Resiliency and Sustainability after Oil Spill in Imo State and the Niger Delta Region of Nigeria

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Abstract

The study investigated resiliency in Imo State and the Niger Delta Region of Nigeria where oil spill has continued over fifty years causing severe socioeconomic, health, environmental hazards and occupational displacements. Various literature on dimensions, approaches and findings on resiliency were discussed. Using qualitative data, the study found that the communities adopted and adapted various strategies to bounce back after the spill; building private fishing pounds, buying more sophisticated boats for long distance fishing in oceans, combination of crop farming and fishing. The crop farmers converted lands closer to their homes into farmlands, leasing farmlands from other communities, planting improved seedlings. Spirituality and occupational change were part of the resilience; even women deviated from the cultural norms doing certain jobs traditionally forbidden. The lack of support from the government, oil companies and external aids made the bounce back difficult and extended.

Keywords: Resilience; Oil spill; Disaster; Sustainability; Occupational change

1. Literature Review

The continued quest for growth, exploration and exploitation of natural resources, development of nature and the curiosity of humans have continued to lead to disasters from natural to man-made and technological. These disasters end up leaving varying degree and impacts on ecology and humanity, hence there is need to adapt and strengthen human and community's livelihood after such disasters (Summers et al., 2018). The best option for people and communities in event of such hazards is to form strong resilience. Resilience refers to the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress. Resilience can be described as coping strategies adopted by the communities to withstand and survive the series and reoccurrence of disasters including oil spill in their communities (Mayer and Bergstrand, 2015). Similarly, resilience in the social sciences means "the ability of a society to absorb the impacts of an external disturbance, to recover and rebuild itself to a functional state" (Colten et al., 2015: 392). Resilience is "the capacity of a system to absorb shocks and disturbance and still maintain function", or "the capacity of a social-ecological system to adapt to change through self-organization and learning". Applying ecological science, resilience is often expressed as the capacity of a system to withstand or

absorb outside stressors in order to return to some non-equilibrium or multi-equilibrium state (Simmie and Martin, 2010).

Similarly, as "the ability of communities to withstand external shocks due to their social infrastructure", so resilience can be perceived from different perspectives including social, ecological, cultural and community in event of disaster and no consensus on "resilience" as different researchers looks at it from their academic discipline and fields of research (Sandifer and Walker, 2018). However, the common and binding words in all are "ability to adapt and bounce back" after the shock or disaster, the ability of ecosystems to resist and absorb disturbance, and their ability to recover (Darling and Cote, 2018). The ability of a system, community, or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner through the preservation and restoration of its basic structures and functions. Therefore, in examining the social–ecological, and community resilience, the vital role of individuals determines to a greater extent the levels and manifestation of these adjustments and fall backs in each circumstance and measurements.

The cultural resilience is the ability of communities to bounce back after natural and technological hazards due to their cultural orientation. The people of the Niger Delta region has the inherent culture of being able to withstand any situation they found themselves in and their high level resistance, and knowledge, self-reliance and entrepreneurial abilities empowers them to make things out of nothing. "Culture plays an important role in communities' abilities to adapt to environmental change and crises." (Clarke and Mayer 2016). The communities in Imo state and Niger delta has the history of mutual understanding and assistance, so in events of disaster, members flock to the victims to help them in various ways including providing first-aid assistance, traditional medicals and clothing materials, if the disaster affected the neighbours building they offer alternative shelter, the communities goes to the extent of contributing money and food stuffs to assist victims. These old standing communal living standard has helped them to adjust to all disasters including oil spill. Generally, the influx of modern technology and foreigners in these communities has affected the cultural resilience as these modern technologies has aided resilience and ability to return to something closer to earlier state before the spill. In the same vein, foreigners have contributed their experiences in advising and educating residents on how to overcome the disasters impacts. The feelings and thoughts of not leaving their historical communities and ancestral occupation greatly motivated the people to find alternative means of survival despite the continuous occurrence of the oil spills.

Socio-ecological resilience means the ability of systems to adapt to constant changes and in the context of ecology and environment resilience, it means ensuring sustainability; ability of the system to respond to changes and improve lasting human well-being, ability of individuals, families and communities "to withstand, adapt and to quickly recover from stresses and shocks such as violence, conflict, drought and other natural disasters" (European Commission, 2016). However, EU extends resilience to cover disaster risk reduction, climate change adaptation, social protection, and nutrition and food security.

2. General Perception of Resilience

Generally, resilience can mean and include all the mechanisms that individuals, communities, governments, and corporations adopted in coping with and recover from disruptive events (Sandifer and Walker, 2018). Most literature on resilience after an oil spill or disaster have concentrated on the psychological trauma, depression and stress, and recovery from other health challenges associated with disaster, neglecting other fiscal (economic), physical (infrastructural) cultural and environmental or ecological aspects of human resilience (Albright and Crow, 2021).

A study on the Louisiana residents after the Deep-Water Horizon Oil spill showed that the communities hinged their resilience on three basic principles called Place, Heritage, and Moral identity (Clarke and Mayer, 2016). Place here means the pride and love for the area and resolve to continue to live in such a community based on interest and societal features despite the disasters. With such resolve on place, victims of disaster always adjust fast enough through whatever they can lay their hands and life goes on. These findings are similar with the findings by this study on resilience in oil communities in Imo State. The love of traditional heritage is a strong factor in resilience, the communities attach much importance to their inheritance as part of their culture which satisfies their existence and not minding the oil spills that pollutes the environment. This is why the village fish farmers, crop farmers and traders were satisfied with their jobs and little income as they enjoy their environment and tradition which they inherited from their fathers. After the disasters like oil spill, the communities were found to be curious and steadfast living in their environment and practice their means of livelihood, they only advocated for cleanup of the environment and compensation for their losses but in most cases do not want to be relocated from their ancestral heritage. As part of imperative nature of these communities, moral identity is highly valued by the communities hence consolidating their resilience after spills or other disasters.

This is where the communities' self-concept, characteristics such as self-reliance, individualism and family collective recovery and ego come into play. The communities' moral identity helps them to survive after the disasters as they develop a backup to overcome the economic, social, cultural and environmental impacts of the disasters by closing ties to survive the external threats knowing that not only their economy but their lives depends largely on natural resource and environment (Lee and Blanchard, 2012). However, it has been difficult to actually measure resiliency after disasters and literature has consistently demonstrated an inverse relationship between resilience and depression, "the ability to rebound after experiencing adversity plays an important role in mental well-being" (Shenesey and Langhinrichsen-Rohling, 2015). While some see resilience as "bouncing back", other researcher saw it as process of adaptation to a pre-stressor stage. Alternatively, psychological resilience can be measured using Connor Davidson Resilience Scale.

3. Cultural perception of resiliency

The culture and tradition of people plays active role in resilience and the pattern applicable. The cultural perception of events, mishaps and accidents helps is shaping the minds of the victims and their recovery, and this perception of the intervening roles of culture and tradition have been seen to play active role in oil spill incidences and other disasters (Clarke and Mayer,

2016). The cultural and religious diversity may influence the perception of disaster and the resilience that follows suite, hence in their study Lyon and Parkins (2013) stated that "culture creates the social lenses through which people see the world". The existentiality of individual and community socio-ecological, cultural and psychological resilience may be strong enough to consolidate the level of resiliency after a disaster, and this may be seen as a "productive common ground" of community that lies between a psychological and social–ecological approach (Berkes and Ross, 2013; Sandifer and Walker, 2018). However, previous literature has tried to appreciate and acknowledge the influential roles of culture in recovery after disasters (Binder et al., 2014). Some see it as a divine thing and should be accepted and forgotten while some attach negligence to such occurrences and tried to blame and at the same time seek for punishment and compensation from the causes.

The narratives of previous and cultural acceptability and perception of disasters have been investigated in previous researches and found that residents following history, tends to draw meanings and interpretations on disasters and hazards and adjust to actions and reactions (Tierney, 2014). The attachment of resilience to culture has generated a structured definition of resilience, hence, "cultural resilience is the capacity of communities to mobilize cultural resources in response to external crises and threat, which in turn shapes individual and community actions related to the recovery process" (Clarke and Mayer, 2016: 2). These attachments of culture to resilience and disaster emanates inquiries into the linkages between culture, environmental ecology, disasters, and management which would be an intertwined in-depth study yielding diversified findings since cultural influences differs in adaptation and resilience.

4. Community Resilience

Earlier studies have attached community resilience to sense of community and attachment to the locality which are all embedded in culture as these are strongly connected to the people's sense of belonging even during disasters (Henry, 2013; Binder et al., 2015). It is also pertinent that the impacts of disasters can be ameliorated through early adaptive and flexible interventions and preparedness by both the governmental bodies and other stakeholders in the industry. Economic diversification or opportunities for alternative means of livelihoods and social capital are the most effective ways of adaptation and community resilience. Community resilience is the sustained ability of a community to respond to, withstand, and recover from disaster events, such as large oil spills (Patel et al., 2018: 6). How well individuals and communities adapt to and recover from disaster-related adverse conditions is measured in terms of resilience. In human health and disaster contexts, resilience can be understood as the relationship between risk and protective factors. Risk factors can include low socioeconomic status, poor education, past trauma, being of a minority group, and lack of an adequate support structure in addition to others, whereas protective elements include having a positive outlook, social ties, community involvement, spirituality, and others. The ability of communities to adapt quickly to disaster like oil spill has positive relationship with psychological, sociodemographic, economic, physical, and other variables which in essence are related to the cultural and behavioural traits of these communities. Literature has it that psychological resilience primarily was interested in the mental health and psychological well-being of trauma-exposed adults, but later advanced to incorporate families and communities

such as in cases of disaster like oil spill, earth quakes and tsunami (Bonanno et al., 2015). However, in considering resilience there is need to ask the basic questions of "Resilience for what and where?" This important question directs the researcher to the circumstances that led to the disaster and the type of resilience to be investigated, adopted and the location of such resilience.

Therefore, resilience for oil spill would differ from resilience for earthquakes and tsunami and that of terrorist attack, industrial explosion, or domestic fire. It varies across individuals, families, communities and locations (Patel et al., 2018). We can have chronic and acute adversities or relatively transient disaster which last for a short period of time. In such cases, their resilient varies according to the nature and duration which may lead to more chronic stressors, such as migration or exposure to violence like the case of Imo State and the Niger Delta Region of Nigeria. However, ability to bounce back or withstand the shock emanating from such disasters can easily be influenced by existence of Social capital, accurate and timely information, collaborative and effective decision making and compensation (Finucane et al., 2020). For events and disasters including oil spill, rapid response, recovery and the role of the citizen scientist, and increased resilience with community participation are very important as enhancement to resilience. There is need for diversification of skill and information sharing to enhance community resilience after disasters.

5. Methodology

Thirteen informants from various sectors covering fish farmers, crop farmers, traders, youth leaders, men and women leaders were interviewed. The informants were carefully selected through the recommendations of the villagers as people who have in-depth knowledge and willing to give the required information to enable the researcher realize the objectives of the study.

Resilience was explained to them to mean their adaptation and bouncing back to life after the oil spills. The interviews were face to face and telephone and each of the interviews lasted for about one hour. Semi-structured type of interview was used because it gave the researcher the opportunity to include more questions that were not initially included in question guide. The residents gave their consent as consent forms were given to each of them and were endorsed by the informants before the face to face, while the interviewees on telephone were informed of the consent form which was read out before the interview and they consented. The informants were above the ages of 18 and have good and sound knowledge of oil spill in their communities and also, able to articulate and express their views, feelings through answers to the questions asked about their strategies of resilience after the oil spills. The trustworthiness of the qualitative data was verified through a member checking approach (feedback) and verbatim (Gunawan, 2015).

6. Resilience of Oil Communities in Imo State

The general perception of resilience is the ability to bounce back, withstand stress, and continue in existence and sustainability of life and well-being. This ability to bounce back may be within a short interval or may last longer depending on the availability and swift

implementations of the resilience strategies. The issue of resiliency in Imo State and Niger Delta region has been routed in the cultural life rather than governmental measures. These love for their environment has made them adapt to their traditional occupation of farming, fishing and trading. The discovery of oil in the late 50's and the after effect of oil spill did not deter the communities from going about their natural livelihood. Despite the increasing number of oil spill due to increasing oil drillings and negligence, the communities have continually resisted being driven out of their ancestral occupation and villages.

The determination of residents to employ natural means and utilize legislations by seeking for redress in the law courts, compensation and other avenues to redress and adapt to disasters have been described as inherent resilience. Similarly, the oil communities under study in Imo State and Niger Delta Region have employed legislation, negotiation, persuasion and all other means available to address the issues of oil spill and bouncing back but such actions have not yielded much due to the nonchalant attitudes of government and the oil companies. However, there were reported skeletal efforts by these authorities to enhance resilience through their corporate social responsibility (CSR). Strengthening community resilience usually involves and requires the identification and supporting community leaders who are not only trusted by the community members but also willingly committed to the improvement of lives of the people (Gil-Rivas and Kilmer, 2016). This is important when the resilience is being arranged and implemented by the oil companies, government or other stakeholders, and international organizations after the disaster. Unfortunately, all these measures have not done much to give them the back-up desired unlike other oil locations of the world where issues of resilience have received maximal attention. This absence of support from government and oil companies has made the impact of oil spill in this location worse than any other community impacted by spill and these communities record one of the poorest neglects in provision of social amenities and standard of living.

The communities in Imo State and the Niger Delta Region of Nigeria have been known to appreciate their culture highly and strives to keep them going despite the influence of oil workers, and visitors mostly researchers and journalist. Naturally, they are warriors, and resistant to defeat. They value their ancestral lands and believes that the spirit of their ancestors lives within and not only controls their activities but punish offenders to the customs and tradition. This strong belief is exhibited in their characters, making sacrifices to the ancestors and gods of the land to appease them. These qualities make it difficult for them to abandon their ancestral occupations despite the devastating impact of the oil spill.

7. Resilience by Fish Farmers in Imo State

The data collected from the communities through in-depth interviews showed that the fish farmers tried to find alternative ways of fishing since that is their main occupation. The fishing communities in Ohaji/Egbema in Imo state were able to back up the negative impact of oil spill on their fishing occupation by changing their fishing apparatus and nets. That involved buying new fishing nets where they can still find water to fish. Buying of engine powered fishing boats to enable them go for long distance fishing into the high sea and oceans. Building commercial fish ponds closer to their homes. Acquiring improved varieties of fishes that develops faster as they feed them with artificial improved feeds. These strategies helped the few to still survive the occupation, the fishing becomes more expensive to operate and the

possibility of securing loans from financing institutions were hard due to lack of collaterals and other conditions specified by the loaners. Government were unavailable to give financial backing and social securities. Residents interviewed had these to say:

> *" the waters have been polluted and as a fish farmer it is very difficult to get fishes again, those who can raise funds have to buy engine powered boats to go far into the river and sea to search for fish. They are the ones that can get fishes now. We are poor farmers and no support from government and the oil companies"*
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> *" How do we manage and survive, hmmmm very hard my brother, many have to build fish ponds in their compounds and around. They operate it and it is bringing good yields especially catfish, prawns, tilapia which are in higher demands for restaurants and pepper soup joints. I changed my occupation into petty trading though I go around too, to try catching fishes but hard to see them".*
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> *"younger and more energetic people relocated out of the community as they could no longer survive through fishing. They migrated into the cities for city jobs, learning of trades and other survival strategies*

8. Resilience by Crop Farmers in Imo State

The crop farmers resorted to hiring farmlands on lease to farm and converting lands very close to their homes into farmlands. They also adopted mixed cropping, application of fertilizers and modern farming methods as a way of maximizing the use of the few portions of farmlands left by the oil spill. Also, improved varieties of seed crops were acquired through the ministry of agriculture and other private sectors at the farmer's expense. In other locations of oil spill and natural disasters, various restorative approaches were put in place to revamp and assist faster recovery by the affected individuals, families and residents. Such approaches and measures included support communities, respond to community needs, fostering policy and community adjustments, building interdisciplinary relationships among community members, the companies and researchers, restoration measures and financial supports, and preparedness to avert future occurrences so as to reduce the impacts (Lesen et al., 2019).

The empowerment of community members and researchers by promoting ethically and socially acceptable resilience research, where the communities would be fully integrated into the study so as to dissemination result findings and avoid cultural conflict should be encouraged. Unfortunately, the oil companies and government in Nigeria hardly institute and finance comprehensive researches into the oil spill impacts and resilience approaches in the oil communities of Imo State and the Niger Delta Region despite Millions of funds budgeted and allocated to the Ministry of Niger Delta annually. This is an administrative neglect and incompetency on the management and staff of the Ministry of Niger Delta and not until this anomaly is corrected, the core problems, resilience and preparedness for future disasters cannot be managed to a successful outcome.

> *"We have been suffering and the oil spill has destroyed our land and farms, we cannot farm again and even when we farm the yields are very poor and the leaves of the crops looks yellowish. That has made the farms infected and productivity very low. Very hard for us to change occupation. No money to change, we are just trying to survive" "The government and its*

agencies are fraudulent and corruption has taken and diverted all the funds allocated for oil spill communities. The ministry of Niger Delta is engulfed in massive corruption".

"We have to convert other lands around for farming, even small portions in the compound are now used to plant crops and vegetables. We have to buy improved seedlings from the ministry of agriculture and other private companies".

"Yes, we try and maximize the use of little unpolluted lands, we purchase fertilizers from the ministry and private suppliers to improve yields, mixed cropping and other methods are adopted. Many tried to learn other occupations while many bought keke napep (tricycles), motorcycle which they commercialized and combine farming with commercial transportation".

9. Resilience of Women in Imo State

The devastating impact of oil spill greatly endangered the traditional occupation of women as most of them who lost their farmlands and could not fish had to divert to other means of livelihood, some exposed themselves to gender hazards. Some of the women had to neglect the traditional norms, and occupational restrictions customarily prevalent in their communities and started doing jobs traditionally meant for men folk. Some women can be seen as commercial transporters, riding tricycles, motorbikes, trading in spare parts, crude oil, petrol and allied products, sale of fire woods, hair weaving and dressing, repair jobs and engaged in unskilled wage labour like day pay jobs in building sites carrying blocks, mixing cements and gravels etc. as adaptive strategies. The socioecological hazards that forced most youths into crude oil refinery and illegal oil bunkering did not leave the female folks as some of the women out of frustration and desperation to make money to solve their economic challenges joined in the oil bunkering businesses. However, some female informant expressed their feelings that such occupational changes exposed women to vulnerabilities, sexual harassment, violence and conflict with law enforcement agencies who most cases abused them.

> *"These oil spill hazards have exposed women to a lot of risky activities which used to be unethical in our communities. Women now are involved in bunkering, some immoral money making activities, riding commercial motorcycles, driving commercial transportation, and engage in other jobs customarily meant for the male counterparts" "These occupational changes are caused by the oil spill and as humans we must find alternative ways of survival"*

These social adaptations have its overlapping influences on relatives and friends of families residing outside the communities as there were constant complaints and calls soliciting for financial help and supports to feed the families and cater for expenses since the little the families make from the backup jobs were not enough. Such requests for food and financial supports expand from family members to friends, government and non- governmental organizations. Dependence and external linkages are also important and can positively influence community adaptation as studies has shown that in event of disasters, external help are always needed for both technological, scientific and financial such as emergency livelihood funds, special loans, advance payments which may be lacking in the communities (Cheong, 2012). Similarly, this hazards and resilience forced some women especially widows to sale their family lands as cost of lands continue to rise since large expanse of lands were

lost to oil spill, so the few unpolluted lands appreciated in value as demands for land increases. Though these sales raises capital for the women and families, but it is disadvantageous as their children would be faced with land scarcity in future.

Another vital discovery in the study is that the strong attachment of spirituality to the disasters by the communities have strongly motivated them in reducing the level of trauma and stress caused by the oil spill. They believed God is over seeing their sufferings and has a way of sustaining them. Mostly women almost spend much of their time in prayer homes and even engage in weekly night vigils praying for God's intervention. The traditional worshippers continue to appease their gods "chi" through sacrifices to save and provide for them as these disasters hits. Bringing divinity to the spills and aftermath of it. Similarly, other locations that witnessed such natural disasters had similar hope in God for their survival and resilience, where spirituality has encouraged the people to be resolute, raising their faith and coping with the stress (Weinberg and Elimellech, 2022). Similarly, a study in Alberta wild fire disaster in Canada in 2016 found that spirituality played a key role in the community resilience (Lalani et al., 2021). Similarly, the Puerto Rican families who resettled in Orlando, Florida post-Hurricane Maria, Iranian men affected by natural disaster (Nejati-Zarnaqi et al., 2022), the Fukushima disaster (Wada et al., 2022) and typhoon Ketsana victims in Philippines (Ballano, 2022), all resorted to spirituality as part of resilience.

10. Occupational Changes in Imo State

The loss of fishing waters and farmlands in these communities led to occupational changes. Many of the stronger and younger residents relocated to the cities in search of white-collar jobs while some started trading with the little capital they could raise. Many of the residents who could not relocate into the cities tried and engaged in other occupations like craft making, welding, bricklaying, carpentry. Some raised income and bought commercial motorcycles, tricycles, buses and started transportation business. Similarly, some illegal crude oil businesses erupted in these communities. The private illegal crude oil refineries were set up and crude oil from theft and vandalization were refined in these hidden refineries and sold to users in the black market. Such black-market sales grew in numbers and oil bunkering increased tremendously. Recently there was a fire outbreak in Ohaji/ Egbema communities in Imo State on 22nd April 2022 that claimed hundreds of lives and destroyed properties due to illegal oil bunkering activities (Owalabi, 2022). The sad effect of this occupational changes is the increase in criminality, conflict among the youths and government security agents, increased kidnapping for ransom and incessant killings. The informants complained that they hardly sleep with their eyes closed as gun battles rains most times and the security agents at times goes on mass arrest of people especially youths not withstanding if they were involved in the crude oil theft, refining and sale or not. These oil spill resiliencies have metamorphosed into lots of criminality and social conflicts in the region. The conflict now locked head on between the oil companies, the government and the residents especially the youths who have taken up arms due the devastating impact of oil drillings activities, neglect of the environment, non-provision of social amenities and no adequate compensation to the affected communities.

The adaptation of triangular conflict resolution model would be highly useful in solving issues of disaster management especially in oil spill as this would boost the resiliency of

communities after each disaster. The triangular model comprised the government, the oil companies and the communities. As explained by this model, the joint committee comprising these major component stakeholders in the oil spill incidents would resolve the crises that emanates after oil spills and adequate compensations and recoveries of spilled environment successfully and satisfactorily implemented. Unfortunately, in Nigeria the government have not found it important to come out with a policy statement on resilience as done in other advanced countries of the world. Resilience policies should cover economic, institutional, community capital, human capital, social capital, and physical infrastructure inclusive of resources like health, and natural resources.

11. Conclusion and Recommendations

The study concludes that resilience is a vital component and humanistic strategy interference after each disaster especially disasters that involved human, ecological and environmental. Various bodies of governmental and non-governmental should ensure adequate measures made to prevent and reduce disasters as well as place adequate machineries to combat such disasters and to reinstate the environment and humans to their earlier state if not better.

A comprehensive analysis framework for disaster management has to put into consideration, the sources of the disaster and shock, the absorbability of the shock by the community, the resultant impact of the shock or disaster, community's subsequent trajectory and the final outcome of the measures which explains the resilience (Dabson et al., 2012). Unfortunately, despite repeated research and publications on the negative impacts of oil spill in Imo State and the Niger Delta Region and the formation of the Niger Delta Development Commission and Ministry of Niger Delta, not much have been done to improve the lives of these communities. Huge amount of money are budgeted yearly for this ministry but the very high level of corruption that has engulfed the ministry and the misplacement of priorities, misappropriation, embezzlements, lack of accountability and the appointment of corrupt politicians into the board and management of the ministry has been traced to hamper meaningful improvement in the region (Ogundiya, 2011; Gonzalez, 2016). Community resilience generally should focus on key sectors of human needs and well-being as a bounce back including local knowledge, community networks and relationships, communication, health, governance and leadership, economic investment, resources, preparedness, and mental outlook (Patel et al., 2017). Nigerian government should endeavor to formulate strong, enforceable and rehabilitation policies of resilience for the oil spill, natural and technological disasters by setting up committee of experts to design these resilience frameworks that would enable the affected bounce back to life and improved well-being.

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