



Digital media's portrayal of climate change challenges during COP27 climate summit

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ABSTRACT

The study aims to investigate how digital media frame and present environmental issues and challenges of climate change in terms of four environmental and climate challenges: mitigation, adaptation, finance, and collaboration. The study also seeks to understand the extent that government bodies mobilize digital media to disseminate and promote necessary environmental challenges during COP27 climate summit in Egypt. The study uses the discourse analysis approach to define the key themes and issues that are portrayed and to understand how digital platforms reflected the conference agenda and climate change challenges. We analyzed 119 posts and news reports published on the conference website and Instagram account during November 2022. Results revealed that the platforms framed challenges of climate change during COP27 in many ways: the opportunity to find solutions, the urgency to address climate issues, and taking immediate actions in terms of transparency, adequate finance, ease of support flow, cooperation, participation, and youth involvement. Furthermore, the data indicate that the finance challenge has a strong relationship with all themes and challenges presented and discussed on the platforms. This indicates that African countries benefited from hosting COP27 by presenting their environmental concerns, the financial, and technological challenges they face in order to obtain global support.

Keywords: framing, climate change discourse, digital media, COP27 climate summit, Egypt, environment

INTRODUCTION

This study discusses the role of digital media during COP27 climate summit in Sharm El Sheikh, Egypt, in November 2022. The conference was hosted by the World Meteorological Organization in partnership with the United Nations framework convention on climate change. COP conference series aims to work on protecting the environment and climate, and it also contributes to raising awareness among governments, institutions, and individuals about the importance of having legislation, laws, and agreements to regulate the process of dealing with climate issues (Sikora, 2020). Undoubtedly, individuals play a significant role in engaging in climate-preserving behaviors and reducing the negative impacts of harmful environmental practices. However, this requires awareness of what is unacceptable and what is acceptable. Digital media can contribute to shaping behaviors around this (Bradley et al., 2020). O'Neill (2019) emphasized the importance of using visuals to clarify environmental issues and psychologically impact the audience for persuasive purposes. This gives digital media a better opportunity to influence, because of its ability to reliance on images and visuals to convey content.

The most important outcome of the summit was the agreement to provide "loss and damage" funding for vulnerable countries hit hard by climate-related disasters. In addition to tackling the climate crisis through initiatives such as renewable energy development, the conference also addressed the growing urgency of

protecting climate activists from intimidation and threats around the world (Barnsley et al., 2022). The conference was leading to a number of agreements being made. These included commitments from participating nations to reduce their own emissions and implement measures that will help slow down global warming. Furthermore, it was agreed that more resources should be allocated towards understanding climate related disasters so that effective mitigation strategies can be developed (Ness, 2022).

Global warming has triggered changes in the Earth's climate including an increasing frequency and intensity of extreme weather events such as heat waves, droughts, floods, and tropical cyclones. COP27 Sharm El Sheikh is being framed as an African COP, putting in full view the consequences of climate change across Africa. The impact of climate change is disproportionately greater in developing countries in all sectors, from health to infrastructure to the economy (Sill, 2023). It brought together leaders from around the world to discuss climate change research, COP27 summit also focused on energy policy, developing a global scientific hub for sharing information about energy opportunities and other emerging markets.

The conference aimed to create a framework for aggressive climate action by governments, states and other stakeholders as well as to facilitate international development related to energy transition. It also provided an opportunity for countries to learn from each other and identify potential opportunities in their respective markets. Additionally, it highlighted how collaboration between different countries can help accelerate the transition process by providing access to new technologies, resources, and expertise (Guinto, 2022).

Africa has suffered disproportionately from the climate crisis, although it has done little to cause the crisis (Okoliko & de Wit, 2020). The climate crisis has had an impact on the environmental and social determinants of health across Africa, leading to devastating health effects (Atwoli et al., 2022). Impacts on health can result directly from environmental shocks and indirectly through socially mediated effects. Climate-change-related risks in Africa include flooding, drought, heatwaves, reduced food production, and reduced labor productivity (Zielinski et al., 2022).

Climate change directly impacts the health and wellbeing of adolescents and young people. Extreme weather events increase our risk of physical injury, lung disease, infectious diseases, and poor nutrition (Gasparr et al., 2022). Mental wellbeing is increasingly affected by post-traumatic stress disorder as a result of extreme weather events, climate anxiety, and depression (Wyns, 2023). African countries disproportionately face impacts of climate change on their environments, their economies, their resources, and their infrastructure. This leads to greater vulnerability and increased exposure to the negative effects of a changing climate. In this article, we highlight the importance of climate justice and its role within the United Nations negotiations, and ultimately in concrete action (Ness, 2022).

This global and continental scene pushes the discussion about the significance of digital media contribution in raising awareness about climate change issues and encouraging dialogue within communities. They benefit from their rapid dissemination of information and their ability to transcend geographical boundaries, in addition to the diversity of their tools and capabilities in delivering content to an engaged audience (George et al., 2021). Therefore, the study aims to monitor the role of digital media during the climate change conference in Egypt to understand the extent to which these tools are capable of expressing the concerns and climate-related issues of the African continent, which are part of global climate change issues.

Role of Digital Media in Raising Climate Change Issues

Nowadays, climate change is a national issue in many countries, with news outlets reporting on issues such as extreme weather events, and rising sea levels. Media frames climate change issues depending on the topics formulated by sources, experts, and conferences (Antilla, 2005). It helps also in addressing public engagement with the issue (Nisbet, 2009). During the climate conferences, the media focused on key climate change indicators and their impacts, including extreme weather events and their effects on regional and global climate. The media is playing an important role in shaping public attitudes toward climate change. There has been an increase in climate change news stories, and this has included coverage of climate change emerging from both nations and global conferences. New media is interested in covering different themes

and volumes such as negotiations, disaster/catastrophe, climate justice, migration and displacement, food security, and health impacts (Painter et al., 2018).

Exposure to information about COP conferences increases climate change awareness, particularly among participants who start out with a low level of awareness (Bakaki & Bernauer 2016). Digital media portrays climate change by considering the power of culture, politics, and society, and constructing coverage, public discourses, and knowledge on climate change. Boykoff and Yulsman (2013) argued that digital media has reshaped climate coverage. According to Corner (2016), digital media could use visuals to disseminate climate issues by focusing on real people, realizing the issues are relevant to the audience, helping in a quick and easy understanding, and localizing climate impacts.

The media has played a fundamental role in informing and updating the public about the climate ever since anthropogenic climate change emerged as a major global issue. Studies have shown that the mass media has been a primary source of climate news for the public. Many studies have explored media coverage of climate change and recognize the importance of COPs for the international climate agenda and as a focal point for climate change coverage, several studies have examined media coverage of individual COPS (Hornsey et al., 2016). Many studies also suggested that media coverage can increase knowledge about climate change and provide general knowledge about the issue positively (Simcock et al., 2014) and influences the motivation to act climate-friendly and supports the willingness and ability to act as well as a general pro-environmental stance and a high internal efficacy (Oschatz et al., 2019). Some studies have explored media coverage of individual developed countries, while others have taken a cross-national approach. These studies illustrated the economic impacts and opportunities of climate change (Grittmann, 2014), the role of media in giving attention to important issues (Gurwitt et al., 2017) and what aspects of the multifaceted conference were actually covered (De Silva-Schmidt et al., 2022).

Theoretical Framework

As the study aims to investigate how digital media frame environmental issues and challenges of climate change during COP27, it adopted framing theory as a theoretical framework. Framing is a communication theory that suggests that the way information is presented, or “framed,” can influence how people perceive and understand it. Framing theory can be applied to analyzing information and news by examining how the language, metaphors, and images used in news coverage can shape the way people perceive and understand events (Kuan et al., 2021). Framing theory is often applied in the fields of politics, public relations and advertising, where the way messages are presented can have a significant impact on their effectiveness. It is also used in journalism, where reporters and editors make decisions about how to frame news stories. Overall, framing theory suggests that the way information is presented can be just as important as the content of that information itself (López-Rabadán, 2021).

Framing theory can be a useful tool for analyzing information and news, as it helps us to understand how the presentation of information can influence the way people perceive and respond to events (Dalhatu & Shehu, 2020). By being aware of the frames that are being used, we can better evaluate the accuracy and relevance of the information we are receiving (Guran & Ozarslan, 2022). Climate change is a complex issue that can be framed in different ways, and framing theory can provide insights into how different frames can influence how people perceive and respond to this issue. framing theory suggests that the way climate change is framed can have a significant impact on how people perceive and respond to this issue (Nisbet, 2009). Effective communication about climate change should consider the diverse perspectives and values of different audiences and use frames that resonate with their concerns and motivations (Schmidt et al., 2013).

One common frame used to discuss climate change is the “global warming” frame, which emphasizes the Earth’s rising temperatures and the potential consequences of this trend, such as sea-level rise, extreme weather events, and ecological disruption (Brulle et al., 2012). This frame can be effective in mobilizing people to take action to reduce greenhouse gas emissions and mitigate the impacts of climate change. However, some people may be skeptical of this frame, particularly if they perceive it as being alarmist or exaggerated (Shehata & Hopmann, 2012). Another frame used to discuss climate change is the “energy transition” frame, which emphasizes the need to shift from fossil fuels to renewable energy sources. This frame can be effective in appealing to people’s desire for energy security, job creation, and technological innovation (Wozniak et al., 2015). A third frame used to discuss climate change is the “climate justice” frame, which emphasizes the

unequal distribution of the costs and benefits of climate change and the need to address this injustice (Painter et al., 2021). This frame can be effective in mobilizing support from marginalized communities and emphasizing the moral imperative of acting on climate change. However, some people may resist this frame if they perceive it as divisive or overly politicized (Rochyadi-Reetz & Wolling, 2022).

Several studies have focused on media framing of climate change, identifying frames as the main overarching theme of the news story. four categories of framing might be adopted: ecological and meteorological, scientific, political-economic, and cultural and society. Many studies adopt a set of frames that includes elements like problem definitions, evaluations, causes, and climate action and problem definitions, evaluations, causes, and climate action (Gunay et al., 2021). This study adopts framing theory to understand how analyzed digital media frame themes and challenges of climate change during COP27 in Egypt.

Questions of Study

This study undertakes a discourse analysis to achieve a comprehensive understanding of how climate change discourse is framed on COP27 website and Instagram account. In this respect, the study answers the following research questions (RQs):

RQ1. What are the main themes and issues that emerge in COP27 digital platforms during the conference?

RQ2. How do the themes and issues reflect the agenda and concerns of the conference?

RQ3. What challenges are covered by the official conference digital media?

RQ4. How do digital media connect themes/frames to challenges facing climate change during COP27?

METHODOLOGY

Discourse Analysis

This approach analyzes how discourses produce and reproduce power structures (Ramanathan & Hoon, 2015). Media discourse refers to the way in which media outlets, such as newspapers, television, and the internet, present and construct meaning about particular topics or issues (Rita et al., 2023). It encompasses the language, images, and other forms of representation used in these media, as well as the ways in which these representations are organized and presented (Barkemeyer et al., 2018). Media discourse can include news articles, television news broadcasts, talk shows, documentaries, and other forms of mediated communication (Ramanathan & Hoon, 2015). To determine the sources of dominance, power, and inequality with special reference to the social, political, and historical context in the media, it is compulsory to single out the type of language used and analyze it within the framework of discourse (Blommaert & Bulcaen, 2000). The discourse approach recognizes the importance of language in shaping our understanding of the world and our interactions within it. Each discourse is thus embedded within its own language, whilst also resting on shared assumptions and contentions about the world (Hugé et al., 2013).

Fairclough (2003) proposes two general forms of discourse analysis: 'Foucauldian', which pays little attention to linguistic features of the text and engages instead with social theoretical issues; and 'critical discourse analysis', which advances a close linguistic analysis of texts. Discourse analysis is based on social scientific approaches, as textual data are studied via qualitative research methods within their social, historical, and geographical context. In this study, discourse refers to 'a shared meaning of a phenomenon' topics of introducing issues of climate change. It recognizes the importance of language in shaping audience's understanding of these issues. Discourse analysis is subject to a diverse array of interpretations for the key components with some illustrative quotes.

Sampling

All public posts or news stories shared on the official COP27 website and Instagram account during the conference period from November 1 to November 30, 2022, had been collected and analyzed (n=119). The posts and news were coded for their main themes using a discourse analysis approach. We identified themes through a process of inductive analysis, which involves reading and categorizing the data to identify common patterns and themes. Each post and news story were coded for the themes that emerged in climate change coverage, including causes, impacts, and solutions.

Table 1. Content type on conference website & Instagram account

No	Type	n	Percentage (%)
1	Text	119	37.1
2	Photo	119	37.1
3	Video	61	19.0
4	Infographic	14	4.3
5	Multimedia	8	2.5
Total		321	100

To ensure reliability, which refers to the consistency of a measure and the accuracy of the instrument, researchers applied the refutational analysis to compare the constant data. The instrument was peer-reviewed by a third researcher to ensure the validity of the tool. A random sample of 20.0% of the posts and news stories were double coded by a fourth researcher. Inter-coder reliability was assessed using Cohen's kappa statistic ($K=0.95$).

Coding

Four general frames regarding climate change were identified from the agenda of COP27 namely: mitigation, adaptation finance, and collaboration. Each frame has been introduced by four sub-frames representing the challenges of climate change. Mitigation sub-frames were global warming, actions to raise ambitions from all parties, creating work programs, and droughts. Adaptation sub-frames were extreme weather (heatwaves, floods, forest fires, and sea level), enhancing global agenda for action, political will, and supporting African communities. Finance sub-frames were transparency and follow-up, finance flow and facilities, progress on delivery of funds, and adequate and predictable finance. Collaboration sub-frames were representation and participation from all stakeholders, adopting a sustainable economic model, collaboration with the private sector and civil society, and climate-friendly solutions.

Authors applied regression analysis to measure the relationship between the study themes, mitigation, adoption, finance and collaboration. Correlation is also applied to test the relationship between these themes to identify which one is more significant.

RESULTS

The results indicate the types of content that have been published on conference platforms, along with an analysis of the themes covered by this content and the challenges facing environmental issues as presented through the content. The results are explained through maps of relationships, nature of relationship between themes and challenges, to uncover extent of the spread of specific topics and their correlation with other topics, as well as extent to which these topics are related to specific challenges that have been discussed.

Content Type on Conference Website & Instagram Account

The results in **Table 1** indicate that the most used types of content across conference platforms were texts and photos with the same percentage (38.1%) followed by video with 19.4%. meanwhile, other types such as infographics and multimedia content represent around 7.0%. This may suggest a failure to utilize the potential of digital platforms in delivering content through diverse multimedia channels that can convey climate issues more clearly and express the conference agenda.

Key Actors in Digital Media Coverage of Conference

Table 2 indicates the key actors in the media coverage of the conference. Organizing committee was in the first rank followed by government officials, the United Nations officials, and environment activists. This indicates that the organizing committee has utilized digital platforms to effectively cover the conference events and present the topics under discussion, without neglecting government officials or United Nations representatives. It also reflects the organizers' interest in civil society organizations and provides them with an opportunity to express their views on the conference's deliberations.

Table 2. Key actors in digital media coverage of conference

No	Actor	n	Percentage (%)
1	Organizing committee	41	34.5
2	Government officials	38	31.9
3	United Nations officials	19	15.9
4	Environment activists	17	14.3
5	Sponsors	4	3.4
Total		119	100

Table 3. Covered issues on conference website & Instagram account

No	Issues	n	Percentage (%)
1	Civil society	43	25
2	Implementation of Glasgow pact	20	11.6
3	Finance	18	10.5
4	Decarbonization	18	10.5
5	Youth and future	17	9.8
6	Solutions	15	8.7
7	Agriculture	13	7.6
8	Science	8	4.7
9	Energy	8	4.7
10	Water	7	4
11	Pledges & commitments to Paris Agreement	5	2.9
Total		172	100

Covered Issues on Conference Website & Instagram Account

The data in **Table 3** indicates that the issue of civil society participation in supporting climate change topics was at the forefront of the issues presented on conference platforms, followed by issues related to the implementation of the Glasgow Agreement, financing, and carbon emissions reduction. There was also a focus on topics concerning youth engagement in initiatives to address climate change and their active role in raising awareness, alongside other topics such as agriculture and climate problem-solving solutions.

Several other issues ranked lower in terms of focus through these platforms, indicating a decrease in the attention given to them, such as issues related to science, water, and energy, despite their importance and inclusion in the conference agenda. However, the discussion or presentation of these topics was not as extensive as with other issues.

Covered Challenges on Conference Website & Instagram Account

Digital media coverage of conference addressed various climate change issues, with a focus on statements made by officials highlighting the importance of confronting the challenges of climate change (**Table 4**).

“Together for implementation, was not just a slogan at COP27, but a rather timely call to move from setting rules, frameworks, and commitments to a clear focus on the tangible implementation of commitments on the ground” (Sameh Shoukry, the Egyptian Minister of Foreign Affairs & COP27 President: Cop27_egypt [Instagram account]).

“In the world we wish for, all eight billion lives should lead a safe and healthy life. Not encumbered by the risk of a climate crisis. Our common goal should be ensuring that no one to be left behind” (the United nations Secretary Antonio Guterres: Cop27_egypt [Instagram account]).

It is evident from the data that the conference’s digital platforms have addressed several challenges discussed during the conference sessions. Regarding the challenges of **mitigation** related to work on the reduction of the earth’s temperature, the first challenge highlighted the necessity of increasing countries’ commitment levels to what was agreed upon in the Paris Conference. Additionally, the challenge of global temperature rise has received significant attention through the platforms.

“Mitigation response was a core pillar at COP27. Reducing the emission of greenhouse gases in the short run will result in important improvement in addressing the climate crises by safeguarding the

Table 4. Covered challenges on conference website & Instagram account

Theme	Issues	n	Percentage (%)
Mitigation	Actions to raise ambitions from all parties	42	51.4
	Global warming	31	38.3
	Create a work program	5	6.4
	Droughts	3	3.9
	Total	81	100
Adaptation	Extreme weather (heatwaves, floods, forest fires, & sea level)	26	48.1
	Enhance global agenda for action	11	20.4
	Supporting African communities	13	24.1
	Political will	4	7.4
	Total	54	100
Finance	Transparency and follow up	8	38.1
	Adequate & predictable finance	5	23.8
	Finance flow and facilities	5	23.8
	Progress on delivery of funds	3	14.3
	Total	21	100
Collaboration	Representation & participation from all stakeholders	26	42.6
	Climate friendly solutions	19	31.2
	Collaboration with the private sector and civil society	10	16.4
	Adopt a sustainable economic model	6	9.8
	Total	61	100

Paris temperature goal and keeping the 1.5 °C target within reach” (Cop27_egypt [Instagram account], video: <https://www.instagram.com/reel/CmMG3VEgrPW?igsh=YjJoeTFoZTBleG9k>).

Regarding the challenges of **adaptation** to find solutions, challenges specifically related to climate change and its impact on floods, wildfires, and rising sea levels were at the forefront of the addressed challenges. Additionally, the challenges associated with building an international agenda to deal with these issues were also highlighted. Other challenges within this context were related to various climate issues in several regions, such as Africa.

“To deliver robust adaption solutions, we must act now and at scale. COP27 promoted transformative adaption implementation and launched its Sharm El-Shaihh Agenda” (Cop27_egypt [Instagram account], video <https://www.instagram.com/reel/CmtouMqjghA?igsh=OTgyNGcwd3NrcWfu>).

The challenges related to **financing** were diverse and included transparency and monitoring concerning international aid and how it is utilized to support countries’ plans and projects in addressing climate change. Additionally, challenges were present regarding the provision of sufficient and predictable adequate funding for countries, as well as the provision of financial facilities for countries in the Global South.

“Finance is the cornerstone for implementing climate actions up ambition” (Cop27_egypt [Instagram account]).

The challenges related to **collaboration** were linked to the importance of representation and participation of all parties and finding collective solutions to climate change issues. Cooperation on climate change issues was emphasized, highlighting the importance of involving civil society organizations and the private sector.

“This gathering must be the moment to re-commit our future and our shared capacity to write a better story for the world. Let us build on our global climate progress. raising, both, our ambitions and the speed of our efforts” (President Joe Biden: Cop27_egypt [Instagram account]).

Relationships Map Among Mitigation, Adaption, Finance, Collaboration, & Challenges

Mitigation map

From **Figure 1**, it may be noticed that the strongest relationship was found between the following: create work program, global warming, and droughts. This indicates that the topics of climate warming and droughts

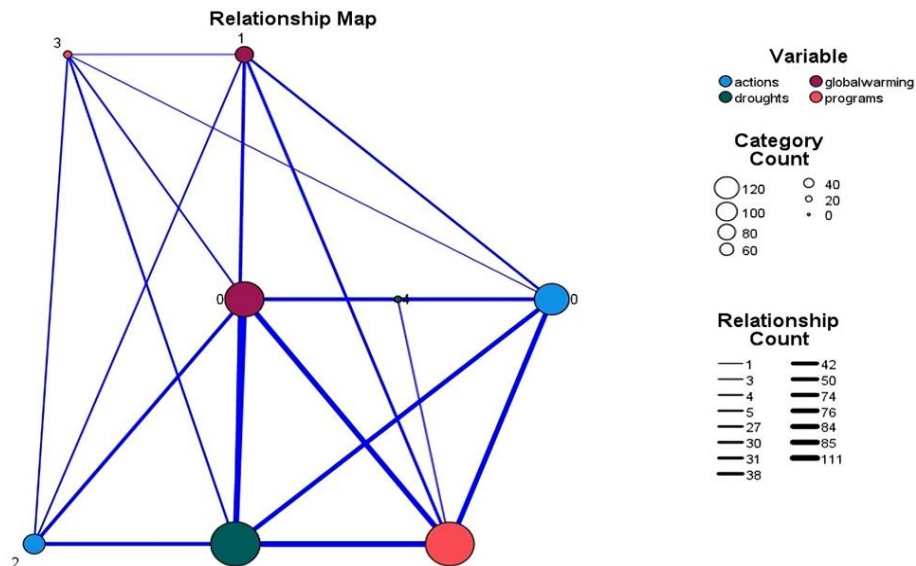


Figure 1. Relationships map between mitigation & challenges (Source: Authors, using IBM® SPSS® v29)

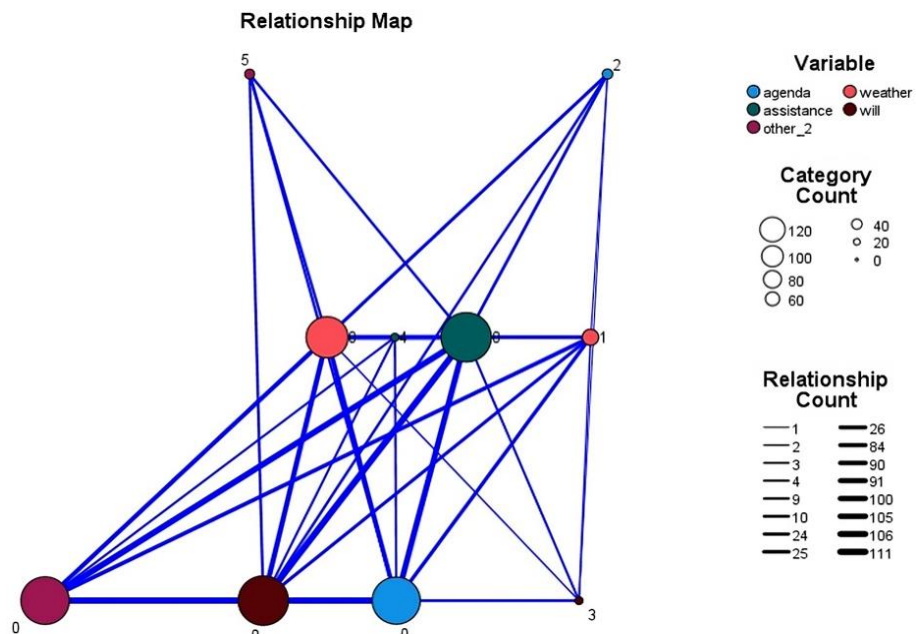


Figure 2. Relationships map between adaption & challenges (Source: Authors, using IBM® SPSS® v29)

are also associated with the presence of innovative programs to solve the challenges. Then the relationship between global warming, creating a work program, and actions to raise ambitions from all parties. This relationship indicates the connection between the topics of temperature increase and the development of innovative programs for solutions with the existence of initiatives to encourage all parties to participate and find solutions.

Adaption map

Figure 2 shows that there is a strong relationship between the supporting Africa challenges and the adaptation challenges such as extreme weather, enhancing global agenda, political will, and assisting communities. This indicates the connection between climate change issues specific to Africa and the challenges raised through the digital platforms of the conference. It aligns with the conference being held in an African country and the focus of its issues on this continent.

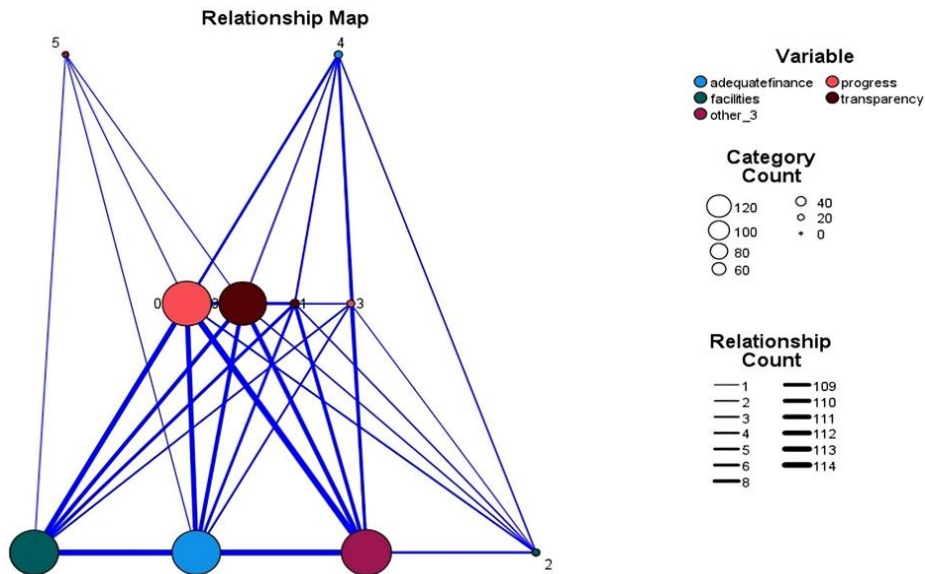


Figure 3. Relationships map between finance & challenges (Source: Authors, using IBM® SPSS® v29)

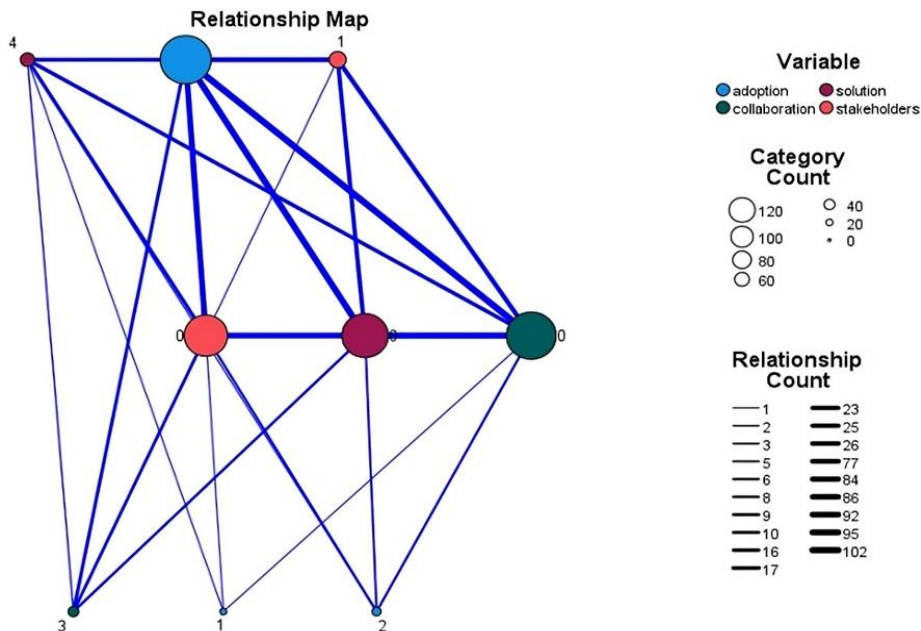


Figure 4. Relationships map between collaboration & challenges (Source: Authors, using IBM® SPSS® v29)

Finance map

Figure 3 shows that all financing issues such as transparency and follow-up, finance flow and facilities, progress on delivery of funds, and adequate and predictable finance are strongly interconnected. This provides an indicator of the importance of financial challenges and support in the field of climate change, which is one of the topics discussed at the conference.

Collaboration map

From Figure 4, it may be noticed that the strongest relationship was found between the adoption a sustainable economic model and collaboration with the private sector and civil society. This provides an indicator of the importance of collaboration between all countries to find solutions for the climate change issues and that was reflected in the conference platforms.

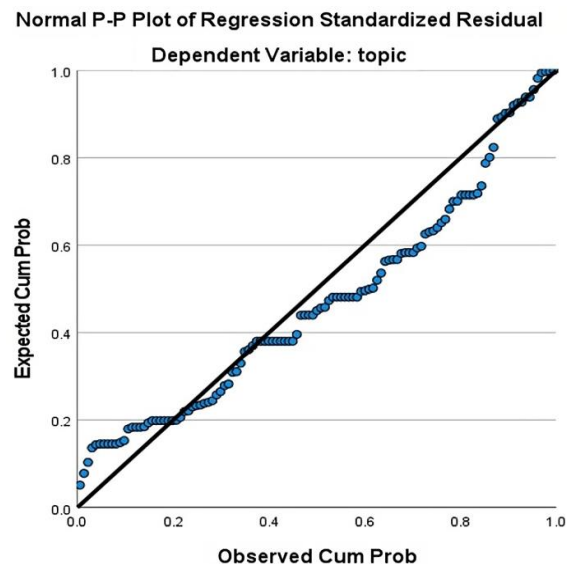


Figure 5. Regression plot between themes & challenges (Source: Authors, using IBM® SPSS® v29)

Overall Challenges Map & Overall Challenges With Themes Map

The maps indicate that the finance challenge was a common factor among all the challenges related to climate change issues discussed in the published content on the conference platforms (**Figure 4**). It was also a common factor with all the topics covered during the research period, which confirms the importance of the financing challenge in the discussions held during the conference.

Figure 5 explains the regression between themes and challenges. The results indicate that financing issues were a common factor among all the challenges related to climate change issues discussed in the published content on the conference platforms. It was also a common factor with all the topics covered during the research period, which confirms the importance of the financing challenge in the discussions held during the conference. This is reflected in the media coverage of the conference platforms.

Figure 6 explains the regression between the study themes, mitigation, adoption, finance and collaboration ($R=0.995$), which indicates the strong relationship among the four themes. By using the correlation, we found that the strongest relationship was between collaboration and finance (0.940), followed by adoption and finance (0.709), and then between mitigation and adoption (0.580). These results indicate the awareness of digital platform administrators about the importance of financing, cooperation between countries and international institutions, and the deployment of innovations and technologies to mitigate the negative effects of climate change. The digital platforms reflected the discussions in the conference about the importance of financing and supporting many countries in Africa, Asia, and Latin America to adapt new initiatives and technologies to reduce climate-damaging activities

DISCUSSION

Today, climate change is deemed one of the most critical environmental challenges faced worldwide (Mfarrej, 2019). Climate change disrupts the body's natural temperature regulation, impacting human health significantly. Elevated temperatures, exacerbated by higher humidity, lead to increased risks of acute and chronic health issues (Neira et al., 2023). Therefore, COP27 conference is considered one of the solutions to confront those challenges. However, efforts are unlikely to be effective without engaging the audience in these challenges. The results of the study indicate the conference's efforts in engaging the audience in the issues and discussing solutions, as well as the contribution of governmental and civil entities in this regard.

The conference's digital platforms were utilized to reflect a frame drawn by the organizers to emphasize that the conference presents an **opportunity** for international cooperation in order to make decisions and solve the challenges faced by global South countries and to find solutions, particularly in terms of financing and technical support.

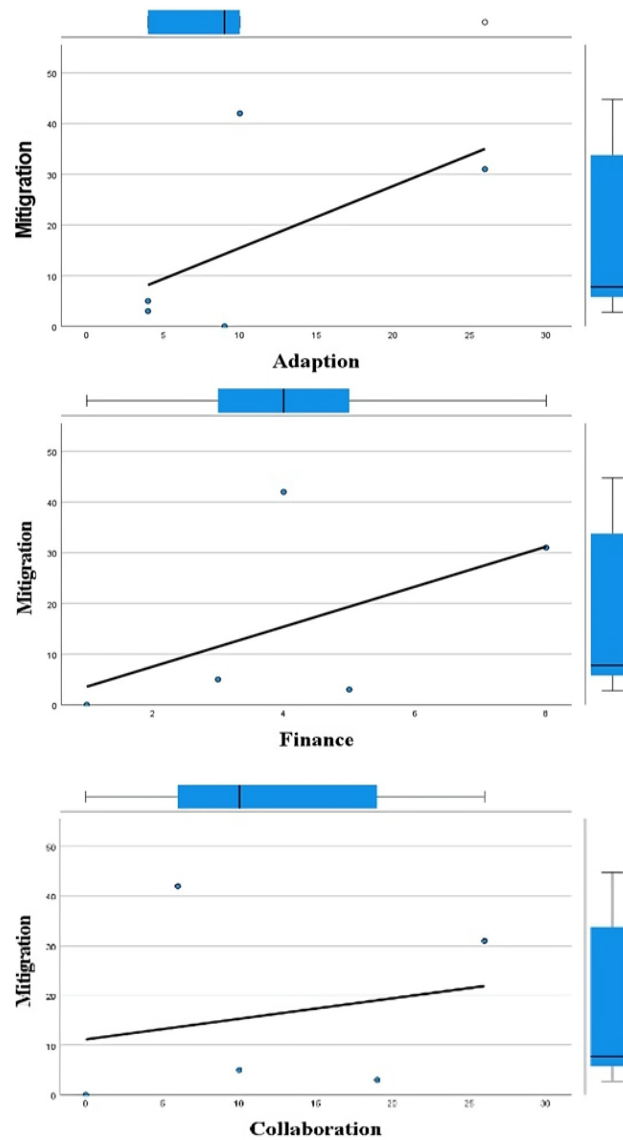


Figure 6. Regression between themes (Source: Authors, using IBM® SPSS® v29)

There was another framework that was utilized, highlighting the **urgency of addressing climate issues and taking immediate actions** to emphasize the need to find solutions and reach agreements among stakeholders regarding joint initiatives to tackle all these issues, whether related to rising temperatures, reducing carbon emissions, or others. Phrases like “time is running out” and “act now” were used to encourage stakeholders to act. The results indicate that the digital platforms of COP27 conference were concerned with presenting the issues and topics discussed during the conference sessions. These platforms focused on publishing news and information on several issues that specifically concern Africa. The conference provided an opportunity for African countries to showcase their climate change and environmental problems.

Support and financial funding issues were at the forefront of these topics, as they were interconnected with all the issues and challenges presented through these platforms. This was done through multiple frames represented **by transparency, adequate and finance, and ease of support flow**. The **African affairs** were present in the frames to emphasize the importance of providing rapid support to Africa to overcome climate change challenges. One of the clear frames through which the conference news and information were presented was the framework of **cooperation and participation**, this framework aimed to emphasize the importance of cooperation between countries and organizations, as well as the crucial role of civil society organizations in climate protection, addressing its challenges, and raising awareness about proper actions and behaviors to address these issues. The youth involvement frame also was used to support youth participation in future climate challenge solutions.

Ford (2020) indicated that conversations and discussions facilitated by digital media can enhance awareness of environmental issues, reduce knowledge gaps between communities or demographics, and also promote responsiveness to required roles. In another incident, Zummo et al. (2020) mentioned that one of the factors that increases the importance of employing digital media in addressing environmental and climate change issues is the youth's inclination toward using them. Consequently, it becomes an opportunity to engage youth in dialogue and harness their efforts in supporting various environmental initiatives. Chen et al (2023) pointed out the ability of digital media to motivate users to engage and advocate for political and societal actions that preserve the climate. He also highlighted their use in framing environmental issues, whether through media, institutions, or individuals. Digital media, as Brulle et al. (2012); Bolsen et al. (2019) indicated, play a role in shaping public opinion and ensuring the public's exposure to accurate information through official and scientific platforms, mobilizing them to be more aware of the risks of not responding to the local and international efforts. Moreover, they articulate the issues faced by countries most vulnerable to the negative impacts of climate change and provide a space for civil organizations to showcase their efforts and initiatives.

The results are consistent with Schäfer and Painter (2020) who confirmed that social media platforms have expanded the avenues for public discourse, fundamentally transforming how prominent issues like climate change are communicated. Which also related to Pearce et al. (2018) who emphasized the necessity for research to move beyond merely conveying scientific information to delve into understanding how the public perceives climate change and its evolving significance in social dynamics.

CONCLUSIONS

The convening of COP27 in Egypt provided an opportunity for African countries to express their concerns regarding climate change. The digital platforms of the conference were utilized to disseminate news and information that reflect the global issues and challenges in this regard. These platforms focused on many frames such as finance, cooperation, and finding solutions. The platforms emphasize the urgency of topics and their linkage to various challenges and opportunities that contribute to supporting the role of governments, organizations, and individuals in playing a crucial part in finding solutions.

Since this study is limited to COP27, which was held in Egypt, and is limited to analyzing the digital platforms of the conference, future studies can explore other approaches and research topics. The researchers suggest placing more emphasis on the role of scientific communication in presenting environmental and climate change topics to the public and assessing its ability to express the challenges facing the environment. Research areas in scientific communication are diverse, including environmental topics that need to be presented in a simple way that resonates with the public's lives, challenges, and future. On the other hand, they require various presenting ways. As COP28 was held in the United Arab Emirates, within the same region of the Middle East, it necessitates studying and comparing the media coverage of climate change issues during both editions, and the role of communication in expressing challenges is considered an important area for future research to discover the sentiments and framing in the climate discourse.

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Data availability: Data generated or analyzed during this study are available from the authors on request.

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