The Impact of Digital Technology on Raising Awareness Among Young People During the Covid-19 Health Crisis in Cotonou, Benin

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Abstract

The COVID-19 pandemic posed major challenges for public health communication. In Cotonou, one of the main challenges was to encourage young people to get vaccinated in a context marked by significant reluctance and a flood of contradictory information on social media. This study examined the effectiveness of digital campaigns aimed at raising awareness among young people about COVID-19 vaccination. The main objective was to analyse the impact of digital campaigns on young people's decision to get vaccinated. To this end, a literature review was conducted, followed by a survey of a sample of young people in the city of Cotonou to assess their exposure to the campaigns, their perception of the content, and the perceived influence on their decision. The results showed that although participants had been widely exposed to digital campaigns, the effect on their decision to get vaccinated remains limited. Whilst the content is generally considered informative and relevant, its impact on young people's engagement is low. Other factors, such as the influence of family members and trusted figures, appear to be more decisive in the decision to get vaccinated. These findings have led us to make a number of suggestions to ensure that future digital campaigns aimed at mobilising young people during health emergencies have a greater impact beyond their immediate reach. These include, among other things, better tailoring content formats to young people's habits and involving local influencers.

Keywords : COVID-19, Digital campaigns, Young people, Public health communication, Cotonou

Résumé :

La pandémie de la COVID-19 a posé des défis majeurs en matière de communication en santé publique. A Cotonou, l'un des enjeux principaux a été de mobiliser les jeunes à se faire vacciner dans un contexte fortement marqué par des réticences et un flux important d'informations contradictoires sur les réseaux sociaux. Cette étude s'est intéressée à l'efficacité des campagnes digitales menées pour sensibiliser les jeunes à la vaccination contre la COVID-19. L'objectif principal était d'analyser l'impact des campagnes digitales sur la décision des jeunes de se faire vacciner. Pour ce faire, une revue de littérature a été effectuée, suivie d'une enquête auprès d'un échantillon de jeunes de la ville de Cotonou afin d'évaluer leur exposition aux campagnes, leur perception des contenus et de l'influence perçue sur leur décision. Les résultats ont permis de constater que bien qu'ils aient été largement exposés aux campagnes digitales, l'effet sur leur décision de se faire vacciner reste limité. Si les contenus sont jugés globalement informatifs et pertinents, leur impact sur l'engagement des jeunes est faible. D'autres facteurs comme l'influence de la famille et des figures de confiance, apparaissent comme plus déterminants dans le choix de se faire vacciner. Ces constats nous ont amenés à faire quelques suggestions afin que les futures campagnes digitales de mobilisations de jeunes en situation d'urgence sanitaire aient plus d'impact au-delà de leur portée. Il s'agit entre autres de mieux adapter les formats de contenus aux usages de jeunes et d'associer des figures d'influence locales.

Mots clés : COVID-19, Campagnes digitales, Jeunes, Communication en santé publique, Cotonou

Introduction

Social media and its influence on young people's behaviour and choices have been the subject of much debate for several years. The content to which young people are exposed on a daily basis across various platforms is likely to lead them to adopt or consume products that could even be harmful to their health. A study by Gatinet & Gallopel-Morvan (2021) demonstrates, for example, that alcohol brand marketing, particularly promotional messages shared on social media, plays a role in young people's alcohol consumption, in addition to the influence of their family, social and cultural environments.

This influence is confirmed by Hisfeld (2023) in his research on the perceived health of 18 – 39-year-olds and the consumption of health-related content on social media. According to his findings, "*social media reliability also affects the target audience's health perception. Indeed, a negative correlation was identified: a user who considers social media to be reliable has a lower perceived health score than a user who considers it unreliable. Furthermore, the more a user is exposed to a variety of social media platforms, the more their health perception is affected.*"

One of the most alarming aspects of this influence exerted by social media is, among other things, the promotion of medicines. This practice poses a real danger, yet it is perpetuated by people acting in bad faith across various platforms. Naudon (2023) explains: "*Social media allows information to be disseminated quickly and to a wide audience; it thus sets the trends to follow. However, this uncontrolled, all-encompassing communication can be harmful, particularly when it comes to promoting a medicine—often misused for purposes other than its intended use—or a consumer product deemed problematic in terms of public health, such as the vape.*"

This situation highlighted, in the context of COVID-19, major challenges in public health communication, particularly regarding the promotion of vaccination. In this context, social media emerged as a tool of choice for disseminating information, raising awareness and mobilising the population, and more specifically young people. In Cotonou, Benin's economic capital, where young people make up a significant proportion of the urban population, vaccination campaigns faced various obstacles, among others, misinformation, mistrust of health authorities, and cultural reluctance.

On 26 July 2021, Benin received its first vaccine doses : 302,400 doses of the Johnson & Johnson COVID-19 vaccine. At that moment, a new challenge began: convincing the public, and especially young people, to get vaccinated. Non-governmental organisations (NGOs), businesses and various stakeholders, in support of the government's efforts, organised digital campaigns. During the period these online campaigns were active, their messages stood out through hashtags and

appeared to have genuinely reached a large number of people. But can the same truly be said regarding their influence on young people's decision whether or not to get vaccinated? In other words, did social media campaigns impact the decision of young people in Cotonou to get vaccinated against COVID-19 in 2021-2022 ? From this main research question, three key concerns emerge.

- What types of digital content were used to influence young people in Cotonou towards COVID-19 vaccination in 2021-2022 ?
- How relevant was the digital content used to disseminate campaign messages aimed at mobilising young people in favour of COVID-19 vaccination in 2021-2022 ?
- What is young people's perception of digital awareness campaigns for COVID-19 vaccination in 2021-2022 ?

Thus, the overall objective of this research is to analyse the impact of digital campaigns via social media on the decision of young people in Cotonou to get vaccinated against COVID-19. Specifically, the aim is to :

1. Identify the types of content used to encourage young people in Cotonou to get vaccinated during the 2021-2022 period;
2. Assess the relevance of the digital content used in disseminating digital campaign messages aimed at encouraging young people to get vaccinated against COVID-19 in 2021-2022 ;
3. Examine young people's perceptions of digital awareness campaigns regarding vaccination against COVID-19 in 2021-2022.

The research rests primarily on the hypothesis that the roll-out of digital campaigns via social media influenced the decision of young people in Cotonou to get vaccinated against COVID-19 in 2021 - 2022. Specifically :

- Digital campaigns promoting COVID-19 vaccination used a variety of content (videos, infographics, testimonials, challenges, etc.) to engage young people in Cotonou.

- The digital content used during the campaigns to encourage COVID-19 vaccination in 2021-2022 was perceived as relevant by young people.
- Young people in Cotonou had an overall positive perception of the digital awareness campaigns, which influenced their willingness to get vaccinated.

1. Research Methods and Materials

This section covers the research context, the methodological approach, and the theoretical framework.

1.1 Research Setting : The City of Cotonou (Benin)

The city of Cotonou is a municipality with special status and serves as the economic capital of Benin. It is situated on the coastal strip from which it takes its name, the Littoral Department, established under Benin's latest administrative reorganisation on 15 January 1999. The Littoral Department was a sub-prefecture of the former Atlantic Department, which itself dates back to the territorial division of 1958, when the country comprised six provinces resulting from the French colonial partition. With an area of 79 km² (0.07% of the national territory), the Littoral Department is the smallest of Benin's twelve departments. Situated at the intersection of 6°20' north latitude and 2°20' east longitude, it is bounded by Lake Nokoué to the north, the Atlantic Ocean to the south, the commune of Sèmè-Kpodji (in the Ouémé Department) to the east, and the commune of Abomey-Calavi (in the Atlantique Department) to the west. It is the only department in the country comprising a single commune, with 13 arrondissements and 143 city districts. Cotonou alone concentrates almost all of the country's administrative and political functions (INSAE, 2015).

1.2 History and Socio-Demographic Characteristics of Cotonou

All of Benin's cultures converge in Cotonou. From every corner of the country and every walk of life, the men and women of this nation have gathered here at different times, enriching the city, which now covers approximately 79 km². Its name, Kútɔ̀nú, means 'On the banks of the river of death' (Höftmann, 2003) and is a treasure trove of history that the whole of Benin struggles to hold in its collective memory. The city

is situated on the coastal strip between Lake Nokoué and the Atlantic Ocean. Its first inhabitants are said to have been 'Tor fin nou' fishermen, members of the ethnic group 'saved by the river, who still live today in the Awansori district, one of the oldest parts of Kútɔ̀nú.

Following the abolition of slavery, whilst Ouidah, a coastal town that had served as a hub for the slave trade, was under surveillance, Cotonou served as an unofficial port of embarkation for enslaved people in the mid-19th century. Under a treaty signed on 19 May 1868 by King Glèlè, the town was leased to the French for 20,000 francs per year. Its use as a supply hub fostered its growth and attracted many French settlers, who built the first roads and, in 1885, dug a canal cutting the city in two, facilitating access from the sea to the Porto-Novo lagoon via Lake Nokoué.

Between 1891 and 1893, France built a wharf extending from the coast beyond the surf zone, marking the start of modern construction and the railway in Cotonou. After defeating Béhanzin, the colony of Dahomey was established in 1894 under Governor Victor Ballot, with Cotonou becoming its commercial and business hub.

Since then, the former marshy territory has continued to expand. Like all major cities, Cotonou has undergone several transformations and sustained strong demographic pressure driven by significant migration flows, including rural exodus. As human settlement caused the swamps to recede and space for population growth became scarce, neighbouring towns such as Abomey-Calavi, Ouidah and Sèmè-Kpodji were transformed into commuter towns.

Created by the administrative reorganisation of 15 January 1999, Cotonou is Benin's only commune-department. Its population, as recorded in the General Population and Housing Census (RGPH4) of May 2013, stands at 679,012 inhabitants, compared with 665,100 according to the National Institute of Statistics and Economic Analysis (INSAE, 2015). The first two censuses (1979 and 1992) recorded populations of 320,332 and 536,827 respectively. Annual intercensal growth rates have been falling since 1979—from 4.05% between 1979 and 1992, to 2.17% between 1992 and 2002, and then to 0.18%

between 2002 and 2013. The city functions primarily as a workplace, emptying of its population each evening as residents move to the neighbouring municipalities of Abomey-Calavi and Sèmè-Kpodji. The sex ratio stood at 95.4 men per 100 women in 2013, and the department's share of the national population fell from 9.82% in 2002 to 6.8% in 2013. Population density is 8,595 inhabitants per km². The three main linguistic communities are the Fon and related groups (56.5%), the Adja and related groups (17.7%), and the Yoruba and related groups (10.9%). The population is predominantly Catholic (51.2%) and Muslim (16.9%), with other Christians and Celestians accounting for 12.2% and 5.7% respectively.

Despite its urban character, Cotonou has 413 farming households out of a national total of 651,067 (0.06%), consisting solely of market gardeners and fishermen.

1.3 Technical and Digital Infrastructure

Cotonou plays a central role in Benin's digital ecosystem. According to Acumen and ACED (2023), around 48% of the 102 digital companies identified nationwide are based there, most of them very small organisations (nearly 7 out of 10 employees), offering digital solutions across agriculture, health, education, finance, and other sectors. This concentration is partly explained by the city's demographic makeup.

This dynamism is not merely spontaneous; it is underpinned by significant infrastructure investment. The Telecommunications and ICT Infrastructure Development Project (PDI2T) enabled the laying of over 2,000 km of underground fibre-optic cable, interconnecting 67 municipalities and increasing network capacity to 800 Gbps. In the Greater Nokoué region, of which Cotonou is a part, this expansion was accompanied by the creation of 34 shared access points.

Cotonou's lead in the digital sphere is nothing new. As early as 2003, the municipality had 462 internet café, accounting for over 72% of private-sector internet access provision nationwide (INSAE, 2010). Since then, the growth of mobile and fixed-line connections has reinforced this position. However, actual use of ICTs remains fairly

limited, particularly in areas where electricity supply is unreliable or digital skills are lacking, illustrating that infrastructure alone does not guarantee inclusion.

In terms of mobile connectivity, mobile broadband accounted for 39% of the market in 2020, rising to 51% the following year. The pandemic acted as a catalyst, driving a marked increase in data consumption. The operator Bénin Télécom Infrastructures (BTI) halved its access prices whilst deploying public digital hubs and free Wi-Fi hotspots in several strategic locations (Djossou, G. et al., 2022). These developments confirm Cotonou's role as a key player in the country's digital transformation, even as disparities persist.

1.4 Media Landscape

The media landscape in Cotonou is characterised by significant pluralism and a process of restructuring driven by the rise of digital technology. According to a recent sociological analysis, traditional media (radio, television, print press) coexist with a rapidly expanding digital ecosystem, in which social media and online platforms play a central role in the production and dissemination of information (Tchogbé, 2024). Underlying this are identity tensions, notably a crisis of legitimacy for traditional media in the face of the growing popularity of digital outlets.

Nevertheless, radio remains the most widely used source of information in Cotonou, with around 61% of citizens tuning in daily, followed by television and digital social media. Platforms such as WhatsApp, Facebook, YouTube, Instagram and TikTok have become major channels for information, particularly among young people and urban populations. In 2017, around 58% of Beninese people obtained their news almost exclusively via social media, compared with just 26% through the traditional press (Afrobarometer, 2019), illustrating the profound transformation in media habits. This shift is accompanied by challenges, notably the variable quality of online information and a lack of investigative journalism due to economic and professional constraints.

Despite a wide range of legal provisions designed to guarantee press freedom, the media landscape is struggling to survive, now comprising just 70 radio stations, around 100 newspapers and some 15 television channels (Media Foundation for West Africa, 2021). This quantitative breadth masks structural weaknesses, such as inadequate journalist training, limited editorial independence, precarious finances in media organisations, and self-censorship.

The rise of social media has also led to significant informational vulnerability. The widespread use of mobile phones to access the internet facilitates the rapid spread of both information and disinformation, exposing the population to manipulation (Tchango & Mahoussi, 2022). Nearly 98% of users prefer the mobile phone for internet access, which exacerbates this trend. In response, regulatory and ethical initiatives, such as the National Code of Ethics for Journalists and the work of the Observatory of Ethics and Professional Conduct in the Media (ODEM), are attempting to regulate the sector, though their effectiveness remains limited by internal difficulties and a rapidly changing media environment.

2. Methodology

2.1 Data Collection Techniques

This research rests on a rigorous data collection process combining two approaches. The first is a qualitative approach based on direct observation and a literature review, involving a critical analysis of specialist literature, academic theses and prior scientific articles on the subject. The second is a quantitative approach through fieldwork, enabling empirical data to be collected directly from the target audience.

The observation focused on social media platforms, Facebook, Instagram, TikTok and WhatsApp, with emphasis on content formats, engagement generated (comments, shares, likes), and debates sparked by the digital campaigns. Data collected through this method were recorded as observation notes and served to complement results from other research tools, providing qualitative insight into actual social media use by the target group. The literature review enabled the

collection and analysis of secondary data from academic, institutional and specialist sources relating to the use of digital technology in health awareness-raising. More specifically, it involved examining academic texts, research theses, journal articles, institutional reports and online documents, for which several documentation centres and libraries were visited. The questionnaire survey began with the design of an instrument based on the research questions, objectives and hypotheses. It included questions on exposure to digital campaigns, perceptions of content relevance, and the impact of campaigns on the target audience. The questionnaire was pre-tested to identify weaknesses and improve its adaptation to the target population. It was then administered via an online form created using Google Forms, with the link distributed through social media. To ensure completion by those meeting the sampling criteria, the link was accompanied by a note specifying the eligible respondent profile.

2.2 Sampling Technique

2.2.1 Target Population

For the quantitative survey, the target population comprised all individuals aged 16 to 35 years, residing in one of the 13 districts of Cotonou, and who had used the internet and social media during the 2021-2022 period. This age bracket was selected because it corresponds to the demographic category most active on digital platforms and most exposed to digital communication campaigns on vaccination.

2.2.2 Justification of the Sampling Method

To ensure statistical representativeness of the sample and allow generalisation of findings to the entire target population, we opted for a two-stage probability cluster sampling method. This approach offers several methodological advantages :

- It ensures that every member of the target population has a known, non-zero probability of being included in the sample, which is a necessary condition for statistical inference ;
- It allows for reduced costs and logistical complexity compared to simple random sampling across all 13 districts ;

- It guarantees balanced geographical coverage of Cotonou municipality, thus avoiding over-representation biases from certain neighbourhoods.

2.2.3 Two-Stage Sampling Procedure

In the first stage, 7 districts were randomly selected from the 13 that make up Cotonou municipality. This random selection ensured that each arrondissement had an equal probability of being included in the sample, thereby minimising geographical biases. In the second stage, 15 individuals meeting the target population criteria (aged 16-35 years, residing in the selected arrondissement, internet and social media users) were randomly selected from each of the 7 chosen districts. Random selection within each district was carried out using. In total, 105 individuals participated in the quantitative survey (7 districts × 15 individuals = 105 respondents).

2.3 Data Analysis Techniques

Data processing involved verifying and cleaning the questionnaires and finalising the coding. Google Forms automatically generated the data, which facilitated import into Word and Excel for producing graphs and other visual aids. For open-ended questions, a preliminary step involved analysing response patterns and classifying them into broad categories. Flat-sort tabulation was used for the presentation of results.

2.4 Theoretical Framework

This research draws on two theoretical frameworks: the Diffusion of Innovations Model (Rogers, 1962) and Commitment Theory (Kiesler, 1971).

2.4.1 The Diffusion of Innovations Model

The Diffusion of Innovations Model belongs to the persuasion-and-information-transmission paradigm and has had a major influence on educational communication practices for development. Originally formulated by Rogers (1962) from agricultural extension practices in developing countries, the model takes into account three main elements: the target audience for the innovation, the innovation itself, and the sources and channels of communication. It provides a

framework for understanding how a new idea, technology or innovation spreads within a given population.

Although the model has been criticised for its reductionism, particularly its failure to account for different types of target audience, its use here is justified by the research's focus on a specific audience (young people in Cotonou) and its need to understand how information on vaccination is disseminated within this population. By analysing group dynamics and the spread of information across different segments of this audience, Rogers' model enhances understanding of how digital campaigns influence young people's vaccination behaviours in Cotonou.

2.4.2. Commitment Theory

Kiesler's (1971) Commitment Theory is a key framework in social psychology that emphasises the role of actions, rather than ideas, in explaining human behaviour. It highlights preliminary behaviours, preparatory acts, that can be elicited from an individual and used to encourage one or more people to take a given action.

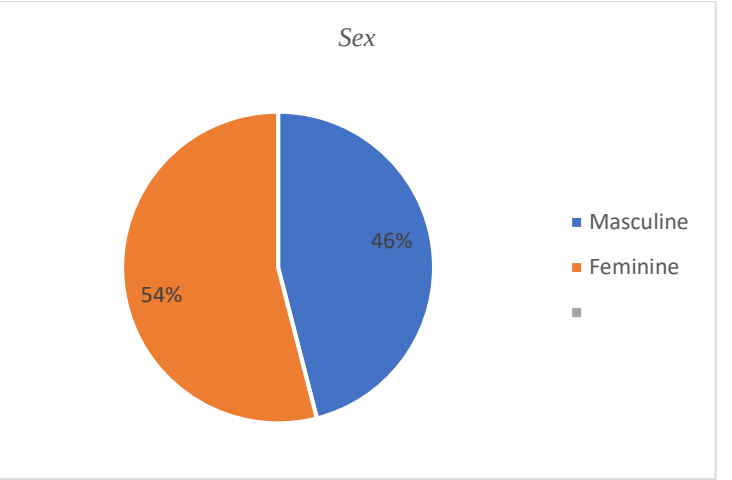
The theory posits that individuals commit through their actions rather than through their attitudes, convictions or beliefs: initial behaviour influences future actions under the influence of circumstances. For Kiesler, an individual's commitment creates a lasting link between them and their action, leading to cognitive stabilisation (resistance to counter-propaganda) and behavioural stabilisation (repetition or intensification of the behaviour). This cognitive stabilisation is what Kiesler (1971) calls 'voluntary compliance', whereby actions explain subsequent cognitions ('It is because I do something that I think it'). The theory explains why people maintain decisions despite doubts, and is applied in persuasion contexts such as prevention campaigns, where minor actions lead to lasting changes without the need for forceful arguments.

Incorporating Commitment Theory into this research allows us to explore the influence of young people's engagement with digital campaigns on their perception of vaccination and, by extension, on their decision to get vaccinated.

3. Results

3.1 Presentation of Results

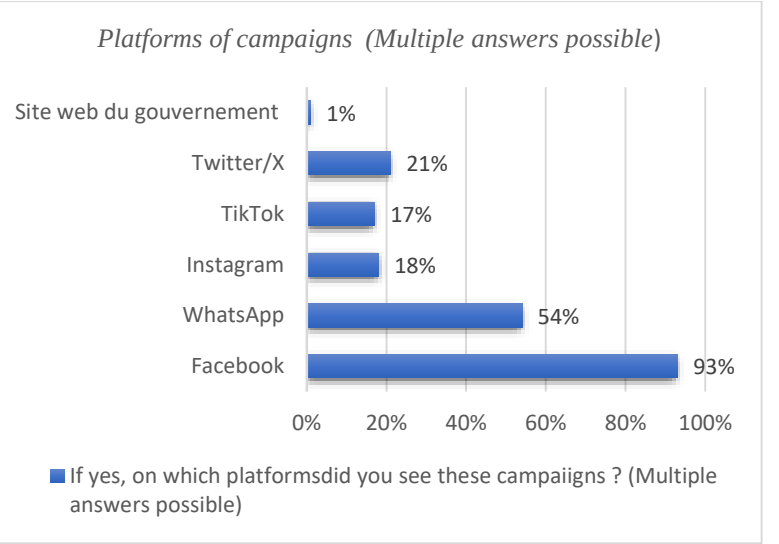
The results presented below are drawn from questionnaire data collected from young people in Cotonou aged 18 to 35. The questionnaire aimed to gather their perceptions of digital awareness campaigns for COVID-19 vaccination (2021 - 2022).



Sources: Field data, May 2025

Figure 1: Breakdown of study participants by age

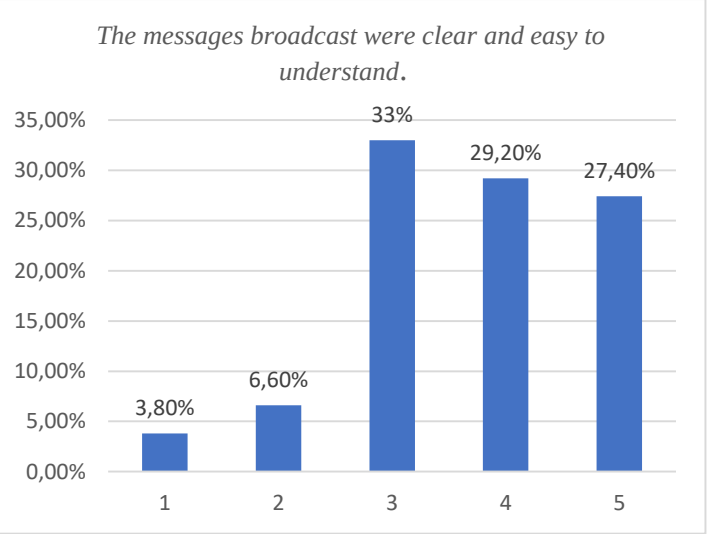
Feminine respondents accounted for 54% and masculine respondents for 46%, indicating near-equal interest in the subject across genders. A majority of respondents (64%) had received a COVID-19 vaccine, whilst 36% had not. Furthermore, 88% reported having seen content from at least one digital campaign, demonstrating the wide reach of campaigns among the young target audience during the content dissemination period.



Sources : Field data, May 2025

Figure 2 : Platforms where participants encountered campaign content

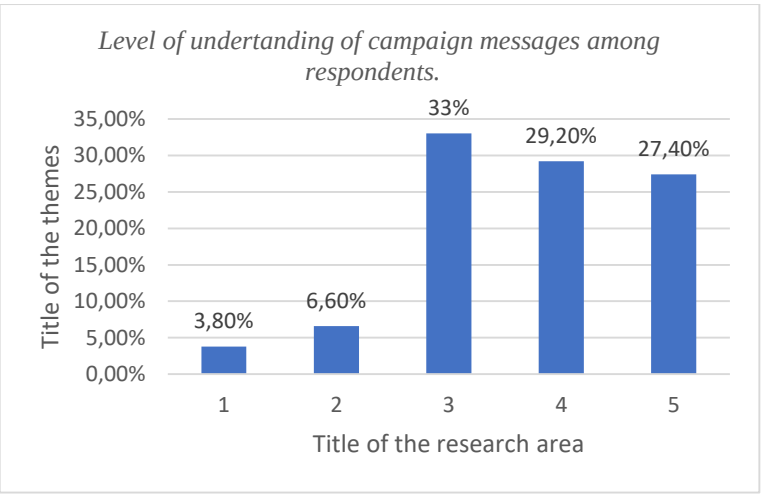
Figure 2 shows the platforms on which digital campaign content was noticed. The most frequently cited were Facebook (93%) and WhatsApp (54%), indicating that campaigns were disseminated via high-audience channels—a relevant choice. However, TikTok (17%) and Instagram (18%) were cited less frequently, despite being recognised as the preferred platforms among young people. Similarly, Twitter/X—cited by 21% of respondents and well suited for content virality—was under-utilised.



Sources : Field data, May 2025

Figure 3 : Types of content encountered by participants in pro-vaccination digital campaigns

Figure 3 shows that participants were exposed to a wide variety of content during the digital awareness campaigns. The most common content was posters (seen by 75% of participants), followed by videos (67%), text messages (53%), photos (52%) and infographics (31%). These content types are well aligned with young people's content consumption habits and are therefore appropriate for conveying campaign messages to this audience. By contrast, stories (26%) and challenges (9%) ranked last, despite their interactive and engaging nature, which could have been more effective at capturing young people's interest and influencing their choices.

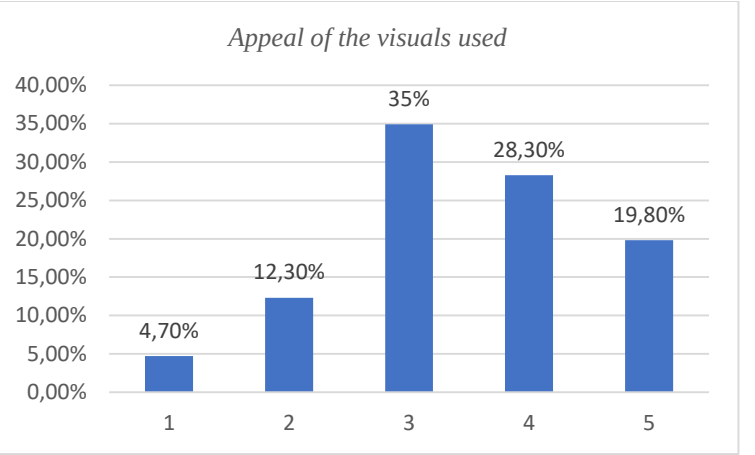


Source : Field data, May 2025

Figure 4 : Level of understanding of campaign messages among respondents

(1 = Strongly disagree; 5 = Strongly agree)

Figure 4 shows that the vast majority of participants clearly understood the messages conveyed during the digital campaigns: a significant proportion (56.6%) gave scores of 4 or 5, indicating a high level of comprehension among the young target audience. However, 33% gave a score of 3, suggesting that some remain uncertain and that message wording could be refined to ensure universal understanding.

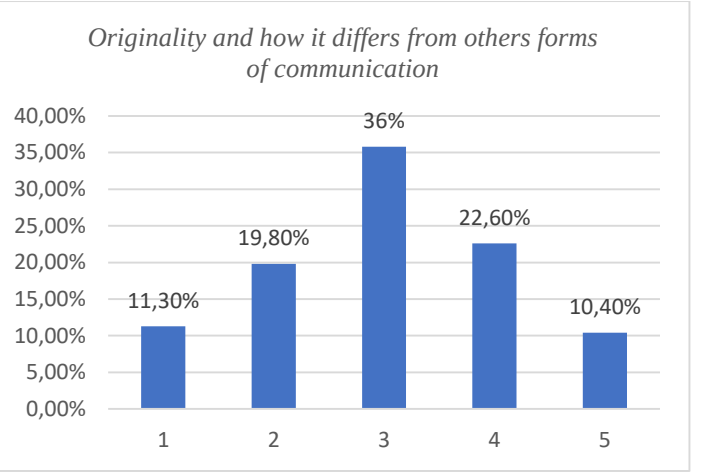


Source : Field data, 2025

Figure 5 : Assessment of the visual appeal of content used in digital campaigns

(1 = Strongly disagree; 5 = Strongly agree)

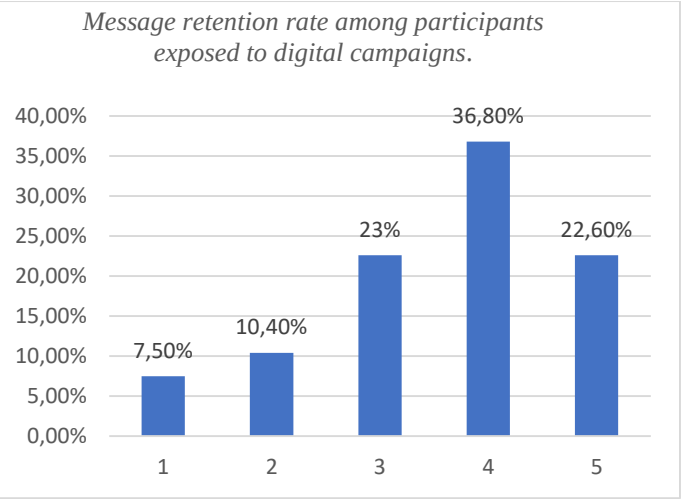
Figure 5 shows that visuals were considered attractive by a majority of participants, with 48.1% giving scores of 4 or 5, reflecting effective use of graphic design in most posters and infographics. However, 35% gave a score of 3, and 25.5% gave scores of 1 or 2, indicating a significant need for improvement in graphic and creative quality.



Sources : Field data, May 2025

Figure 6 : Assessment of the perceived originality of campaigns (1 = Strongly disagree; 5 = Strongly agree)

Figure 6 reveals that most respondents remained sceptical about the originality of the digital campaigns compared to other forms of communication. The majority chose a score of 3, reflecting a neutral stance and suggesting that most campaigns were perceived as either too institutional or too conventional. In a context of media saturation such as the COVID-19 health crisis, originality is one of the surest ways to capture attention. That said, 33% of respondents gave scores of 4 or 5, indicating that some campaigns did manage to stand out.

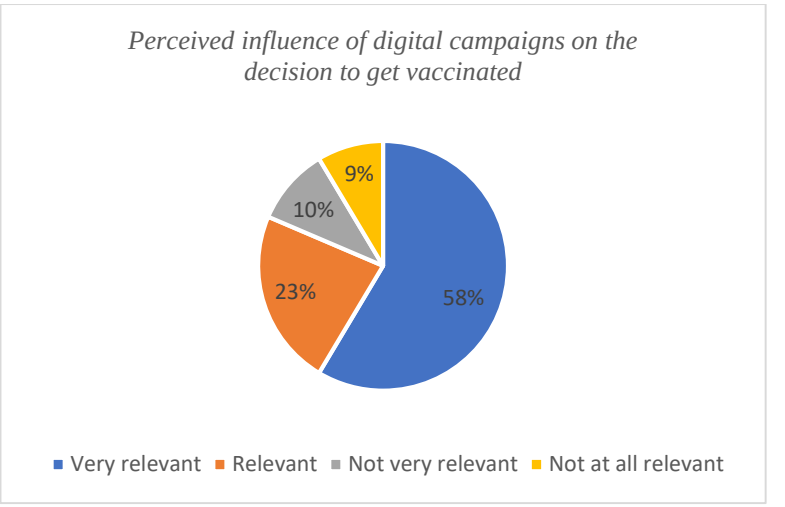


Sources : Field data, May 2025

Figure 7 : Message retention rate among participants exposed to digital campaigns
(1 = Strongly disagree; 5 = Strongly agree)

Figure 7 shows that the majority of participants retained the messages disseminated in the digital campaigns. A large proportion (59.4%) gave scores of 4 or 5, indicating that they clearly remembered at least one message received during the campaigns, suggesting the messages were sufficiently impactful.

Overall assessment by survey participants shows that 61% consider this online communication approach relevant and 15% consider it very relevant, feedback that underscores the value of using social media during health crises to inform and raise awareness among young people.



Sources : Field data, May 2025

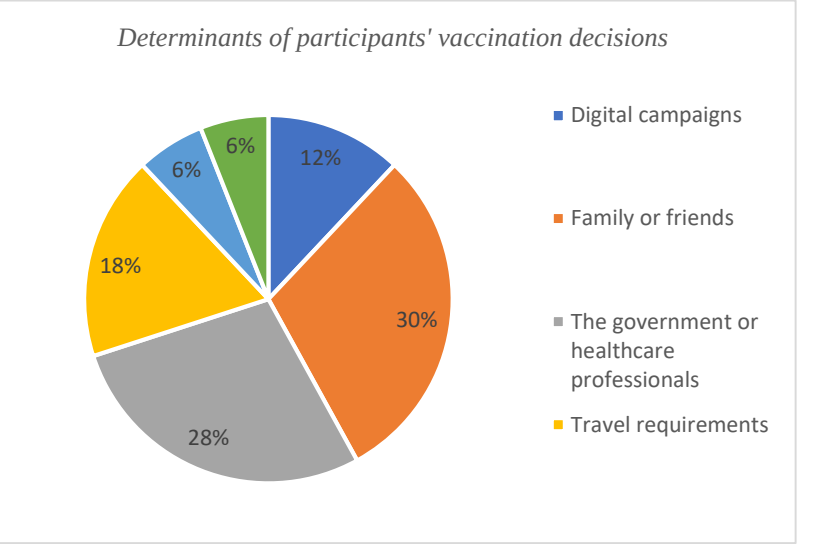
Figure 8 : Perceived influence of digital campaigns on the decision to get vaccinated

Figure 8 shows that 48% of respondents felt that digital campaigns did not influence their decision to get vaccinated against COVID-19, whilst 44% acknowledged to varying degrees that the campaigns may have played a role in their choice.

For 38% of participants, campaigns partially contributed to building trust in vaccines, and more substantially so for 17%. This demonstrates that the messages not only provided information but also helped to dispel young people's fears and doubts about COVID-19 vaccines.

34% of participants shared vaccination-related information or campaigns on their social media, whilst 66% did not. This reveals limited active participation by young people in relaying pro-vaccination messages, a relatively low rate in a context where digital campaigns rely on content virality. Young people's involvement in

sharing information is, however, a factor that can itself influence the decision to get vaccinated.



Sources: Field data, May 2025

Figure 9 : Determinants of participants' vaccination decisions

According to Figure 9, family and friends were the most influential factor in vaccination decisions (30% of responses), followed by government and health authorities (28%), travel-related needs (18%), digital campaigns (12%), professional requirements (6%) and social media content not linked to official campaigns (6%). These distributions show that even when digital campaigns help to inform young people, they are not always sufficient to prompt action. Other social levers, such as close social circles, work environments and credible institutions, must also be engaged. Notably, 85% of participants received information about COVID-19 vaccination from sources other than social media, and only 15% relied exclusively on social media, confirming that a wide variety of channels were involved in encouraging vaccine uptake.

As regards the channels through which respondents received the information, television (75%) comes top, followed by radio (61%) and posters (50%), newspapers (42%), training and awareness sessions (7%), web media (2%) and word of mouth. This confirms that in health crisis communication, traditional channels remain essential complements to online channels. Combining both enables better information dissemination to young people and stronger uptake.

3.2 Analysis of Results

The field survey results show that young people in Cotonou were exposed to several types of content during the digital campaigns on COVID-19 vaccination. Indeed, 88% of participants were exposed to campaign content at least once, demonstrating the significant reach of digital campaigns among young people in Cotonou. As shown in Figure 5, the most viewed content types were posters, videos, photos and text messages.

This demonstrates that content types were quite varied and generally perceived by young people as suited to their age and digital habits. However, despite their capacity to inform, these content types are less likely to generate engagement and interaction than challenges and stories, for example, yet the latter were among the least used formats in the digital campaigns.

Looking at the platforms most used to distribute campaign content, Facebook (93%) and WhatsApp (54%) dominated. Platforms popular among young people, Instagram (18%) and TikTok (17%), were under-utilised, as was Twitter/X (21%), known for its content virality. We can thus validate the hypothesis that "digital COVID-19 vaccination campaigns used a variety of content types (videos, infographics, testimonials, challenges, etc.) to mobilise young people in Cotonou." However, an important nuance must be noted: despite this variety, the content was not optimally distributed to maximise young people's mobilisation. More interactive and engaging formats were under-exploited, and platforms better suited to young audiences were less frequently used.

With regard to the relevance of campaign content, the vast majority of young people agreed that messages were clear and understandable (Figure 4). Message retention was similarly positive, with over half of respondents indicating they remembered the messages well. These findings suggest that most young people exposed to campaign content had little difficulty understanding and retaining the messages.

A large proportion of participants (64.2%) found the content well suited to their age and consumption habits, and 74.5% rated the messages as relevant (scores 3 - 5). However, 25.5% gave scores of 1 - 2, indicating that not everyone felt addressed by the messages. Areas such as campaign creativity and overall content quality still need improvement to better capture the young target audience's attention and to ensure that all segments of that audience are considered in message formulation.

Moreover, 76% of respondents found the digital awareness and mobilisation campaigns for the COVID-19 vaccine relevant, and 55% indicated that campaign messages helped reduce their fears about vaccines by building greater confidence. However, the influence of campaigns on the actual decision to get vaccinated presents a different picture. As shown in Figure 10, 48% of respondents reported no influence from digital campaigns on their vaccination decision, whilst 44% acknowledged some possible influence. Even if this suggests a non-negligible contribution, the primary factors triggering the vaccination decision lay elsewhere. Figure 11 clearly shows that family and friends, health authorities and government were the most influential factors.

Valente, T.W. (2010) demonstrates that health messages are more effective when relayed by nearby, credible agents of change rather than by formal, distant institutions. He introduces the notions of "social network influence" and dissemination via community opinion leaders, which strengthens both the credibility and repetition of messages. In a multimedia approach, this calls for developing health ambassadors, community facilitators, peers, youth leaders, neighbourhood leaders, community elders, who carry and adapt content, rather than merely serving as spokespersons for an institution.

It is also important to note that the awareness campaigns were not conducted exclusively online. Respondents also encountered content on television (75%), radio (61%), newspapers (42%) and city posters (50%), channels that likely provided significant complementary support to online mobilisation. Only 12% of participants chose to get vaccinated as a direct result of online campaigns. This relatively low rate of active mobilisation is also reflected in the content relay rate : only 34% of respondents shared campaign content. Based on these various results, it can be concluded that digital campaigns were generally well perceived by young people in Cotonou, but their impact on vaccination decisions remains moderate. The hypothesis that "young people in Cotonou have a generally positive perception of digital awareness campaigns, which influenced their willingness to get vaccinated" is therefore only partially validated.

4. Discussion

The results of this study show that digital campaigns to raise awareness about COVID-19 vaccination in Cotonou achieved high levels of exposure among young people to messages disseminated on social media. However, this strong visibility did not systematically translate into effective vaccine uptake. This confirms that exposure to information does not necessarily guarantee behavioural change, particularly in a context marked by mistrust, rumours and health uncertainties. This finding echoes Rogers (1962), for whom the adoption of an innovation depends less on the mere circulation of information than on the social dynamics that accompany its diffusion. According to his Diffusion of Innovations Model, individuals gradually adopt an innovation when they perceive its usefulness and compatibility with their values, and when they benefit from the influence of credible opinion leaders within their social environment.

In this research context, young respondents appear to have given greater credence to human interactions and to recommendations from close relatives or health authorities than to the digital campaigns themselves. This corroborates Rogers' work on the decisive role of interpersonal channels in reducing uncertainty about innovation. It also confirms the analyses of Atkin and Rice, (2013), who argue that

health communication campaigns produce better results when they combine media communication with community mediation. Digital campaigns thus appear effective at disseminating information but insufficient when not accompanied by direct exchanges that can build trust.

The study also highlights the limited use of interactive digital formats such as challenges, stories, participatory videos and platforms heavily frequented by young people such as TikTok and Instagram. This restricts target audiences' ability to appropriate messages. Yet, Kiesler's (1971) Commitment Theory shows that individuals are more involved in an action when they actively participate in the process leading to it. In this light, the campaigns analysed appear to have favoured a top-down, informative logic at the expense of participatory communication that would foster young people's psychological and behavioural engagement.

Kaplan and Haenlein, (2010) also support this idea, showing that social networks transform users into content producers rather than passive receivers. Integrating participatory content produced by young people themselves could strengthen their involvement in health campaigns and increase organic message dissemination through sharing mechanisms and community identification.

The study further reveals insufficient consideration of the sociocultural heterogeneity of Cotonou's youth. Although campaigns targeted young people broadly, they did not adequately account for the linguistic and cultural realities specific to different segments of this population. Several studies in health communication highlight the importance of cultural adaptation of messages. Kreuter and Wray (2003) demonstrate that targeted and culturally contextualised communication improves understanding, memorisation and acceptance of public health messages, a finding reinforced by Delany-Moretlwe et *al.* (2018), who show that adapting messages to local contexts facilitates vaccine uptake in Africa.

In this regard, the use of local languages such as Fon, Goun or Yoruba could constitute a strategic lever for reaching young people less

receptive to exclusively French-language content, improving both the accessibility of messages and their symbolic proximity to the daily realities of target audiences.

The study also highlights the importance of source credibility in digital health campaigns. Young respondents appear particularly sensitive to trusted figures such as influencers, celebrities, community leaders and health professionals. This is consistent with Ajeigbe, Oyelami and Sofoluwe, (2022), who emphasise the strategic role of influencers in vaccine awareness campaigns on social media. In a digital environment characterised by information overload and the circulation of false information, trust in relay actors becomes a central factor of persuasion.

Finally, this study shows that digital campaigns would benefit from greater co-construction with young people themselves. Such a participatory approach would reduce the distance between campaign initiators and target audiences. Simuyaba et *al.* (2021) demonstrate that involving young people in the design of health interventions promotes their acceptability and effectiveness, while also strengthening young people's sense of belonging to campaigns and their commitment to disseminating messages.

Conclusion

The COVID-19 health crisis will undoubtedly remain one of the most significant public health emergencies of recent decades. It was an unprecedented challenge that forced all sectors, governments, health systems, civil society, and communication professionals, to redouble their efforts and creativity to contain the spread of the disease. In the field of public health communication, one of the major challenges was mobilising populations to get vaccinated to curb transmission and achieve herd immunity. Actions were taken worldwide, including in Benin, and these interventions must now be rigorously evaluated to draw evidence-based lessons and prepare for potential future health crises.

This research examined digital campaigns and their impact on young people's decision to get vaccinated against COVID-19 in Cotonou, in a context where digital communication has become one of the key levers for raising awareness and mobilising youth populations. The overall objective was to analyse the impact of digital campaigns via social media on young people's vaccination decisions, with specific attention to reach, engagement, message credibility, and behavioural outcomes.

Summary of Key Findings.

A mixed-methods approach was adopted for data collection, combining a quantitative survey with qualitative interviews and content analysis of digital campaign materials. The results yielded a number of key findings that align with contemporary evidence on social media-based health interventions in low- and middle-income countries.

First, digital campaigns did reach young people in Cotonou, confirming that social media platforms constitute viable channels for disseminating health information to youth populations. However, their effects on actual vaccination decisions remain limited. This finding resonates with recent systematic reviews demonstrating that while social media interventions consistently improve vaccine-related knowledge, attitudes, and intentions, their effect on actual vaccination uptake is often not statistically significant. In other words, awareness does not automatically translate into action.

Second, campaign content was predominantly informative but generated little engagement : young people received the messages but did not find them compelling enough to share, comment on, or actively discuss. This passive reception pattern reflects what recent scholarship describes as the "reach-without-impact" paradox in digital health communication. Large-scale campaigns may achieve millions of impressions, yet fail to shift behaviours when they rely on unidirectional messaging without interactive or participatory elements.

Third, the credibility of message sources emerged as a critical factor. Consistent with findings from Ukraine, India, and Pakistan, where UNICEF-led Facebook campaigns failed to increase vaccination coverage despite wide reach, trust in information sources proved more influential than message frequency or content quality alone. In Cotonou, young people expressed greater receptivity to messages relayed by peers, community leaders, or local influencers than to institutional communications perceived as distant or bureaucratic.

Fourth, sociocultural adaptation of messages was identified as a key determinant of campaign effectiveness. Messages that resonated with local values, used familiar languages or dialects, and addressed context-specific concerns (e.g., vaccine safety, religious beliefs, community protection) were more likely to be accepted and acted upon. This finding corroborates recommendations from WHO and behavioural science literature emphasizing the need for culturally congruent, tailored messaging.

This research contributes to theoretical debates in health communication and digital persuasion in several ways. By integrating the Diffusion of Innovations Model (Rogers, 1962) with Commitment Theory (Kiesler, 1971), the study demonstrates that innovation adoption (vaccination) is not merely a function of information exposure, but requires sequential commitment-building through low-barrier actions (liking, sharing, discussing) that gradually strengthen behavioural intentions.

Furthermore, the findings validate recent reconceptualisations of diffusion theory that emphasize heterogeneous activities involving different innovations, actors, and institutional logics. In Cotonou, vaccination diffusion was shaped not only by message characteristics but by interpersonal networks, community norms, and the credibility of relay actors, factors that extend beyond Rogers' original framework. The research also extends Commitment Theory into the African digital context, showing that the foot-in-the-door technique operates through self-perception and consistency mechanisms even in resource-constrained settings where digital access is intermittent and trust in institutions is variable. Young people who engaged minimally with

campaign content (e.g., clicking, reacting) were more likely to report positive vaccination attitudes, though this did not always translate into actual uptake, highlighting the need for multi-component strategies that bridge the intention-behaviour gap. The COVID-19 pandemic has demonstrated both the potential and the limitations of digital communication as a tool for public health mobilisation. In Cotonou, as elsewhere, young people are connected, informed, and capable of critical engagement, but transforming awareness into action requires more than messages. It demands trust, dialogue, cultural resonance, and sustained commitment from all stakeholders. As Benin and the broader West African region prepare for future health challenges, investing in evidence-based, participatory, and contextually adapted communication strategies will be not just an option, but a necessity.

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