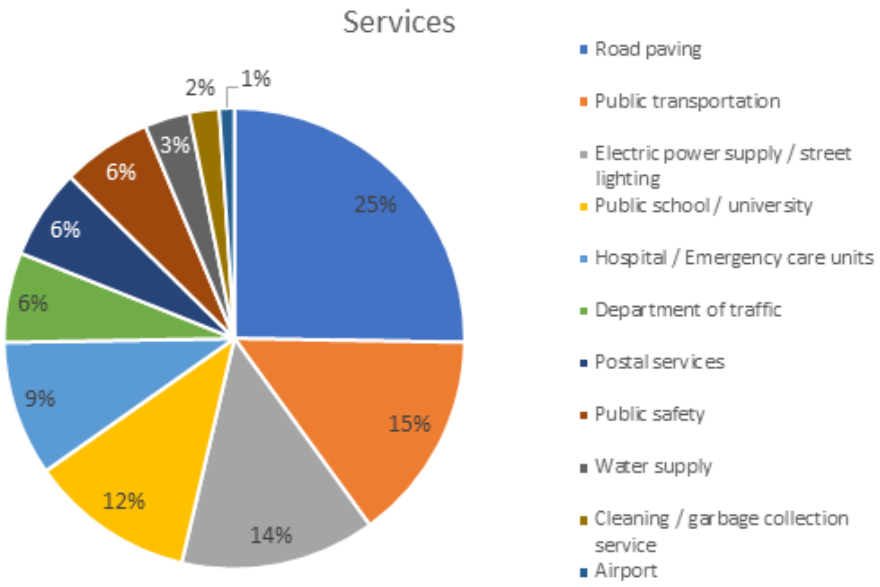

Figure 2. Research data: Public Services. Source: Research data

Data reliability

Data consistency was verified by applying Cronbach's alpha as per the formula:

(1)

$$\alpha = \frac{K}{K-1}\left[1-\frac{\sum S_i^2}{S_T^2}\right]$$

Source: Leontitsis & Pagge (2007), cited in Rocha et al. (2016)

Where:

K = number of items (or questions)

Si^2 = variance of each item

ST^2 = variance of total scores

Evaluating the consistency among SERVPERF dimensions, the measured Cronbach's alfa is 0,93 which indicates a high level of internal consistency and stability of the tool[1]. Cronbach's coefficient has also been calculated for each dimension and is summarized in Table 2.

Table 2. Cronbach coefficient value. Source: Research data.

Dimension	Cronbach's alpha
Total	**0,93**
Tangibles	0,63
Reliability	0,85
Responsiveness	0,69
Safety	0,88
Empathy	0,82

As it can be seen, when Cronbach's alpha coefficient is individually measured, 'tangibles' and 'responsiveness' present coefficients below 0,70. This value is largely accepted by most of the researchers as the minimum acceptance level to confirm data reliability. However, consensus on its interpretation seems to not have been reached. Bolarinwa (2015) mentions that a higher coefficient value can be obtained by adding items in the measurement scale. This, however, would increase the length of the questionnaire which would affect the willingness of respondents to complete the survey.

On the other hand, Streiner (2003, cited in Tavakol & Dennick, 2011) argues that value higher than 0,9 might indicate that items are redundant and thus, reliability would be overestimated.

Since this study is based on a descriptive approach, a low level of internal validity is deemed acceptable since this research does not aim to clarify the reasons of the characteristics found but rather describe the characteristics of a certain phenomenon or population (Wikipedia, 2019a).

Table 3. Survey results. Source: Research data.

Dimension	Mean	Median	Std. deviation
Tangible	2,51	2,00	1,21
Responsiveness	2,48	2,00	1,32
Safety	2,46	2,00	1,19
Empathy	2,31	2,00	1,19
Reliability	2,21	2,00	1,20

1 When hypotheses factors are included, the total coefficient is 0,94.

The results of the survey indicate that scores for all dimensions are low. Analyzing the scores of 5 dimensions, 'reliability' scored the lowest with mean of 2,21, followed by empathy, safety and responsiveness (see Table 3). Tangibility was rated the highest score. However, it is worth to note that the score of the highest rated dimension is below the medium point of the full scale. This demonstrates that the perception of the public service users is, in general, negative in terms of services provided.

The table also shows that the median is 2 for all dimensions[2]. The lowest standard deviation is 1,19 for 'empathy' and 'safety' whereas the highest is 1,32 for 'responsiveness'. The standard deviation indicates how dispersed the sample data are in relation to the mean. The low range of variation found above indicates low level of uncertainty of the measured items.

Data comparison

For a more comprehensive understanding of the service quality perception, data collected during this research will be compared with studies carried out in other areas of Brazil and in other countries. The objective is to evaluate similarities or differences there might exist among regions which were chosen based on availability of research data with similar evaluation method and target public services. As to the countries, being a developing one was another criterion adopted as it is the category in which Brazil is currently classified.

The comparative table shows the average scores from public services of Brazil, Egypt, Malaysia and Mauritius.

Table 4. Service Quality - Comparative table. Source: Researcher's compilation.

Country	Brazil			Other countries[3]		
Dimension	**Mean Public Service - Manaus)**	**Mean Public Hospital (Rio Grande do Sul)[4]**	**Mean Water supply (Santa Catarina)[5]**	**Mean Public urban services (Egypt)***	**Mean Malaysia***	**Mean Mauritius***
Tangibles	2,51	3,51	2,95	2,26	3,02	2,05
Reliability	2,21	3,79	3,63	2,51	3,76	2,04
Responsiveness	2,48	2,88	3,33	2,64	3,02	2,01
Safety	2,46	3,36	3,57	2,56	3,14	2,12
Empathy	2,31	2,77	3,51	2,23	3,79	2,01
Region	North	South	South	---	---	---
Method	SERVPERF	SERVPERF	SERVPERF	SERVQUAL*	SERVQUAL*	SERVQUAL*

* Extracted 'perception' results only. Original 1-7 likert type scale adapted to 1-5 scale.

Data from Brazilian South region indicate that the level of service quality ranges from the neutral perception to a reasonable level of satisfaction whereas the average scores in Manaus city for each dimension are below the mid-point. These data suggest that there are differences in public sector

2 Only original SERVPERF dimensions are shown for comparison purposes with the literature available.

3 Source: Ramseook-Munhurrun et al. (2010)

4 Source: Kunrath et al. (2017)

5 Source: Rocha et al. (2016)

practices between South and North regions. The scarcity of resources, differences in regional policies and/or degree of development may explain the variation in the service quality perception. According to HDI (Human Development Index) 2010, there is indication that the pace of development is different across the Brazilian regions. The higher indexes are concentrated in the municipalities located in South Central region (Brazil, 2018a).

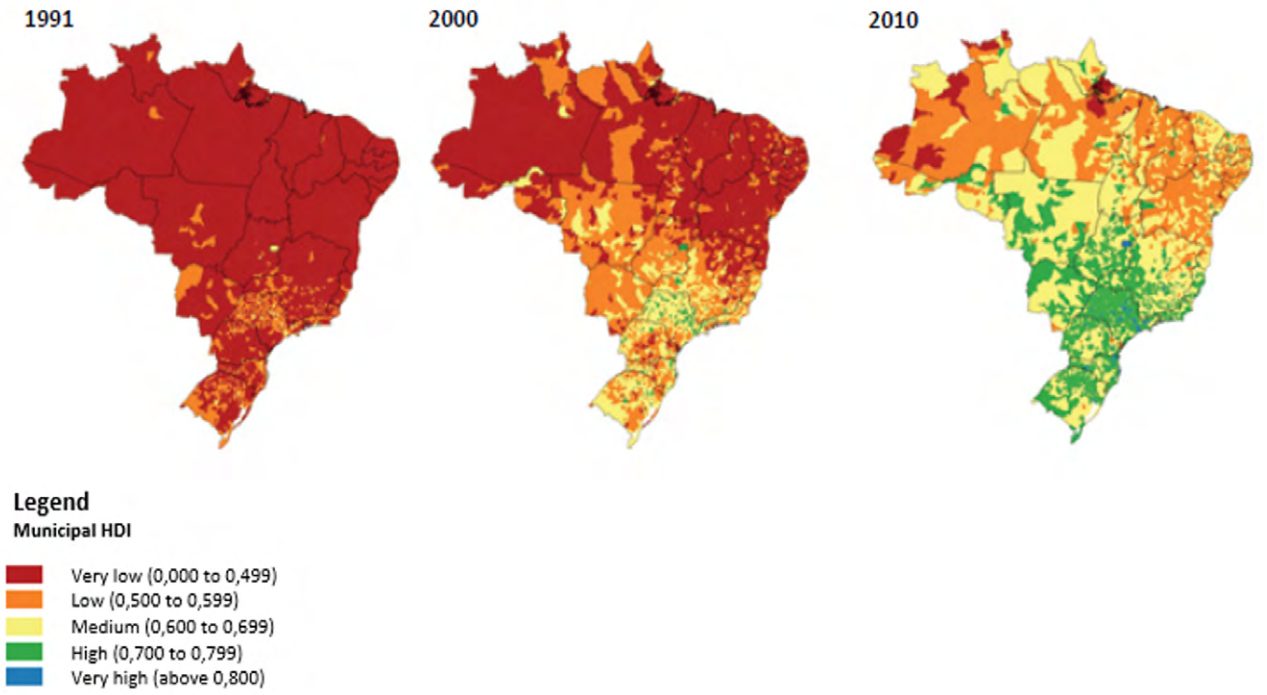

Figure 3. Municipal HDI. Source: PNUD, Ipea and FJP (2013), cited in Brazil, 2018a. Extracted from p.35.

The large geographical extension makes difficult the country to be homogeneous in social aspects. Moreover, historical background earlier explained might also be influencing the level of social and economic development.

Further analyzing the data, we observe that the average quality perception in Manaus city is similar to Egypt's data. Overall, the scores are lower than the neutral point (total average 2,4 in both locations). On the other hand, the average scores in the South region of Brazil are higher than Manaus and similar to the averages of Malaysia. Data from these countries are overall centered in the mid-point, ranging between 3,3 and 3,4. Mauritius presented the lowest scores with average rates of 2,1. Despite the differences among their scores, none of them presented exceptional rates.

The level of satisfaction can also be related to the level of investments in each sector of the economy. Data from BNDES (Brazilian Development Bank) indicate the percentage of investment of some countries in relation to its GDP. Overall investment in Brazil is lower compared to the countries taken as reference in this research. Although the causal relationship is not subject of this study, the relation between user satisfaction and investment proportion can be observed.

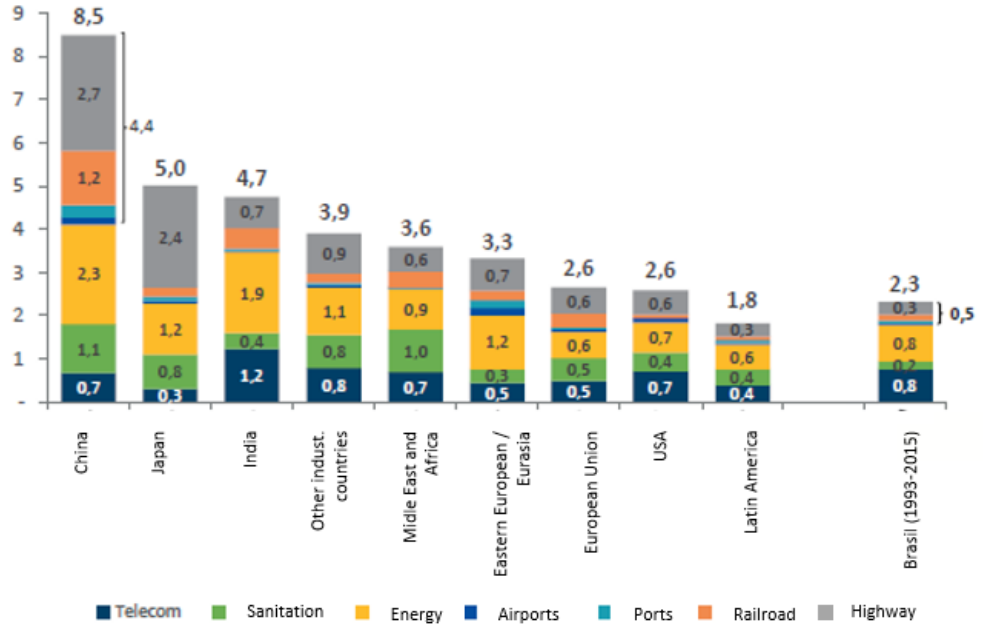

Figure 4. Comparison of investments in infrastructure (GDP %). Source: BNDES (2016) cited in Brazil, 2018a. Extracted from p.55.

It is important to note, however, that the data used to compare services in different areas of Brazil refer to specific services whereas the data collected in Manaus city refer to an overview of several public services. Thus, results might differ if a comparative study is undertaken considering the specific services.

Hypotheses testing

Additional factors that can affect the perception of service quality were examined as well. Respondents were asked to give opinions related to customer-orientation, continuous improvement and innovation.

The following hypotheses have been tested:

H1: Customer orientation approach influence the perception of satisfaction in service quality.

H2: Continuous improvement practices influence the perception of satisfaction in service quality.

H3: Innovation influences the perception of satisfaction in service quality.

Cronbach's alpha coefficient was also verified for the proposed added items. Coefficient was 0.93 for customer-orientation item which indicates a high level of internal consistency. However, it is not possible to measure this coefficient for 'continuous improvement' and 'innovation' due to the insufficient number of questions attributed to each of these items (only one question was designed for each).

H1: Customer orientation approach influence the perception of satisfaction in service quality.

Regression analysis on the questions related to customer-orientation shows that the model explains only 11% of the variance in the satisfaction level (R-Square=0,11).

Table 4. Regression analysis – Hypothesis 1. Source: Research data.

Regression Statistics	
R	0,334389722
R-Square	**0,111816486**
Adjusted R-Squar	0,082535711
Standard Error	0,319888424
Total Number of	95

ANOVA

	d.f.	*SS*	*MS*	*F*	*Significance F*
Regression	3	1,172307584	0,390769195	3,818768	**0,012571452**
Residual	91	9,311902942	0,102328604		
Total	94	10,48421053			

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intersection	-0,115247456	0,096325212	-1,19644124	0,234632
Question 27	0,048884087	0,035314853	1,384235899	0,169672
Question 30	-0,04873828	0,034648743	-1,4066392	0,16294
Question 31	0,103024463	0,041645919	2,473818914	**0,015223**

The overall significance of the variables is 0,01 (p-value < 0,05). Thus, the model is considered statistically significant and the null hypothesis (no other dimension influences the service quality) is rejected due to the strong relationship indicated by the p-value.

Analyzing the questions, it can be observed the statistical significance of Q31 ("Is your need met when you need to solve a situation with the company that provides the service?") as the p-value is <0,05. Hence, it is suggested that the ability to meet users need is a crucial influential factor in satisfaction.

H2: Continuous improvement practices influence the perception of satisfaction in service quality.

Table 5. Regression analysis – Hypothesis 2. Source: Research data.

Regression Statistics	
R	0,061288909
R-Square	**0,00375633**
Adjusted R-Square	-0,006955967
Standard Error	0,335126815
Total Number of Cases	95

ANOVA

	d.f.	*SS*	*MS*	*F*	*Significance F*
Regression	1	0,039382159	0,039382159	0,350655907	**0,555179022**
Residual	93	10,44482837	0,112309982		
Total	94	10,48421053			

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intersection	0,091990484	0,067396404	1,364916797	0,1755723
Question 28	0,014557607	0,024583823	0,592162062	0,555179022

As given in Table 5, p-value indicates that the item is not statistically significant (p=0,56). Moreover, the R-Square is 0% which indicates that the model does not explain any variation in the dependent variable (customer satisfaction). Based on the statistical data, there is no sufficient evidence that supports the rejection of the null hypothesis, i.e. there is no evidence that supports the alternative hypothesis.

H3: Innovation influences the perception of satisfaction in service quality.

The results are shown in Table 6.

Table 6: Regression analysis – Hypothesis 3

Regression Statistics	
R	0,214
R-Square	0,046
Adjusted R-Square	0,036
Standard Error	0,328
Total Number of Cases	95

ANOVA

	d.f.	*SS*	*MS*	*F*	*Significance F*
Regression	1	0,481	0,481	4,468	0,037
Residual	93	10,004	0,108		
Total	94	10,484			

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intersection	0,004	0,067	0,054	0,957
Question 29	0,061	0,029	2,114	0,037

Source: Research data

As it can be observed, 'innovation' is statistically significant as the p-value is <0,05 (p=0,04). Therefore, the null hypothesis is rejected, and the findings suggest that improvements in innovation also change the user's perception in relation to service quality. However, its representativeness as the reason for the variation in the dependent variable would be very limited (R-Square 5%). This may require further detailed verification since only one question has been used to evaluate the influence of this factor.

Following, regression analysis has been performed in order to verify the extension to which each dimension affects the quality perception. For this analysis, 'satisfaction' parameter has been considered as the dependent variable whereas the 5 SERVPERF dimensions and the additional factors (customer-orientation, continuous improvement and innovation) have been taken as independent variables. The results are demonstrated in Tables 7 and 8.

Table 7. Regression statistics. Source: Research data.

Regression Statistics	
R	0,495171578
R-Square	**0,245194892**
Adjusted R-Square	0,174980463
Standard Error	0,303344452
Total Number of Cases	95

The 8 variables used to evaluate the service quality perception explain nearly 25% in the variation of the satisfaction level. This suggests that there are other factors that influence the level of satisfaction in terms of public service. However, the overall significance of the variables used are statistically significant as the p-value is lower than 5% (p-value=0,002).

Table 8: Analysis of variance

ANOVA

	d.f.	*SS*	*MS*	*F*	*Significance F*
Regression	8	2,570674868	0,321334	3,492087	**0,001549924**
Residual	86	7,913535658	0,092018		
Total	94	10,48421053			

Source: Research data

Further analyzing the individual variables of the proposed model, Table 9 shows that 'reliability' is the only factor statistically significant in service quality perception (p<0,01).

Table 9. Factors significance. Source: Research data.

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intersection	-0,119766137	0,117751235	-1,01711	0,311953
Tangibles	-0,019067581	0,053400196	-0,35707	0,721914
Reliability	**0,227810095**	0,061362803	3,712511	**0,000364**
Responsiveness	-0,077820609	0,060041505	-1,29611	0,198404
Safety	-0,012561566	0,056988884	-0,22042	0,826065
Empathy	0,03963696	0,068799017	0,576127	0,566034
Customer-oriented	-0,008040391	0,068674847	-0,11708	0,90707
Continuous improvement	-0,032415766	0,028374421	-1,14243	0,256446
Innovation	0,008620641	0,03427306	0,251528	0,802006

Moreover, 'reliability', 'empathy' and 'innovation' seem to have a positive correlation with the level of satisfaction as indicated by the coefficients. 'Reliability' has the highest coefficient level which indicates that improvement in this dimension is likely to change the perception of service quality in larger scale. With regards to the remaining factors, data suggest that improvements in 'tangibles', 'responsiveness', 'safety', as well as enhancement of 'customer-orientation' and 'continuous improvement' should have little impact on users' perception.

Analyzing the significance of the proposed factors on individual basis, all factors are statistically significant except for continuous improvement (p-value 0,56). See table 10.

Table 10: Individual significance. Source: research data.

Variable	Coefficient	t-stat	p-value	R2
Tangibles	0,102838	2,483781	0,014790	0,062209
Reliability	0,162570	5,002429	0,000003	0,212027
Responsiveness	0,092910	2,474575	0,015152	0,061777
Safety	0,096788	2,990961	0,003560	0,087751
Empathy	0,099615	2,716426	0,007869	0,073511
Customer-oriented	0,089729	2,246453	0,027042	0,051471
Continuous improvement	0,014558	0,592162	0,555179	0,003756
Innovation	0,061041	2,113802	0,037209	0,045842

By analyzing the individual explanatory variables, it can be observed that reliability is the best factor to determine the user's satisfaction as it has the highest R-square value (21%). This implies that 21% of the variation in the user satisfaction is explained by the reliability dimension. As the complete model explains 25%, 'reliability' dimension explains virtually all the variation in the satisfaction considering the 8 factors proposed in this research. Hence, reliability is the most critical factor that determines the level of user satisfaction. It can be interpreted that improvements in employees' attitudes are likely to promote most impacts on service quality perception when users perceive autonomy, willingness, knowledge and free-from-error services delivered on a timely manner.

On the other hand, although the remaining factors are statistically significant if individual p-values are analyzed, those factors seem to have lighter impacts on users' perception. This implies that concentrating management efforts on employees training would capitalize the performance of the public sector in areas where direct contact with users occurs. The findings also show that tangible is the dimension with the lowest impact on service quality perception. This suggests that investments can be more efficiently applied when improvement on this factor is being considered since a large-scale investment would not generate a high performance perception.

The results of this research resonate with the findings of a study carried out by Martinović *et al.* (2017). By performing SERVQUAL analysis in public sector in Croatia, those authors found that reliability was the most important quality dimension for users whereas tangibles presented the minimum contribution to customer's dissatisfaction.

LIMITATIONS

Data used from other national researches shall be handled with cautious since questions slightly differ from one questionnaire to another despite being based on SERVPERF model.

It is also important to note that the data from Federal survey refer to preliminary results. Official analysis has not been published by the time of publication of this paper and details of the research method are not yet available. The differences in the types of services provided by federal and municipal public organizations shall also be considered. Users of both segments partially differ since users of Federal organizations correspond not only to individuals but also legal entities.

The findings suggest that are factors other than the SERVPERF 5 dimensions that influence the service quality perception. Customer orientation and innovation are found to be statistically sig-

nificant when factors are analyzed individually. However, the complete statistical model with these factors is found to be of weak representativeness to explain the variations in user satisfaction. For this reason, a further investigation would be necessary to identify other potential factors that impact on user's satisfaction.

RECOMENDATIONS

Despite the reasonable number of samples collected, it has to be considered the large variety of the services given as options for respondents' assessment. This implies that the sample size is small to make reliable inferences for a specific type of service. Therefore, in case of need of a more robust database to compare with specific public services of other regions, a larger sample data would be recommended for a more accurate picture of the perception for each type of service. In addition, causal relationship between degree of investment in infrastructure and innovation and the level of user satisfaction would be of interest.

Another factor to be considered is the unavailability of data from public service quality based on similar methodology in the Northeast region of Brazil which limited the extension of generalization of the findings. Data from this area would enable comparison and better-quality inferences. For this reason, it would be recommended combining the findings from this research with other data from Northeast based on the same measurement method in future studies to provide a holistic perception of this sector.

Moreover, Cronbach's alpha of two dimensions (tangibility and responsiveness) were below the recommended score when measured individually. This might have been caused due to the low number of respondents to each type of service. Thus, it is suggested to increase the number of samples when assessing different services. In addition, comparison of the level of service quality with developed countries would also provide new insights.

Lastly, in Brazil, where the public employees are protected by law, break-through measures would be necessary to foster changes in the way the public sector delivers services. Enlargement and improvement of infrastructure, better urban planning, public management qualification, technology incorporation and investments in transportation system, health, public safety and education are some of the recommendations given by the Ministry report (Brazil, 2018a).

While the regulatory protection hinders the employees to be motivated to provide the best to the community, monitoring performance in this sector based on factors that add value to the process is imperative to improve the overall user satisfaction. The user is, again, an interactive element as he or she shall help control by giving feedback to the service provider, which in turn, must properly address the arising issues, establishing procedures to better serve users. On the other hand, managers shall focus on the public organizations' culture, creating more participative environment where each employee would feel accountable for the processes' outputs and, in a broad perspective, for the national development. In sum, the challenge is to leverage the quality of public services homogeneously to support a consistent development, reducing gaps among regions which is hampered by the country's large extension and corruption in the public administration.

CONCLUSION

This research provides an analysis of the extension of influence of each SERVPERF model factor in the service quality perception delivered by the public sector and shows how crucial it is to improve reliability dimension. By identifying the most critical dimension, the related item can be prioritized and can support planning a more efficient and effective use of resources in the North region of Brazil towards an alignment of the service quality level across the country.

Comparative data analysis showed that the public service quality in Manaus city is perceived at lower level in relation to other national locations examined. Statistical evidences from this study reinforce the previous survey results carried out by the media and other institutions. It can be assumed that, in general, the public services do not exceed users' expectations since the highest scores fit in the neutral position in the measurement scale. Moreover, hypotheses of the possible influence of 3 additional factors in the satisfaction were tested, and the results suggest that, in addition to the 5 dimensions proposed by Parasuraman et al., customer-orientation and innovation also affect the perception of the service quality.

Despite the increasing customers' awareness of the service quality and changes in regulations that empower consumers (Redmand et al., 1995), the perception scores are still very low. This implies that service quality of the public services has not been enhanced over the last years. This picture demands robust measures and changes within the public sector, especially in those areas where the encounter with users occurs.

APPENDIX

Appendix 1 - Research questionnaire – SERVPERF questions

Item	Question
Tangibility (4 questions)	In your opinion, does the public office have modern equipment/fleet to deliver the services?
	In your opinion, is the physical appearance of the public office/fleet visually pleasant?
	In your opinion, do the employees dress/present themselves in a pleasant way?
	In your opinion, are the associated materials (ex. pamphlets, signs boards, website) to perform the service useful and pleasant?
Reliability (5 questions)	In your opinion, is the promised service performed?
	In your opinion, is the service performed within the informed time?
	In your opinion, are the employees of the public office supportive and reassuring when the clients have an issue?
	In your opinion, is the service performed correctly at the first time?
	In your opinion, is the company trustworthy?
Responsiveness (4 questions)	In your opinion, do the employees clearly inform what and when the service will be performed?
	In your opinion, is the company committed to perform the services promptly?
	In your opinion, do the employees demonstrate real interest to help and are willing to do so at all times?
	In your opinion, is it an issue if the employees are too busy to answer your request promptly?
Safety (4 questions)	In your opinion, can the customers trust the employees?
	In your opinion, do the customers feel safe during the interactions with the employees?
	In your opinion, do the employees treat the customers politely and respectfully?
	In your opinion, are the employees qualified and do they receive managerial support to perform a high-quality service?
Empathy (5 questions)	In your opinion, do the employees give individual attention to the customers?
	In your opinion, do the employees provide customized service?
	In your opinion, are the working hours of the public office convenient to the customers?
	In your opinion, do the employees demonstrate real interest and concern to offer the benefits of the delivered services?
	In your opinion, do the employees understand the customer's needs?

Source: Questionnaire adapted by researcher

Appendix 2: Research questionnaire – Hypotheses testing questions

Item	Question
Customer-orientation (3 questions)	In your opinion, do public organizations operate based on a performance model towards customer satisfaction?
	In your opinion, do the employees have the autonomy to seek for solutions to meet your needs?
	Is your need met when you need to solve a situation with the company that provides the service?
Continuous (1 question)	In your opinion, are the satisfaction surveys / complaints / suggestions used to improve the quality of the delivered services?
Innovation (1 question)	In your opinion, does the evaluated public company seek to implement innovations?
Satisfaction	Overall, are you satisfied or dissatisfied with the services perfomed by the public sector?

Source: Questionnaire designed by researcher

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DIGITAL AGE SURVEILLANCE AND PRIVACY: A PIONEER IN PUBLIC RELATIONS

Romny Ly

ABSTRACT: *"Big Brother is watching" is a term often used to characterize privacy surveillance or infringement. The evolution of the internet, mobile network, and the change of rapid connectivity across the world have allowed access of endless device supply to the global network and the production of an endless supply of unique personal information. This advancement in technology has undoubtedly revolutionized economies and improved lives. The possibility to watch has, however, always proliferated with "Big Brother." It not only watches but perceives things with the data. This study addresses several principles of privacy and surveillance that form a thoughtful of the contemporary topic, identify actors in the digital age as "Big Brother," and highlight some recent examples of their activities. In conclusion, some responses were given to problems on this theme, particularly in the sphere of public relations.*

KEYWORDS: **AI, Big data, digital panopticon, privacy, public relations, surveillance.**

In this transformational era, new technological innovations shape the way we think about the world, such as the internet of things (IoT), big data, and more. Smart technology can help keep track of refrigeration material, flipping on the hot air in an apartment to reduce high parking costs before going home from work or signing a license plate (Mayer-Schönberger & Cukier, 2013). Industries can recruit new staff by artificial intelligence (AI), health experts can use big data to find new infection types, and some researchers are also using big data from Twitter messages to anticipate people's behavior. Entities are becoming data files, and many new technologies make it much easier to execute daily tasks and projects. Smart towns have a robust network and make it easier to get around.

Nevertheless, these new technologies can still pose serious threats to privacy and freedoms. Smart systems provide evidence that can, for example, be used for analysis and behavior forecasts. It means that daily activities can be adequately analyzed and that smart communities can become societies with surveillance (Schneider *et al.*, 2018). Also, smart technology and AI rely on data to develop and comprehend. Such data are typically analyzed with a certain extent of surveillance (Schneider *et al.,* 2018).

Surveillance is a social and technical phenomenon, and technological innovations are not only technical but also most certainly affect society and daily lives. In short, civilians live within what would eventually be referred to as a "digital enclosure" and created the "data-self" or identity digitally, consciously or unknowingly, with influences, vulnerabilities, and threads, as well as their behavior. The data structure, residing in the digital enclosure, is embedded in the broader system called the surveillance state. The digital enclosure is not secure and warm inherently but is lined with flaws, holes, and leaks.

This study addresses some theoretical roots of the surveillance structure, its technologies, and its creation in the hegemonic digital era. It will illustrate several situations in the government and business field in which the data addresses issues on privacy, protection, politics, and culture. It will determine what digital enclosure is perceived by the windows and what they do with this information. Eventually, this paper will offer many insights into public relations (PR) professionals to explore "What one does with the information that is generated or left behind?"

THEORETICAL FRAMEWORK AND METHOD

The essay is focused on the qualitative methodology of analysis, which ensures that the background context is used, contextualized, and subjectively understood. The qualitative approach is used as different views and approaches of looking at the data can be used, providing the study an element of interpretation and research advantage. Four case studies would illustrate precise actions, structures, and businesses that the engaged individual willingly or unwillingly experienced in this digital era. Also, this study thoroughly uses secondary data, including the publishers of multimedia and print media reports, and so forth and then analyzes it as evidence in this paper.

UNDERSTANDING SURVEILLANCE

The word surveillance may include various activities, including former secret police of the German Democratic Republic, and stamping staff on the job (Galič *et al.*, 2017). How can surveillance be understood in a broader theoretical context? The etymological significance of surveillance pertains to sur (from above) and veillance (to watch) (Galič *et al.*, 2017). According to Lyon and Zureik (1996), surveillance is described as community-specific monitoring and control. Surveillance is an integral part of modern management and an essential tool for organizations maintaining multiple records on large populations. Lyon believes that entering modern society needs automated supervision. Every time a credit card, border crossing, operating vehicle, etc. is used, the computer registers details of us and our actions and checks other detailed information, including ethnicity nationality, or marital status, creating a digital database (Lyon, 1994).

Nevertheless, surveillance is not just administration. It often involves people conforming to community rules and expectations and forming a form of social control. Instead, it guarantees that we provide pay and welfare services, hold free and fair elections, help prevent terrorist attacks and crimes, and allow us to access our health information easily. It is also about caring and governing (*Lyon*, 2006).

The Janus-faced concept of surveillance makes it attractive as a research subject. Galič, Timan, and Koops (2017) describe surveillance studies and categorize methods in three stages. A key feature of ideas from this first stage of surveillance studies is the focus on physical and spatial aspects of control and surveillance. This stage includes Bentham and Foucault's surveillance theories (Galič *et al*., 2017). Foucault (1991) uses Bentham's panopticon to show administrative control. Bentham's panopticon (prison) is a vision of a jail built as a revolving structure where the guard sits in a chair, seeing all prisoners. Prisoners are tracked and continuously monitored or under the impression of constant surveillance. Foucault argues that this is the idea behind modern jails and other government institutions. The panopticon structure creates a power difference between the controller and the watched as it allows the few to see each other, while many cannot see each other. Therefore, the panopticon reflects the etymological concept of surveillance as a context for the topics. Another essential feature of the prison panopticon is that the studied participants are implicitly affected as they begin to act as if watched continuously (Galič *et al*., 2017).

The second stage of surveillance applications covers networked and wireless infrastructural surveillance principles. It means there is a distance from the people being tracked, so tracking is more about data than actual individuals. Such concepts offer an alternative to panoptic surveillance. Haggerty and Ericson (2000) describe a surveillance assembly in which citizens are decomposed into data flows and then reassembled to double data. Surveillance now covers the whole population, not just certain disadvantaged groups, as in the penal panopticon, and de-territorializes social control (Galič *et al*., 2017). Deleuze also believes that there has been a transition from judicial to control society. Unlike physical sight in panoptic images, surveillance is vaguer and abstract. A collective fragmentation is related to a breakdown of the individual, creating a fragmented or separated human (Deleuze, 1992), in which power is now used to control access and accountability, motivated by the need to tie fractured institutions together. Dataveillance may be referred to as continuous monitoring of groups or individuals, using electronic data management systems to track or govern their actions (Esposti, 2014), or an investigation of people's behavior based on their generated digital traces. Foucault has thus overcome the focus on confined systems and ecosystems and now prioritizes open space and centralized technical control (Galič *et al*., 2017).

Furthermore, Galič *et al*. argue that the second stage uses the system of capitalism for surveillance, integrating concepts like dataveillance, authentication, media screening, peer-to-peer monitoring, and resistance. Neo-Marxism covers both horizontal and vertical surveillance of spheres and levels of society and includes both types of digital and physical surveillance. Zuboff (2015) argues that reciprocity between customer and entity, which depends on third parties, including advertisers, is no longer a link. It contributes to the power imbalance due to the lack of consensus that businesses gather and receive ads based on personal data for uninformed consumers.

The third stage of surveillance experiments is a combination of the first two stages of synthetic concepts and principles. Although the first panoptic theories are relatively simple, the second phase represents a shift based on new technologies and the dispersal of information. Nevertheless, the second stage is not technology-neutral and allows technological developments and specific cases to be modified (Galič *et al*., 2017). Third stage hypotheses are not technology-dependent. Lyon (2006) claims that social media, government surveillance, and emerging technology are all watched and tracked. Surveillance is now an integral part of everyday life, not confined to prisons. Panopticon variations are found in different forms, from film to schooling. As Lyon states, this

panoptic system is just a new way of shaping docile society, as Bentham argues with the prison panopticon (Lyon, 2007b). In this stage, researchers will also focus on the potential positive effects of tracking and the concept of participatory surveillance through social media networks. As Albrechtslund notes, social media users are engaging in self-monitoring, and a hierarchical surveillance framework should no longer be in use. It has the ability not to hurt but to inspire the user (Albrechtslund, 2008). A counterpoint, however, to the participatory surveillance claim of Albrechtslund is that while participants tend to be actively involved in the surveillance of other stakeholders, a large amount of data is often left behind for tracking by external parties (Galič *et al.*, 2017). In brief, the third stage of the theory of surveillance is a surveillance network that spans divisions and hierarchies and where participatory surveillance potential exists, with a focus on the potential positive impacts of surveillance.

ARTIFICIAL INTELLIGENCE (AI) AND BIG DATA

AI encompasses the capacity of computers to predict, identify, and resolve problems based on algorithms and data (Bolter, 1984). Many essential roles, such as illness control, financial transactions, and parole, have already been allocated to AI systems. AI technology needs large amounts of data, mainly big data (Sætnan *et al.*, 2018). Big data is a comprehensive method for observing patterns and correlations based on substantial data volumes offering new insights on different phenomena. Big data is not necessarily new as such. Statistics, intelligence, and other disciplines have always been designed to collect and codify information in massive data sets (Mayer-Schönberger & Cukier, 2013). Many attributes distinguish Big Data from official statistics. The key idea is that new technologies require data to tell us what to look for rather than to check for data (Matzner, 2018). Big data are also unique in its size and speed, offering insight into or nearly in real-time without the apparent latency of other data collection methods. In 2009, for instance, Mayer-Schönberger and Cukier highlight the systems of Google were able to predict an outbreak of the H1N1 virus before the government when people googled their symptoms immediately but often waited a week before seeing a doctor. Big data also does not take causalities nor correlations into account (Schönberger & Cukier, 2013).

Academics also criticized such justifications for big data. Seeing that AI and Big data are increasingly engaged in both standard practices such as dating and vital infrastructure, such as healthcare, it is crucial to determine how these systems communicate with ethics and morality (Mayer-Schönberger & Cukier, 2013). Also, AI has prompted debates on philosophical dilemmas in self-driving vehicles, such as the conventional trolley problem in which it is crucial to decide which groups of people a loose trolley will ride over (Risse, 2019). As Harambam *et al.* (2018) argue, technology is always the consequence and course of evolution and is never an unstoppable or unregulated power of existence. As such, application engineers must have sufficient human rights expertise, just as lawmakers must grasp how the system works.

THE DIGITAL AGE PRIVACY RIGHTS

The UN General Assembly (2013) passed the digital age privacy law in 2013. The legislation requires States to ensure compliance with the right to private information by reviewing their data collection and control practices, and by creating or maintaining existing accountability and transparency mechanisms for the right to privacy. According to OHCHR (2014), while new

communication technologies allow citizens to express their freedom of expression, human rights activists to deal with violence and democratic participation, they also provide governments with improved surveillance capacity.

Digital technologies would reveal sensitive social-life information in far more invasive ways than previous surveillance was conceivable (Human Rights Council, 2019). Smart systems and the Internet of Things have data and information about common life forms. These data can be used to track, forecast, or re-identify behaviors (Sætnan *et al*., 2018). Re-identification jeopardizes user privacy. Data are always anonymized when carefully deleting personal identifiers. Anonymization, however, can quickly become false security for users through sophisticated Big Data analyzes.

Datafication of potentially global information violates the right to surveillance of privacy. Datafication is not necessarily in the consciousness of people. For example, most people would think twice about sharing their social security numbers online with private actors, but they are not as concerned about the trails they leave elsewhere, as they feel that these traces are meaningless of investigation (Solove, 2007). They should not refrain from using facilities as digitized and integrated, fearing to leave traces. In modern society, activity is practically impossible without digital traces (Fulton & Kibby, 2017).

Nevertheless, the way surveillance operates and how surveillance affects privacy is evolving. The UN Special Rapporteur shared his frustration at the state-informed use of big data that restrict the right to privacy. He claims that states conduct disproportionate surveillance of individuals and use specific data and health data to infringe on the rights and speech of their inhabitants through gender identity (Human Rights Council, 2019).

Current privacy regulations allow consumers to be aware of the information collected and for what purpose when the information is collected. However, it is usually not apparent when assembling for which big data analysis or the plan to use the data in the future. According to Matzner, data can be distributed to third parties, and data analysis segregated from data collection. It means the data are not usually presented as a compilation. Data is now stored for future review and other uses. Therefore, since data use is diversified and unforeseeable, consent or autonomy is precarious (Matzner, 2018). It highlights the power imbalance arising from a lack of consent to collect uninformed user data. Zuboff (2015) suggests that there is no longer a reciprocal relationship between company and customer and sharing data with third parties. UN Special Rapporteur states there are significant weaknesses in existing legal mechanisms to protect privacy, both globally and nationally (Human Rights Council, 2019).

SURVEILLANCE AND THE DIGITAL PANOPTICON

The panopticon concept was one of the most commonly used metaphors for evaluating surveillance in different settings. Although Jeremy Bentham proposed this panopticon in the late 18th century, the works of Michel Foucault are now mediating this theory to society. Although many scholars have acknowledged the importance of the panopticon over the years, this principle is known only after Foucault has shown interest in it (Lyon, 1994). The original idea was to make the panopticon a simulated prison. Bentham viewed this initiative as an essential tool of government; he called it an essential tool of transformation administration (Lyon, 1994). The concept was a structure with a pattern across the ground. Also, Lyon (1994) claim that the core

consists of an inspection center. Regulation of prisoners would, therefore, be maintained by the continuous sense of being monitored. Again, Lyon (1994) contents, not understanding if they were monitored or not, and forced to believe that they were, conformity was the only rational option for the inmate. Foucault's interpretation of Bentham panopticon now shifting to the new panopticon debate was that prisoners are trapped in a position of dominance where they are the keepers of themselves (Lyon, 1994). According to Barker (2004), the panopticon in the work of Foucault is the term for ongoing, secret, all-pervading control, and surveillance at all social levels. Therefore, the panopticon can be claimed as a metaphor that implies control and dominance. In recent decades, surveillance in modern society has increased. This segment aims to start a debate on the leaks of Snowden as a voice. One of the major controversies that emerged after the release of Snowden is that US intelligence activities maintain their influence.

The following section discusses two broad categories of panoptical users as well as certain specific events to clarify the current security and privacy situation. The cases also demonstrate how these problems interconnect the local or even the global, discussion, and create space for public relations professionals to engage.

Facebook

Speaking of privacy without thinking of the most popular global social network would also be challenging. Facebook is known as a leading platform for staying in contact with friends, communities, and businesses of over a billion users worldwide. It also becomes skeptical of the privacy policy that continues to evolve and opaque. As the other possible case studies discuss historical events or current activities, recent Facebook information indicates that US online data-self behavior may have a potential future impact.

Facebook purchased Friendster and its intellectual property in 2010. It was awarded a patent on an intellectual property element suggesting a future social media giant scheme and, most of all, a fascinating impact on its users in August 2015. The patent also suggests a different use for authenticating Facebook users. When an individual seeks a loan, the lender reviews social network user credit scores that are connected to a person by accepted nodes. If these stakeholders' average credit rating is at least a reasonable credit rating, the lender will review the request for the loan accordingly. If not, the appeal for credit is denied (Kokalitcheva, 2015). To clarify the case, the lender could analyze the social network of this person, his contacts, if the user seeks a mortgage to decide if the applicant for the loan is a suitable risk. Thus, their friends can have a definite pessimistic or optimistic impression over a real, and significant event in life. Current legislation regulating loans in the US forbids these operations. However, regulation in other countries does not prohibit it.

Corporations such as Lenddo promote the use of social network engagement as a lending option to future lenders with minimal to non-existent credit history. Their platform is running in Colombia, Mexico, and the Philippines and supports the service. Users would have their reputation and credibility shown with Lenddo by the social networks, including Google, Linkedin, Facebook, Twitter, and Yahoo (Lenddo n.d.). As Jeff Stewart, CEO of Lenddo, points out, people realize who is reliable and trustworthy in their society. What is unique is that we can now calculate by massive computer power (Lobosco, 2013). Social structures have been used to enhance the data typically used by creditors, including credit record and income, according to Siva Viswanathan. He claims

that the internet is not perfect, but better leasing decisions were possible with the information, but how much better remains the issue (Chideya, 2015). The exciting thought emerges from this specific use of Facebook and other social media networks. It is not clear how people can manage an environment, in which the seemingly small action to approve a friend's request may have an economic impact (Chideya, 2015). Because most businesses have vague or complicated privacy policies, how does a website display their data, and why their Facebook friends will affect the real ability of the individual to receive a credit?

Apple Corporation

After the introduction of Prism, the national security agency project, one of the leading tech firms in the world, Apple, was in an unfortunate position. When Prism began collecting data from various US technology companies, a diaphragm in the PowerPoint presentation leak revealed. As an example, the timeline was started in 2007 by Microsoft, 2009 by Google and Facebook, 2011 by Skype and 2012 by Apple (IC OFF THE RECORD, 2013). The announcement was quite astonishing. Apple could have caused substantial damage to its image and public relations.

In February 2015, with an extensive history of innovation and financial powerhouse, Apple hit the benchmark. The closing price of Apple securities on 10 February 2015 guided Apple to become "... the first-ever corporation in the United States to end at over $ 00 billion USD. It is almost twice the next largest company in the world, Exxon Mobil." (Fitzpatrick & Linshi, 2015). Although this achievement is remarkable, it is important to announce that the business is double the market value of an oil-gas giant. This assessment reveals Apple's effect on consumers worldwide, and the effects can be substituted for traditional financial behemoths. There is a multitude of supporters, fanatics, and shareholders worldwide to please as a listed public corporation. The name and logo of Apple featuring on one of the first leaked documents obviously could not be overlooked by the corporation.

A couple of weeks after the publication, Apple responded with substantial clarification after tech companies were convicted of indiscriminately exposing customer information to state agencies: first, we learned Prism's government initiative when media outlets told us that on 6 June. Also, no public authorities have access to our database, and all public agencies requesting consumer information must get an order from the court (Apple, 2013). They also identified themselves as a business that is actively interested in the privacy of their customers. The company added, Apple has always prioritized the privacy of our consumers' data, and in the first place, we do not store or retain a mountain of personal data about our users. There are different types of information we do not provide to the authorities or any other agency because we do not maintain it (Apple, 2013). It has defined certain functionality and features to secure the privacy of its users. iMessage and FaceTime, for example, are encrypted with end-to-end encryption, so that nobody can see nor read except the sender and recipient. Equally, in any identifiable type, we do not store customer location, Map searches, or Siri requests data (Apple, 2013).

Apple has used this issue to improve its privacy status and indeed use it as a tactic for public relations with a continuing national debate on privacy and surveillance to support existing clients. Apple released another version of the iPhone 6 in 2014, a year after the NSA releases. A highly anticipated case with full coverage of media, huge queues outside Apple retail stores all over the world, one feature is encryption. This new smartphone encrypts email messages, images, and

contacts under a sophisticated mathematical algorithm that utilizes the phone's user-generated code that it does not seize (Sanger & Chen, 2014). Traditionally, in the media, the internal technical work of a particular device was not disclosed. Information on profound cryptography can attract particular tech media, but the discussion of encoding is more popular amongst the general public. According to Sanger and Chen (2014), there is one particular concern for the NSA and national law enforcement agencies because smartphones are the first generation to undermine their investigative capacity after Snowden. This argument places a very particular electronic consumer product in the sense of a war on terror or even a terrorist and criminal tool that goes against Apple's stance on the device and its privacy in general.

Apple comments and acts on surveillance through its privacy policy in conjunction with marketing activities, apart from government surveillance forms. According to Tim Cook, the CEO has written in a letter introducing his website on privacy that we do not create email content or web browsing profile for ads. Also, we do not monetize the data stored on your iPhone or iCloud. Again, he explained that they are encircling all they can know about you, and they try to make money off it. We suppose that is incorrect. It is not the way Apple needs to be (Peterson & Tsukayama, 2015). Observers from the industry take note of the privacy position of Apple and how they profit from them. An observer, Rich Mogull, found that Apple's market differentiator is essential. It does not make any money by gathering personal information as they are designed (Peterson & Tsukayama, 2015). Like others in the industry, Apple's privacy policy is remarkable because it is straightforward, comprehensive, and quite different from the traditional implementation of the policy, which is often ambiguous and confusing.

Health Searches

There was an assumption about their use of the internet that users are the product if they do not pay for the product or service. Another aspect in which this principle is evident is the use of the internet to seek information on health. Although some would believe that the data is confidential, and so do medical records, specific data privacy rules such as the Health Insurance Portability and Accountability Act (HIPAA) do not secure their internet use. Privacy implications of the search for health information on the web have been analyzed (Libert, 2015), when the average, uninformed, user flips on the web to seek sensitive health information. Libert further asserts that he used the search engine to find 80,142 specific web pages related to health by collecting responses to 1,986 common diseases queries. A collection of sites demonstrates what users are currently visiting instead of a particular specific health website. Using these various websites, he used a specially constructed software to assess how many of the websites were able to collect and disclose user data to third parties. His results showed a considerable privacy violation, and third parties demanded 91 percent of pages. Uniform Resource Identifier (URI) research showed that 70 percent of HTTP referral strings confined data that revealed specific conditions, medications, and ailments. It puts users at risk blindly by personal identification and prejudice (Libert, 2015). While some explanation is technical, the message is evident when an individual on the internet searches for a disease, it will be known nine times out of ten other parties, and that information is gathered.

The study also discusses the risk of personal identification and discrimination. The analysis further analyzed which entities received such information, and Google was the highest by percentage. It may not be surprising that this is the data gathered by the search engine company, but it is also

surprising that a credit agency gets this data. Libert draws the dots and discovers data brokers active such as Experian. He adds, here is a site that knows all of your credit card bill, and who also know your health problems. It is quite worrying (Ungerleider, 2015). The obtained information should be confidential.

However, a data broker, such as Experian, can rapidly integrate the user's bits and bytes. It is at this point where prejudice may arise. According to Ungerleider, visitors of the HIV/AIDS website of WebMD, by contrast, could also submit user data to a whopping 34 diverse online ads. Also, visits to relevant HIV/AIDS sites along with the browser history by users subscribing directly to HIV/AIDS ads — effectively exiting their HIV status (Ungerleider, 2015). The concept of privacy in regards to health information should be revisited. It is easily understood and recognized that HIPAA protects and interacts privately with the doctor, counselor, therapist, or pharmacist. The statute, which came into force in 1996, basically ensures that what has been done by or for an individual is left to the network of healthcare professionals, patients, and health insurers. Healthcare practitioners and providers are deemed under the legislation to be covered entities and can incur both criminal and civil charges should they breach the law. The provision, for example, forbids a public relations agent in a hospital from speaking on a particular patient in the news media.

The National Security Agency

A debate about privacy and surveillance cannot take place without a discussion between the National Security Agency (NSA), and several prominent informants took NSA activities to the public. The NSA is the Signal Intelligence (SIGINT) government agency. SIGINT consists of global communication surveillance, processing, handling, and analysis for the acquisition and counter-intelligence of foreign intelligence. It is also responsible for protecting government computers and networks from cyber-attacks.

The NSA predecessor, the Black Chamber, initiated the surveillance messages via wire soon after the end of the First World War. Such messages went back then through telegraph lines. The chief of the Black Chambers, Herbert O. Yardley, visited Broadway 195 in Manhattan downtown, Western Union's offices, and his supervisor. It was the largest telegram firm in the country. The two government officials met the President of Western Union to convince him to allow them to access private messages via the cables of their business (Bamford, 2013) confidentially. The discussion was a triumph, and over the decades, many more have been replicated. The styles of wires have evolved, and the substance they carry has exponentially increased.

Late in the 2000s, Mark Klein, a retired AT&T technician, discovered and eventually exposed the presence of a secret room in one the San Francisco network of AT&T. The NSA used the secret room, designated room 641A, and included facilities to capture and examine any data flowing over the optical fiber wire of the facility. The cables formed part of the internet backbone, and a splitter network sent a duplicate in this secret room. It has been splitter everywhere, as a vacuum cleaner, Klein added, the NSA collects it all. These are essential pipelines that hold not only AT&T subscribers but everyone (Nakashima, 2007). Since the revelation, Klein, the volume and variety of information brought through these and other cables have only expanded.

Snowden, a former staff in the NSA, gathered a massive number of information about several various surveillance programs and eventually sent them to select journalists. Snowden has

disclosed to your digital enclosure the appearance, with names such as Boundless Informant, Muscular, Prism, and Stellar Wind, of apps that look in the eye of your data and mind. The NSA has directly infiltrated Apple, Facebook, Google, and other US net giants (Greenwald & MacAskill, 2013). The critical concern is to recognize that access and compilation are to obtain data on civilians without their authorization, consent, or judicial process.

The system of government security has developed from the street population to buildings filled with wires, computers, and digital storage. There is a particular NSA-built administration surveillance center in Bluffdale, and the Utah Data Center is a data storage facility for data gathered through its surveillance operations. All forms of communication must pass via servers and routers and be processed in near-bottomless networks, including the full content of private communications, phones, calls and Internet searches, as well as a range of personal data paths — parking receipts, travel routes, retail sales and other digital bucket litters (Bamford, 2012). The complex spans one million square feet and requires ample water and electricity to serve a small town. A system like that has traditionally been unimaginable to most people, but informant leaks have increased public awareness of NSA activities and have drawn media attention. In the cases of whistleblowers, the NSA responded by attacking the accusers. It was achieved by legal channels, including search criminal charges and warrants. Public relations techniques have also been introduced. The leak has been widely criticized, and the focus has been diverted from the content of the document to the public damage. The whistleblowers faced challenges and fears that their disclosure had impacted lives.

BEST PRACTICES

The digital age, surveillance, anonymity, data mining, and all these forces collide. The public relations practitioner needs to answer questions that include more and more of their everyday life, to gather increasingly sensitive and personal information regarding their lives, and to incorporate this information in unprecedented forms. According to Libert, a recent study of a million websites highlights the extent of online surveillance of the data-self. The results show that almost nine of the ten sites spill data from the user to third parties that the user may not know, six out of ten generate third party cookies and more than eight out of the ten load JavaScript code by outside parties into computers of the user (Libert, 2015).

Public relations converge with crisis relations and image management with these issues. Indeed, the crisis management aspect is most unpredictable and has the most damage potential, and the public relations practitioners have to prepare for the eventuality. There is a recommended set of best practices for public relations practitioners to help navigate such dynamic conditions. Fearn-Banks (2016) claim that detection, prevention/preparation, containment, recovery, and learning are the five crisis phases.

Understand the Concerned Matter (Detection)

Public debate on privacy and surveillance is on the rise. The initial Snowden leaks and publications have been circulated for more than two years as NSA's leaked archive records are continuously being posted. In the US, the legislature debates this subject, presidential candidates take positions, and the judicial body has provided several opinions on the legitimacy or illegality of

mass surveillance. Commercially, the debate on the use of Internet browser ad-blocking tools is increasing, which is directly associated with the constant surveillance and classification of users conducted by marketers. More emphasis is placed on the manipulation of user data, credit card info, and identity fraud. During the processing of more personal data, users will be more worried about how their information is secured, stored, or transmitted electronically. PR must be aware of this issue and how it should or should not engage in any particular image management or scenario.

Early Start (Prevention/Preparation)

PR professionals may have a long-term view and need to be mindful of a situation beyond a particular part of an organization. They also work in various departments in an agency and has the opportunity to pick up points that might otherwise go unnoticed. Technology offers opportunities to grow, which only human imagination seems to restrict. The PR practitioners will inquire in anticipation of developing a new product, platform, program, or surveillance capacity, though it can be done, should it be done? Again, if the business does this, what are the implications of the reputation of the entity? For a surveillance crisis management strategy, it covering a wide range of situations should be established for prepared entities. Common incidents could include violence at work, a toxic spill, or retrieval of a product. Crisis incidents such as whistleblowers or leakage of information by staff within the organization should be addressed. It applies to the previous questions. Responding early to these questions will help plan for a crisis response if appropriate. For these corrections, certain aspects of the apology crisis management theory could be used. The theory of apologizing is characterized as an effort to protect the image and reputation. It is not inherently an apology, in any case. The actions of the organization, through communication discourse, will deny justify or apologize behavior (Fearn-Banks, 2016). In situations like this, two approaches should be addressed. To start with, redefinition, a statement that the entity did not make a mistake or intends to do it. Further, a dissociation indicates that while the company appears to have done wrong, it does not.

Consider the data-self. If an organization makes efforts to protect user privacy or wishes to do so, it is crucial to see where the data-self resides in the society, what is managed, stored, and whether the network is secure. The public relations practitioners do not need thorough technical insight into the mechanisms behind this issue. The basic answers to questions are generally necessary. Think Apple for a while; in some instances, they tend deliberately not to gather data so that they do not lose it. When they are forced by a court order or even split a file unauthorized, data components are not even stored inside their database server. Certain aspects are encrypted so that without a key from the user, the data is worthless, and the key is not visible to Apple.

It is also useful to know where user data is stored. Mostly, there are two locations where the data will reside. First, they own run and control servers within the walls of the firm. This position has direct consequences for the company's privacy policy and its laws. If the entity undertakes to keep data private, the IT division agrees that other entities should not have access to the information and procedures to fulfill the principles of data privacy. Second, the external data network, maintained and controlled by a third party, is commonly referred to as a cloud. Thus, it is critical to understand the privacy rules, the protection, and the stability of the relation between the two organizations are in place. The geographic position is an attribute. The clouds contained in the US are subject to US legislation and are not subject to these rules in other countries.

Market Opportunity Against Surveillance and Infringements of Privacy (Learning)

The corporations are continually engaging in surveillance by the public and infringements of privacy and are promoting their products or services as an outlet for addressing these issues. Some emphasize the resistance can be used at various places within the digital enclosure. Company and individuals should preserve valuable data, including photos, financial records, health records, or other files. There are available online or cloud providers, but the privacy of data and access to the cloud of computers is a concern. SpiderOak provides end-to-end encrypted cloud service and does not have user data content because there are no keys, for example. Also, Tresorit offers similar services, but all the same, its servers are based in Europe, protected by strict EU enforcement, and are unattainable by US agencies. The use of the web browser allows extensive surveillance, data collection, interpretation, and categorization, as previously illustrated in the cases. Apps like Tor are promoting themselves as a way to anonymously browse the internet by blocking campaigns to track web browsers, like AdBlocker and Ghostery, from snooper of advertising agencies and data brokers.

CONCLUSION

The paper addressed several essential problems in the nexus of surveillance, privacy, and public relations matters in the digital age as "Big Brother." The central aim in surveillance is to collect data and thus directly opposes the privacy, not only during the data collection process but also in the way data is analyzed and used to make decisions.

The PR practitioner will take the position of a sentinel within a company in pursuit of accidents and crisis potential. Although [s]he may not be able to elucidate the mechanisms of how a given app or platform functions, the public relations practitioners should identify and spot the potential for breach of data privacy, the principles, and the effect of surveillance actions. The public relations sentinel can also analyze the strategy used by rivals in the industry when they interact with data-self, which is intrusive, or ethically questionable and recognize possibilities for creating and extending strategies to facilitate their own open, ethical or defensive data processing.

It is the most unpredictable aspect of crisis management, which is most likely to damage it, and public relations practitioners must prepare it. A collection of best practices is recommended for public relations practitioners to help navigate these complicated circumstances. The five-stage crisis model by Fearn Banks, including detection, prevention/preparation, containment, recovery, and learning, are recommended.

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"The reasonable man adapts himself to the world;
the unreasonable one persists in trying to adapt the world to himself.
Therefore, all progress depends on the unreasonable man."

George Bernard Shaw

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