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Report on Risk Perception Survey in Egypt

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Report on Risk Perception Survey in Egypt

Project:
Support to the activities to be developed in Egypt in the framework of the UNESCO IOC DG ECHO project **COASTWAVE**: "*Strengthening the resilience of coastal communities in the North East Atlantic, Mediterranean region to the impact of tsunamis and other sea level-related coastal hazards*"

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The work proposed in this document is intended to improve tsunami preparedness but does not guarantee the safety of people. The authors assume no responsibility for damage to persons or property caused by a tsunami.

The risk perception survey has been implemented in Alexandria - Egypt by NIOF with the support of the Governorate of Alexandria.

The funding for the survey was provided by the UNESCO IOC DG ECHO project **COASTWAVE**: "*Strengthening the resilience of coastal communities in the North East Atlantic, Mediterranean region to the impact of tsunamis and other sea level-related coastal hazards*"

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Cover photos (Source: NIOF):
On-site sessions to support the completion of the questionnaire on risk perception on tsunami and other sea level related risks in the high schools and tourism establishments of Alexandria city.

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Acronyms

IDSL: Inexpensive Device for Sea Level devices

NEAM: North-eastern Atlantic, Mediterranean and the connected seas

NEAMTWS: NEAM Tsunami Early Warning and Mitigation System

NIOF: National Institute of Oceanography and Fisheries

NTRB: National Tsunami Ready Board

SOP: Standard Operation Procedures

TRLC: Tsunami Ready Local Committee

TRRP: Tsunami Ready Recognition Programme

UNESCO-IOC: Intergovernmental Oceanographic Commission of UNESCO

1. Project background

The North East Atlantic and Mediterranean region is prone to tsunamis and other sea level-related coastal hazards. These hazards pose a significant threat to the coastal communities in the region, which are vulnerable due to their proximity to the sea. Tsunamis and other sea level-related coastal hazards have been a concern for many years, with devastating effects on coastal communities. In recent years, there has been an increase in the frequency and intensity of these hazards due to climate change. The North East Atlantic and Mediterranean region is particularly vulnerable due to its high population density, urbanization, and economic activities along the coast. Egypt is one of the countries in this region that is at risk of tsunamis and other sea level-related coastal hazards. The country has a long coastline along the Mediterranean Sea, which makes it vulnerable to these hazards. In addition, Egypt has experienced several earthquakes in recent years, which have increased concerns about potential tsunamis.

For this reason, and in line with the UNESCO-IOC vision on tsunami preparedness, prevention, response and recovery, NIOF is partner in this project, globally coordinated by IOC-UNESCO, funded by DG ECHO: Strengthening the Resilience of Coastal Communities in the North-East Atlantic and Mediterranean Region to the Impact of Tsunamis and other Coastal Hazards Related to Sea Levels, short named CoastWave project. The role of NIOF is to coordinate and develop the activities to be developed in Egypt, as well as to support the coordination and development of the global activities of the project in the NEAM region, which includes six other countries of the region that constitute the study area.

The Risk Perception Survey in Egypt aims to assess the risk perception and awareness of coastal communities in Egypt regarding tsunamis and other sea level-related coastal hazards. The project will also identify gaps in knowledge and understanding among these communities about these hazards; strengthen the resilience of these communities by assessing their risk perception and awareness of these hazards.

The Risk Perception Survey in Egypt is essential for several reasons. Firstly, it will provide valuable information on the risk perception and awareness of coastal communities regarding tsunamis and other sea level-related coastal hazards. This information will help policymakers develop effective strategies for disaster risk reduction. Secondly, the project will identify gaps in knowledge among these communities about these hazards. This information will be used to develop educational programs that will increase awareness among community members about how they can prepare for these events. Thirdly, the project will contribute to strengthening the resilience of coastal communities in Egypt to the impact of tsunamis and other sea level-related coastal hazards. By assessing their risk perception and awareness, the project will provide valuable information that can be used to develop effective disaster risk reduction strategies. Ultimately, this project will help protect the lives and livelihoods of coastal communities in Egypt.

Several activities have been developed in Alexandria since the beginning of the process, among others the development and mapping of tsunami hazard zones and tsunami evacuation maps, easily understandable and approved by local community members and authorities. Also, several municipal outreach and awareness activities have been developed, including the implementation of Tsunami Ready committee in Alexandria to address national, provincial, and municipal tsunami SOPs. In addition, already within the framework of the present CoastWAVE project, support has been provided to improve the Egyptian National Tsunami Warning System, by delivering spare parts for the existing Inexpensive Device for Sea Level devices (IDSL). Other activities related to the TRRP indicators have also been developed and others are ongoing.

As part of these activities, this document constitutes the second deliverable of the project (D2), which addresses the development and implementation of a risk perception survey on tsunamis, storm surges and sea level rise.

The following sections present the description of the work carried out and the results obtained for Alexandria (Egypt).

2. Introduction

The North-East Atlantic and Mediterranean (NEAM) region is highly vulnerable to sea level related hazards such as tsunamis, storm surges, and sea level rise (SLR). These hazards can cause significant damage to coastal communities, infrastructure, and ecosystems. The perception of these hazards is crucial for effective risk reduction and disaster management. Understanding how people perceive these hazards can help identify gaps in knowledge, attitudes, and behaviors that may hinder preparedness efforts. This paper aims to explore the perception of tsunami and other sea level related hazards in the NEAM region, including factors that influence perception and potential strategies for improving risk communication and preparedness.

Within the framework of the CoastWAVE project, it has been developed a survey addressing the perception of coastal risks and preparedness for tsunamis and other sea level related risks, such as storm surges and sea level rise. The results of the survey will provide a better understanding on how coastal populations perceive these natural hazards and risks.

The CoastWAVE project is a comprehensive framework designed to address the challenges of coastal hazards. The framework is based on the principles of adaptive management, which involves continuous monitoring and evaluation of the coastal hazards to inform decision-making. The CoastWAVE project also emphasizes community engagement and collaboration with stakeholders to ensure that local knowledge and perspectives are incorporated into the management process. This introduction provides an overview of the CoastWAVE project's objectives, approach, and key principles, highlighting its significance in addressing the complex issues facing coastal communities. CoastWAVE project will assess the risk perception and awareness of coastal communities in Egypt regarding tsunamis and other sea level-related coastal hazards. The project will also identify gaps in knowledge and understanding among these communities about these hazards.

3. Survey methodology

A survey on coastal hazard perception and preparedness for tsunamis, storm surges and sea level rise is being conducted by the Intergovernmental Oceanographic Commission (IOC) as part of the work of the Intergovernmental Coordinating Group on Tsunami Early Warning and Mitigation in the Northeast Atlantic and in Mediterranean and related seas, as well as within the framework of the implementation of the IOC "CoastWAVE" project funded by the European Commission's Directorate-General for European Civil Protection and Humanitarian Aid, this survey includes selected Member States and seeks to better understand how they perceive coastal populations to these hazards and natural hazards, and develop recommendations to enhance strategies and products related to risk communication in the region. This survey aims to improve the effectiveness of early warning systems related to sea level rise and to mitigate its effects, as well as to improve preparedness in the Mediterranean region in order to save human lives and reduce losses and damages that may occur in the event of a natural disaster of this kind.

The survey methodology involved both quantitative and qualitative data collection techniques. The survey questionnaire was designed to collect data on the risk perception of coastal communities in the North East Atlantic, Mediterranean region towards tsunamis and other sea level-related coastal hazards. The questionnaire was developed based on a literature review and expert consultation to ensure that it captured all relevant aspects of risk perception. The survey was administered using an online platform, which allowed for easy distribution and collection of responses. The questionnaire was distributed to a sample of individuals living in coastal communities in the North East Atlantic, Mediterranean region (Egypt, Greece, Turkey, Italy, Spain, Morocco, France, Norway and Portugal).

The quantitative data collected through the survey questionnaire were analyzed using descriptive statistics such as frequencies, percentages, means, and standard deviations. The qualitative data collected through open-ended questions were analyzed using content analysis to identify themes and patterns in participants' responses. To ensure the validity and reliability of the survey results, several measures were taken. These included pre-testing the questionnaire with a small sample of individuals before administering it to the

larger sample, ensuring anonymity and confidentiality for participants, and using established scales to measure risk perception. Overall, the survey methodology used in this study provided a comprehensive understanding of coastal communities' risk perception towards tsunamis and other sea level-related coastal hazards in the North East Atlantic, Mediterranean region. The results can be used to inform policy decisions aimed at strengthening community resilience to these hazards.

Accordingly, a survey has been developed considering different sectors, which includes the adaptation of some sections to the different target groups. Target groups for the survey include:

- Educational sector (Schools), both for students over 14 years of age and for teachers and other personnel associated to educational authorities.
- Tourism sector (hotels, restaurants, Cafes, etc.)
- General public.

The survey consists of a questionnaire with 39 multiple-choice questions for the emergency sector target group and 35 for the other groups. It is divided into five main sections, as follows:

i. Personal data
ii. Awareness Knowledge
iii. Exposure and sense of exposure
iv. Assessment, Preparedness, and Response
v. Governance

The questionnaire was published on the Alchemer web platform to facilitate its dissemination, completion, and organization of the results and translated to Arabic, English, French, Greek, Spanish and Turkish.

The questionnaire front page is attached both in English and Arabic as an annex to this document. For more information on the description of the different sections, please refer to the complete UNESCO-IOC Tsunami Resilience Section project report.

استبيان الدراسة الاستقصائية بشأن تصور المخاطر المتعلقة بمستوى سطح البحر

اللجنة الدولية الحكومية لعلوم المحيطات

تجري اللجنة الدولية الحكومية لعلوم المحيطات دراسة استقصائية بشأن تصور المخاطر الساحلية والتأهب لأمواج التسونامي وغرام العواصف وارتفاع مستوى سطح البحر، وذلك في إطار العمل الذي يضطلع به فريق التنسيق الدولي الحكومي المعني بنظام الإنذار المبكر بأمواج التسونامي والتخفيف من آثارها في المنطقة الشمالية الشرقية من المحيط الأطلسي وفي البحر الأبيض المتوسط والبحار المتصلة به، وكذلك في إطار تنفيذ مشروع "CoastWAVE" التابع للجنة الدولية الحكومية لعلوم المحيطات الذي تموله المديرية العامة للعمليات الأوروبية للحماية المدنية والمساعدة الإنسانية التابعة للمفوضية الأوروبية، وتشمل هذه الدراسة الاستقصائية دولاً أعضاء مختارة وتسعى إلى الوقوف بصورة أفضل على كيفية إدراك سكان المناطق الساحلية لهذه الأخطار والمخاطر الطبيعية، ووضع توصيات لتعزيز الاستراتيجيات والمنتجات المتعلقة بالإبلاغ عن المخاطر في المنطقة.

وترمي هذه الدراسة الاستقصائية إلى الارتقاء بفعالية نُظم الإنذار المبكر المتعلقة بارتفاع مستوى سطح البحر والتخفيف من آثاره، فضلاً عن تحسين حالة التأهب في منطقة البحر الأبيض المتوسط من أجل إنقاذ الأرواح البشرية والحدّ من الخسائر والأضرار التي قد تحدث في حال وقوع كارثة طبيعية من هذا النوع.

ملاحظة: تُحاط جميع المعلومات المقدَّمة في إطار هذه الدراسة الاستقصائية بالسرية والكتمان فيما يخص هوية مقدميها. ويستغرق الردّ على هذا الاستبيان زهاء 15 دقيقة. ولكم منّا جزيل الشكر لمساهمتكم.

هذا الاستبيان موجَّه إلى الأشخاص في قطاع التعليم (المعلمون والطلاب وغيرهم) باستثناء الأشخاص الذين تقل أعمارهم عن 14 عاماً، والعاملين في قطاع السياحة (أصحاب المطاعم والحانات والمتاجر والفنادق، والعاملون في هذه المجالات، والمرشدون السياحيون، وما إلى ذلك)، والجهات القائمة على التصدي لحالات الطوارئ (الإطفائية والشرطة وخفر السواحل ووكالات الحماية المدنية، وما إلى ذلك) والجمهور العام.

تمت مراجعة الاستبيان من طرف اللجنة الدولية الحكومية لعلوم المحيطات لليونسكو، المديرية العامة للعمليات الأوربية للحماية المدنية و المساعدة الإنسانية للمفوضية الأوروبية و شركاء مشروع الCoastwave.

Fig. (1): The Alchemer platform of the first screen of the Arabic questionnaire on the perception of tsunami risk and other sea level related hazards.

4. Survey implementation in Alexandria

The Risk Perception Survey Questionnaire is an essential tool in assessing the level of awareness and preparedness of coastal communities in Alexandria, Egypt, to the impact of tsunamis and other sea level-related coastal hazards. The successful implementation of this survey requires a well-planned approach that includes training, fieldwork, data processing, and response rates. Training is a critical component of the survey implementation process. It is essential to ensure that all surveyors are adequately trained on the questionnaire's content and administration procedures. This will help to minimize errors during data collection and ensure consistency in responses across different surveyors. Fieldwork is another critical aspect of the survey implementation process. The success of the survey largely depends on how well it is administered in the field. Surveyors should be equipped with all necessary tools such as questionnaires, pens, and clipboards to ensure smooth data collection. Additionally, they should be able to communicate effectively with respondents to obtain accurate information. Data processing is another crucial step in implementing the Risk Perception Survey Questionnaire. All collected data must be entered into a database for analysis. This process involves cleaning and coding data before analysis can take place. It is essential to ensure that all data are accurate and complete before proceeding with analysis. Response rates are also an important consideration when

implementing the Risk Perception Survey Questionnaire. Low response rates can significantly affect the validity of results obtained from the survey. Therefore, it is essential to develop strategies that encourage respondents to participate in the survey such as providing incentives or using multiple modes of communication.

The results will help inform decision-makers on how best to allocate resources for disaster preparedness and response efforts. Finally, it is essential to communicate the survey findings back to the community through various channels such as town hall meetings or social media platforms.

This feedback loop will help build trust between communities and decision-makers while also empowering communities to take ownership of their own disaster preparedness efforts. In conclusion, implementing the risk perception survey questionnaire is an essential step towards strengthening coastal communities' resilience in Alexandria, Egypt. It provides valuable insights into how people perceive risks related to tsunamis and other sea level-related coastal hazards while also informing decision-makers on how best to allocate resources for disaster preparedness and response efforts. By following these steps carefully, we can strengthen coastal communities' resilience in Alexandria - Egypt against tsunamis and other sea level-related coastal hazards.

5. Results

5.1. Personnel information

A total of 212 responses were obtained in Alexandria – Egypt under the survey done targeting the educational and tourism sectors. The majority of the respondents were females (53.6%) while the males participated were about (42.5%) (Fig. 2). The age group that participated more was 14 -17 years old (School students) representing about (48.31%) followed by two middle age groups of both (18-24 years old) and (25 – 34 years old) of 19.3% and 16.9% respectively (Fig. 3).

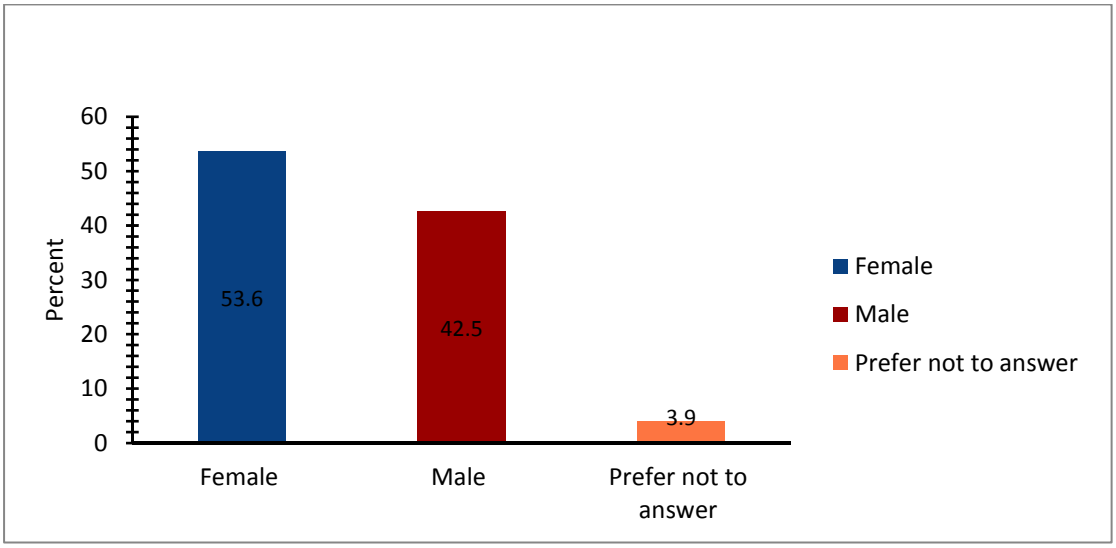


Fig.(2): Gender percent's of the respondents.

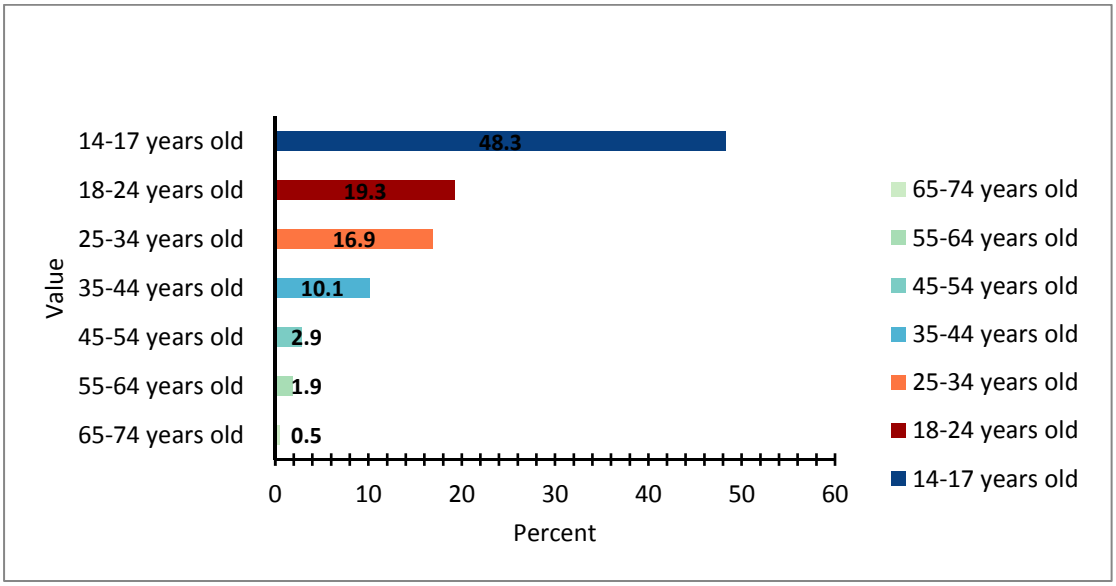


Fig.(3): Age characteristics of the respondents.

Figure (4) represents the level of education of the respondents varying from primary schools to the university level. The majority of the survey participants was from the university sector of about (41.5%) of the total responses; followed by the secondary school level of about (35.6%) then the high school representing about (11.2%) of the total responses (Fig. 4). This reflects the domination of the educational sector representing about (76.3%) compared to the tourism sector that represents only (10.6%) (Fig. 5).

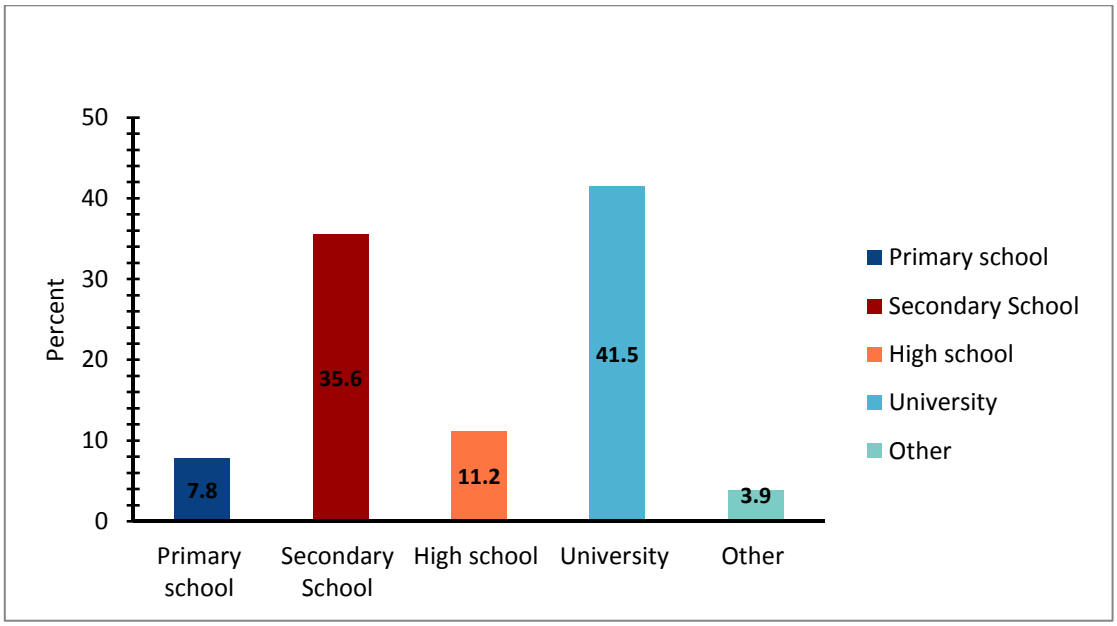


Fig.(4): Education level of the respondents.

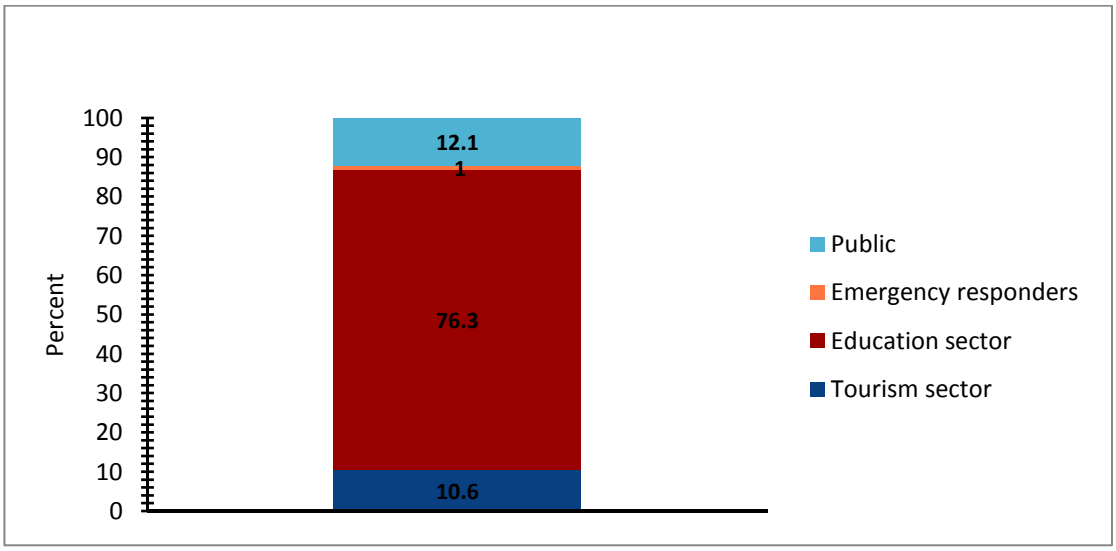
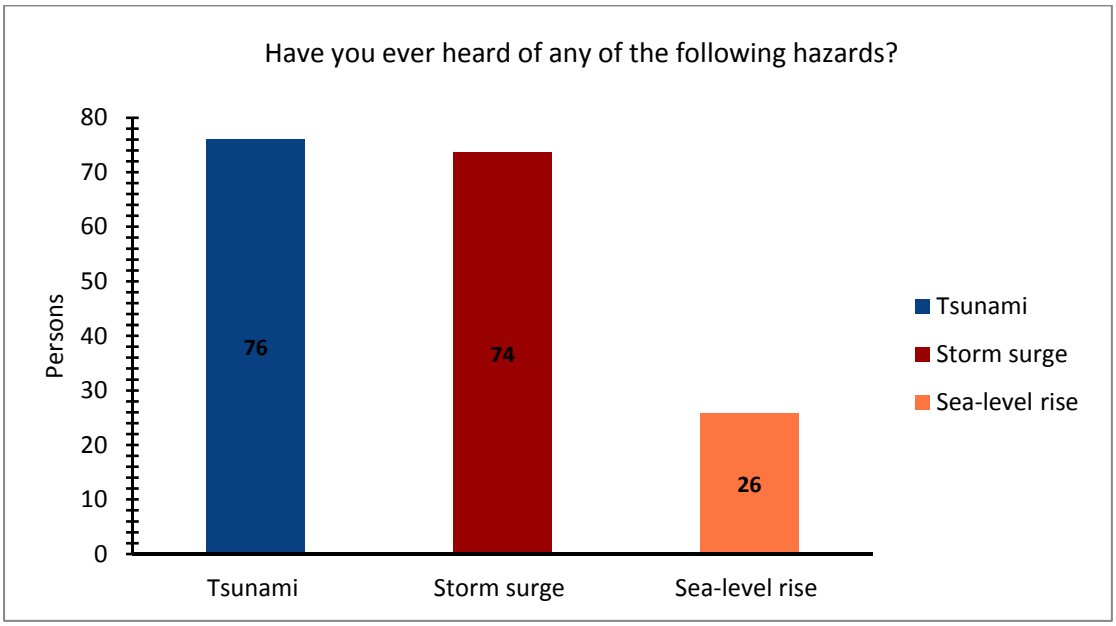


Fig.(5): Target groups of the respondents.

5.2. Awareness and knowledge

The awareness/knowledge section aims to explore the level of knowledge of the respondents about sea level related risks in the municipality, so that adequate countermeasures can be targeted. Overall, it is analyzed whether the population has ever heard of the existing hazards, whether they have had any experience, what may be the natural signs that may warn about the risk, the causes and probabilities behind them, as well as the damages they may cause and the measures that can be taken or whether they are aware of the measures taken so far by the municipality.



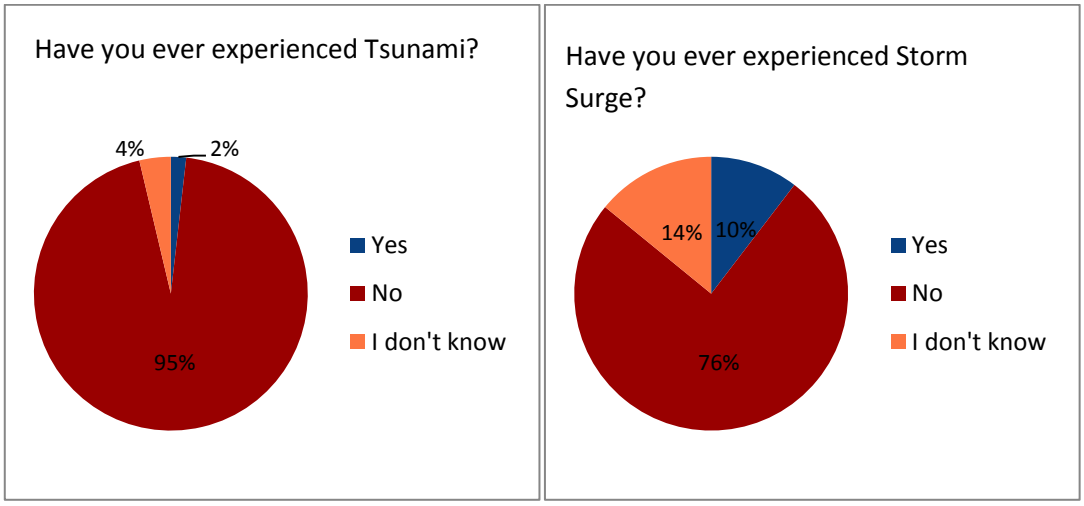


Fig.(6): Community respondents' familiarity with the natural hazards addressed and their experience of tsunami and storm surge

The community answering the survey was aware more about tsunami and storm surges (76 and 74%) they know more about their causes and hazards while there knowledge about the sea level rise was less (26). They addressed their experience of tsunami and storm surge their responses was realistic toward tsunami (95%) as they have not ever experienced tsunami before while for storm surges (76%) said that they have not experience it while is not realistic as Alexandria suffers from storm surges every winter (Fig. 6).

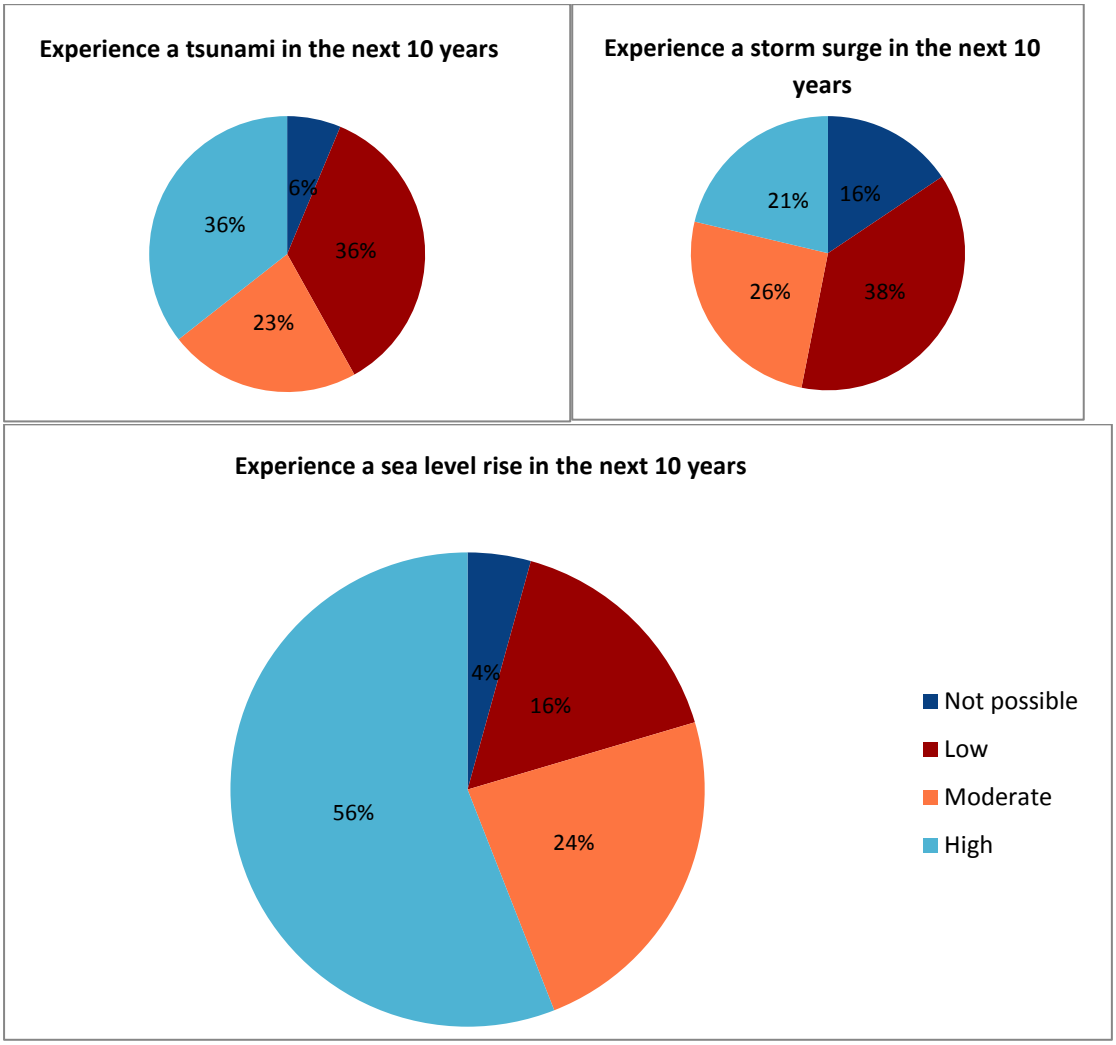


Fig.(7):Perception of the probability of occurrence of a tsunami event, storm surge and sea level rise in the Mediterranean region in the next 10 years.

The Perception of the probability of occurrence of a tsunami event in the Mediterranean region in the next 10 years varied 36% of the participants see that there will be a high property of tsunami to happen while the same percentage see there is a low property to occur. For the storm surges the results was unrealistic as 38% aid that there will be a low property or storm surges in the next 10 years. On the other hand, the sea level rise results reflects the worries from this event by high expectation of the problem to impact the Mediterranean region (Fig.7)

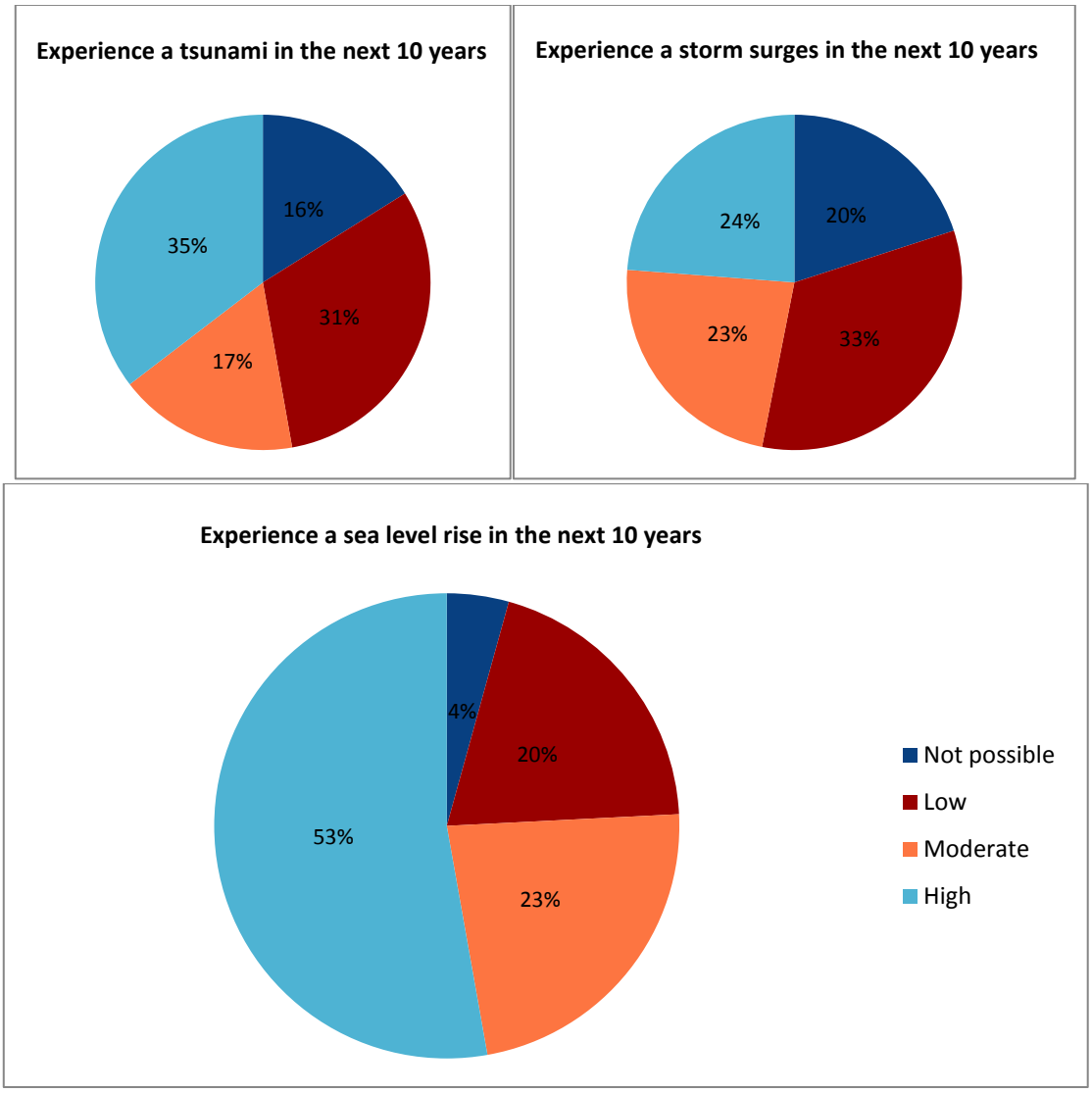


Fig.(8):Perception of the probability of occurrence of a tsunami event, storm surge and sea level rise in Alexandria city in the next 10 years.

Figure 8 reflects the Perception of the probability of occurrence of a tsunami event, storm surge and sea level rise in Alexandria city in the next 10 years. The sea level rise was the highest by (53%) followed by Tsunami by (35%) and (24%) for storm surges. The impacts (loss of lives and property damages) of Tsunami- Storm surge -Sea-level rise in coastal regions of the North-eastern Atlantic and Mediterranean was varied the highest was for tsunami (74%) followed by sea level rise (51%) and storm surges (31%) (Fig. 9). These results come very close to the impacts (loss of lives and property damages) of Tsunami- Storm surge -Sea-level rise in Alexandria city that gives (78%) for tsunami, (55%) for sea level rise and (33%) for storm surges (Fig. 10).

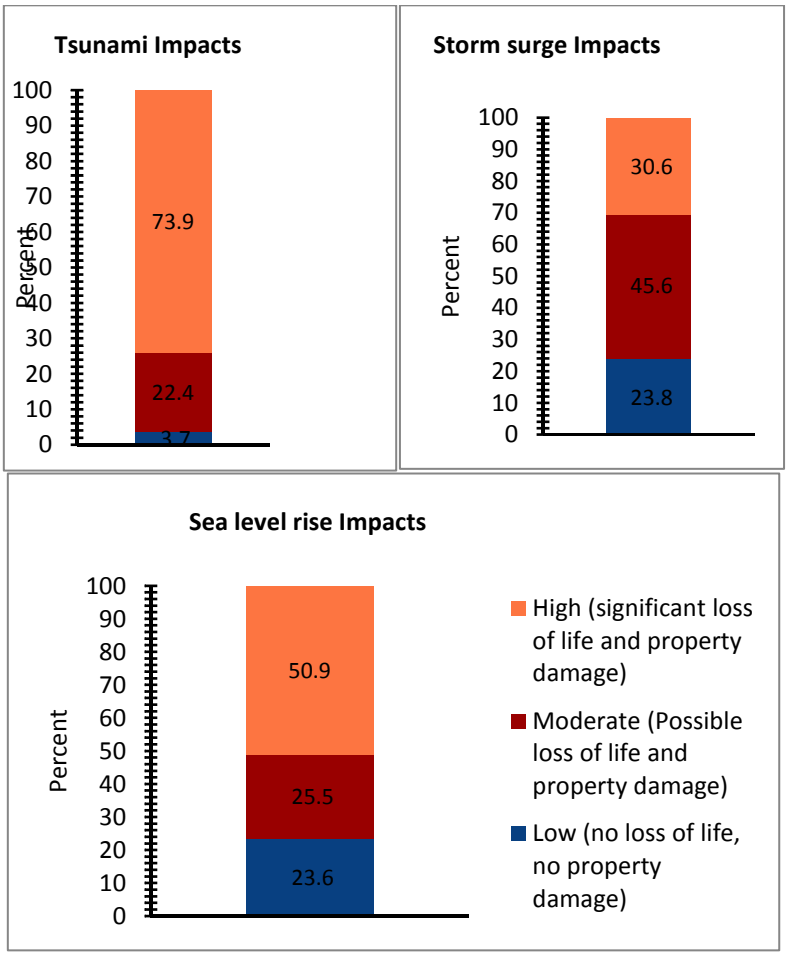


Fig.(9):What do you think could be the impacts (loss of lives and property damages) of Tsunami- Storm surge -Sea-level rise in coastal regions of the North-eastern Atlantic and Mediterranean?

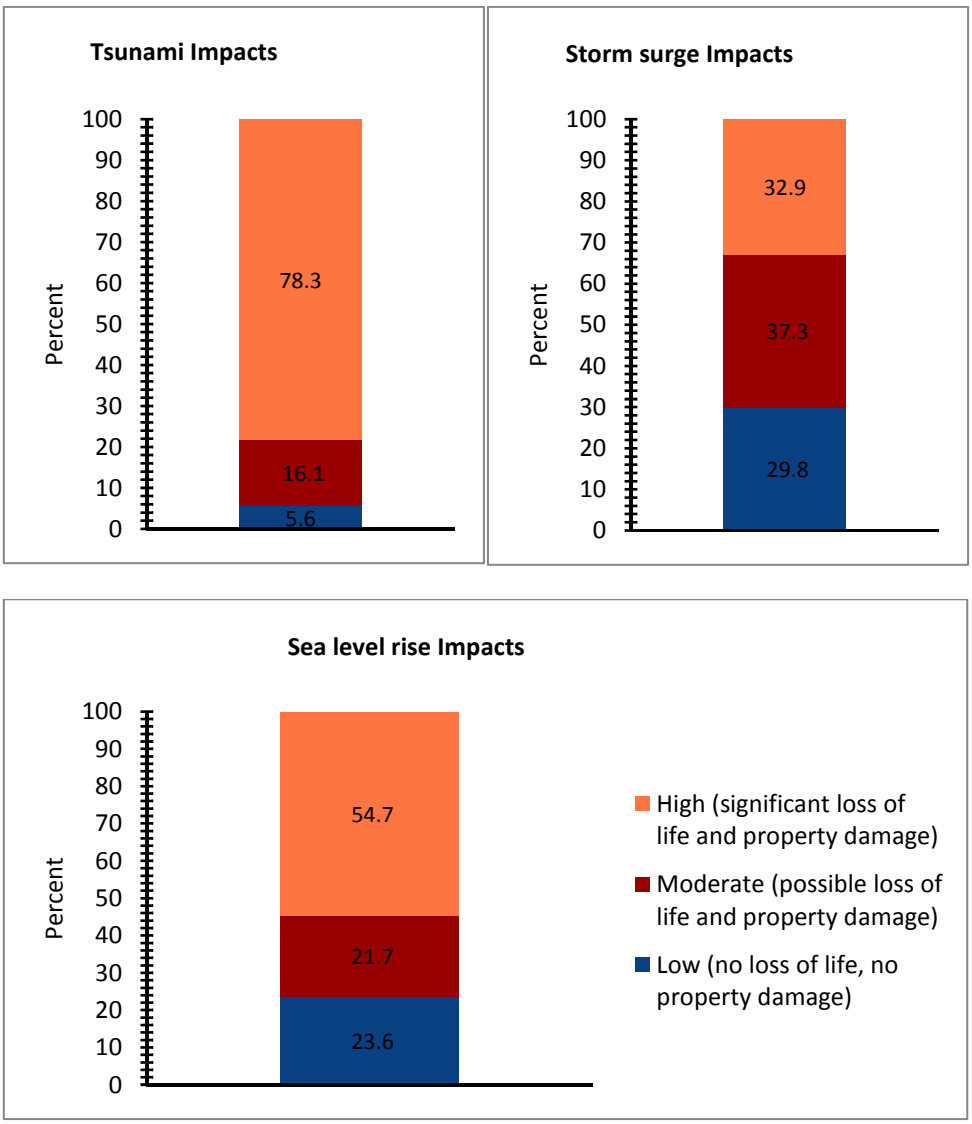


Fig.(10):What do you think could be the impacts (loss of lives and property damages) of Tsunami- Storm surge -Sea-level rise in Alexandria city?

The tsunami height perceived by respondents in the NEAM region show that (51%) expected that the tsunami wave height will be more than 5m; and time of arrival in the municipality of Alexandria will be more than 30 min (Fig.11).

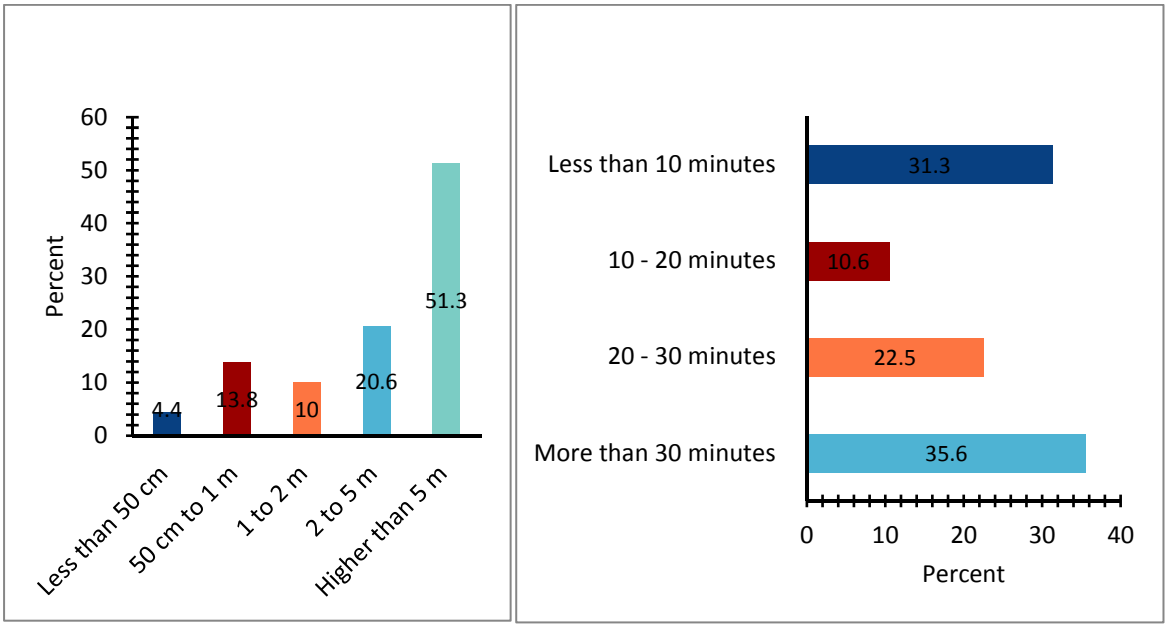


Fig.(11):Tsunami height perceived by respondents in the NEAM region (left) and time of arrival in the municipality of Alexandria (right).

The perception of interviewees on the capacities of the municipality to alert and inform the local population in the event of an earthquake (41%), tsunami (42.5%), storm surge (40%) and sea level rise (40%) of not been able to give alert (Fig.12). while asking If your municipality displays evacuation signs to indicate the best evacuation routes to take and or what to do in case of tsunami and storm surge. The results show that for both tsunami and storm surges there were no signs displayed for this issue in Alexandria till the date of the survey (Fig. 13). But this is will be one of the main outputs of the coastwave project implementation in Alexandria.

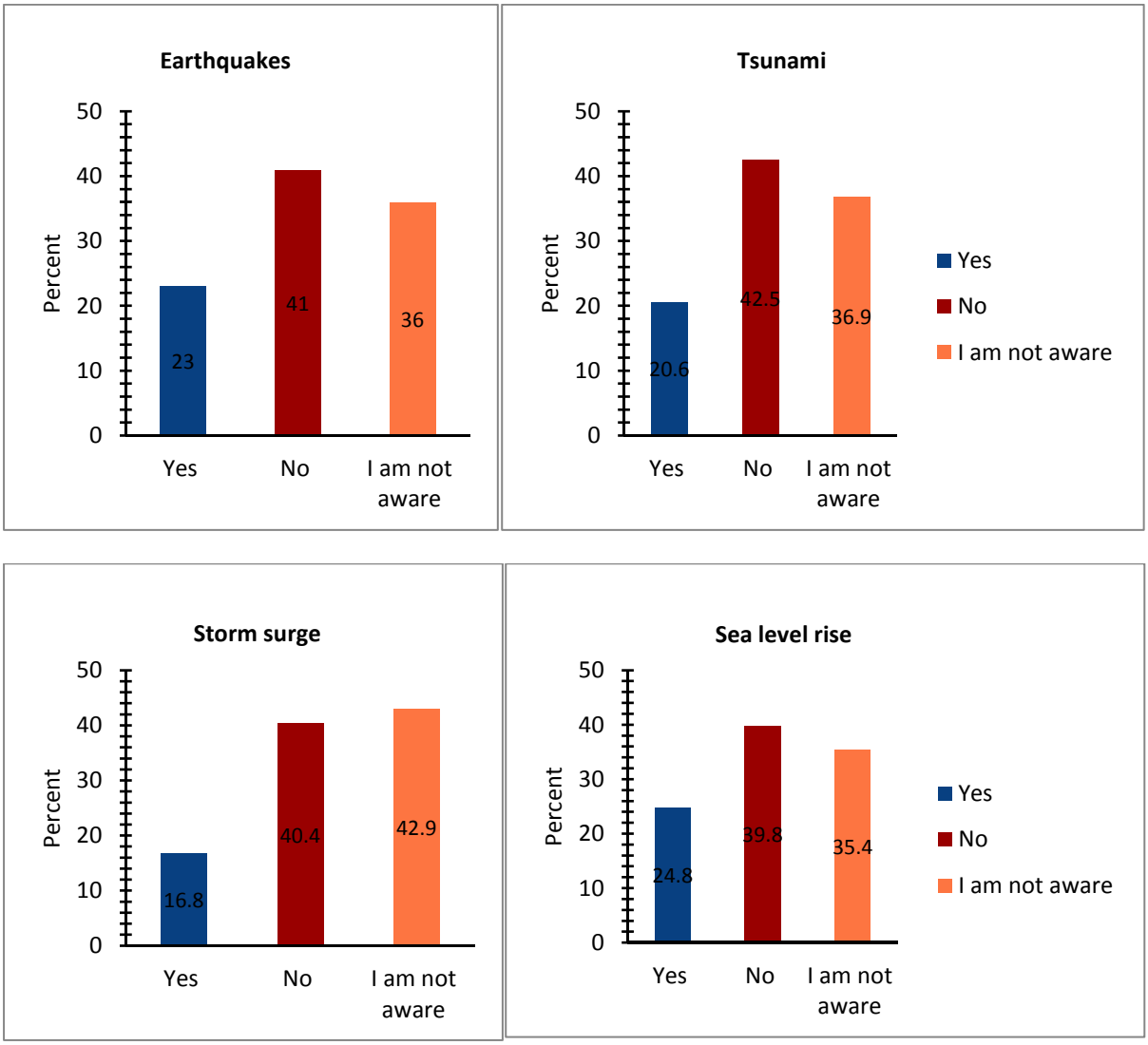


Fig.(12):Perception of interviewees on the capacities of the municipality to alert and inform the local population in the event of an earthquake, tsunami, storm surge or sea level rise.

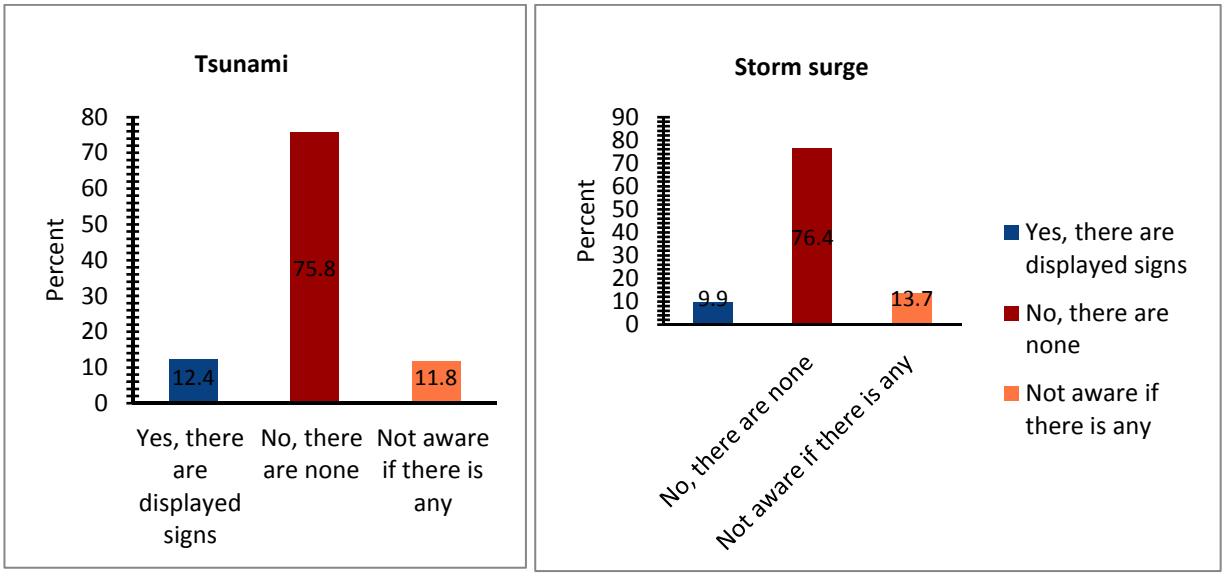


Fig.(13): If your municipality displays evacuation signs to indicate the best evacuation routes to take and or what to do in case of tsunami and storm surge.

5.3. Exposure and sense of exposure

The *exposure and sense of exposure* section aims to better understand the existing exposure patterns in the municipality of Alexandria, considering both the place of residence and the place of work and studies. It mainly analyses the proximity to the coast where the inhabitants live, work and study, and the patterns of dependency, to explore potential site-specific measures and capacities needed to reduce the vulnerability of the municipality.

How far do you live from the seashore/coast on foot (49%) lives more than 10 min while about (32%) lives less than 5 min walking from the shore and coastal area. For the workplace and schools the percentages were very close to each other. For having other properties within 10 minutes walking distance from the seashore/coast the highest percentage (77%) responses that they do not have any other properties. The data related to dependency of the population shows that about (65%) lives with their parents, grand's, children's (Fig.14).

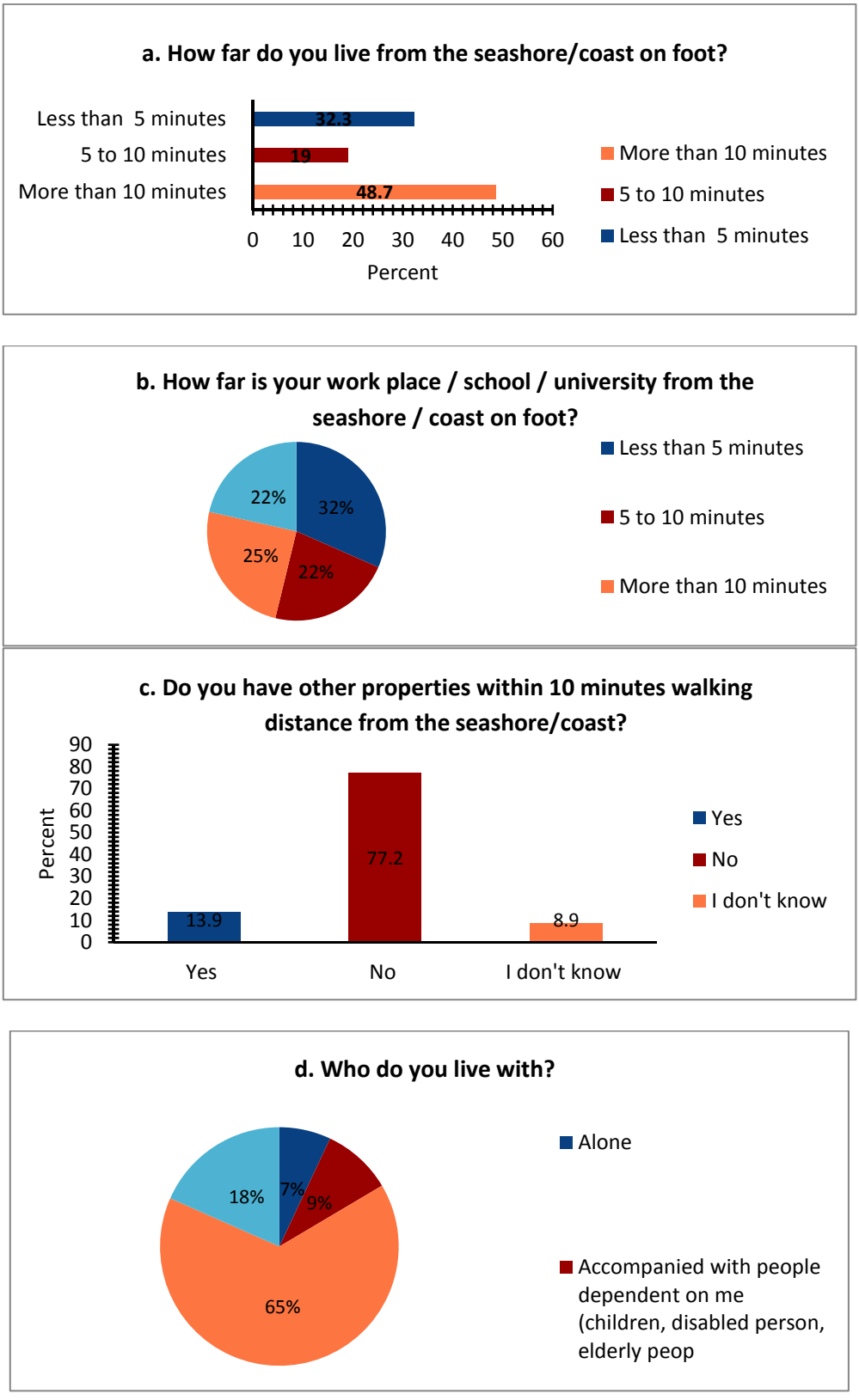
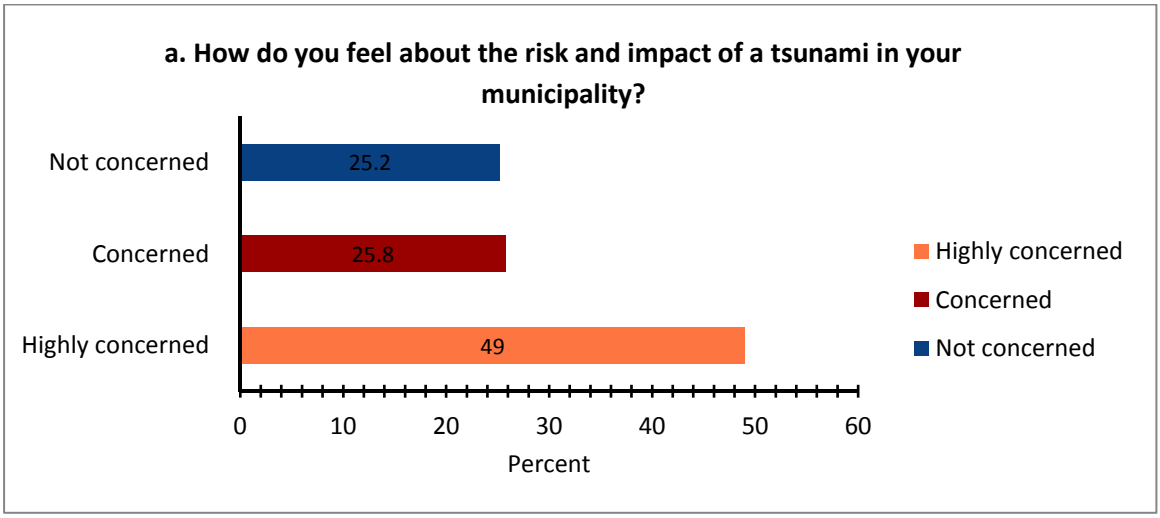
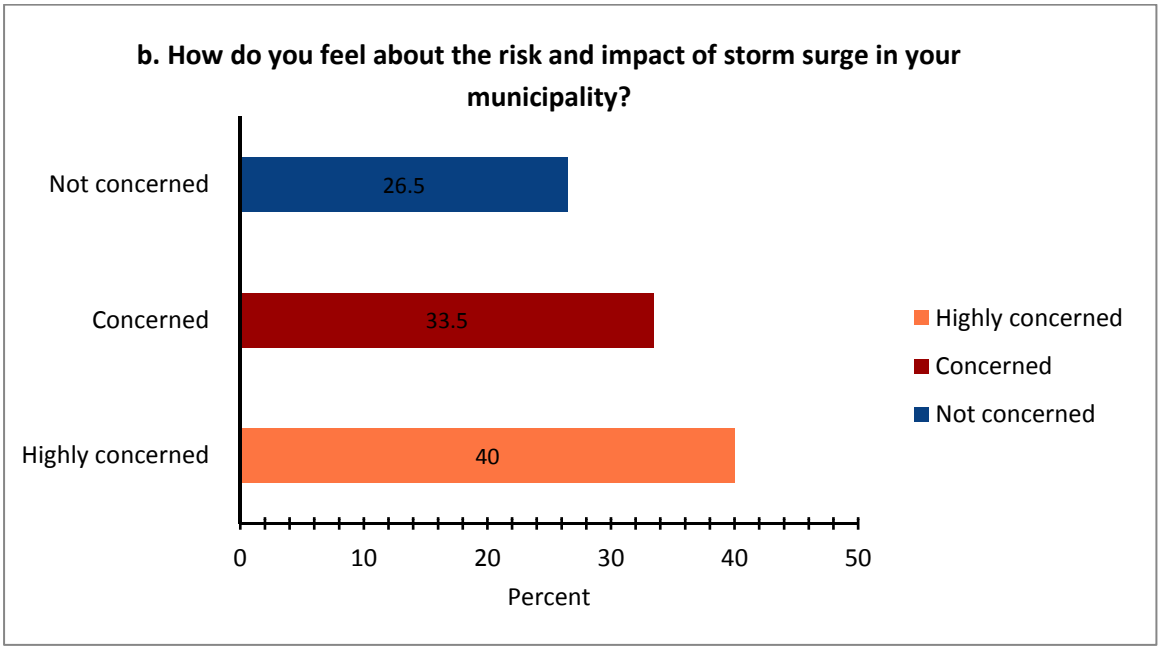


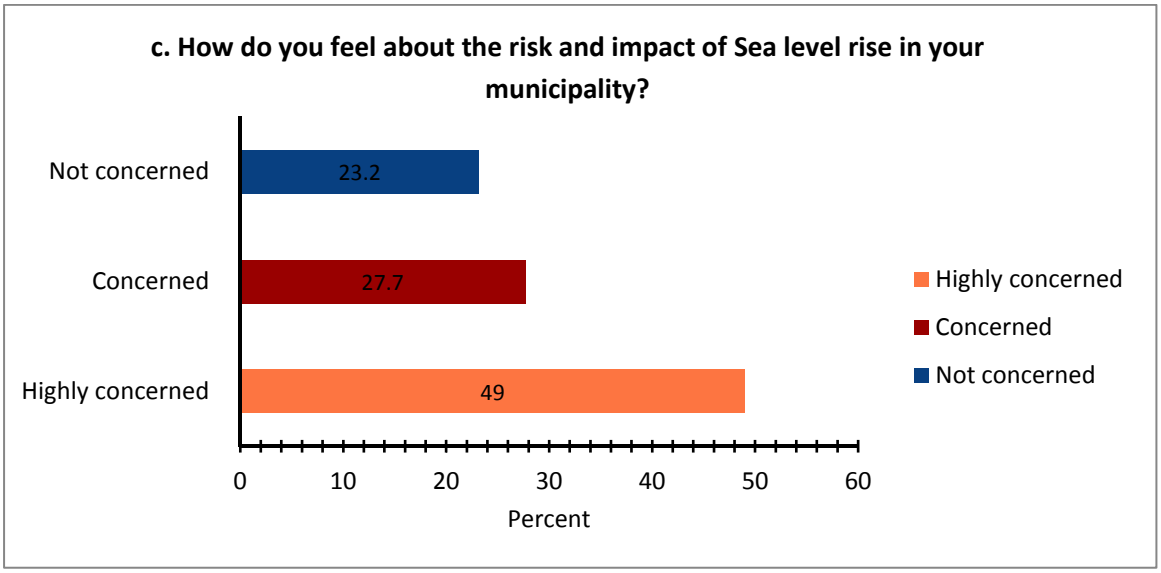
Fig.(14): Distance to the coast from homes (a), work, and study places (b), ownership of any other property (c) and data related to dependency of the population(d) of Alexandria.

5.4. Assessment, Preparedness, and Response

The *Assessment, Preparedness and Response* section aims to know the level of preparedness of Alexandria and how the community and population may respond in case of tsunami, storm surge and sea level rise. It assesses the level of knowledge of some preparedness measures in place, along with their participation in these, including the behavioral and reaction component in the event of such events. It also seeks to better understand whether people feel that they belong to a group/community. This information will be another important component in assessing the needs of the community in terms of sea level related disaster risk management in Alexandria, especially regarding preparedness and response.







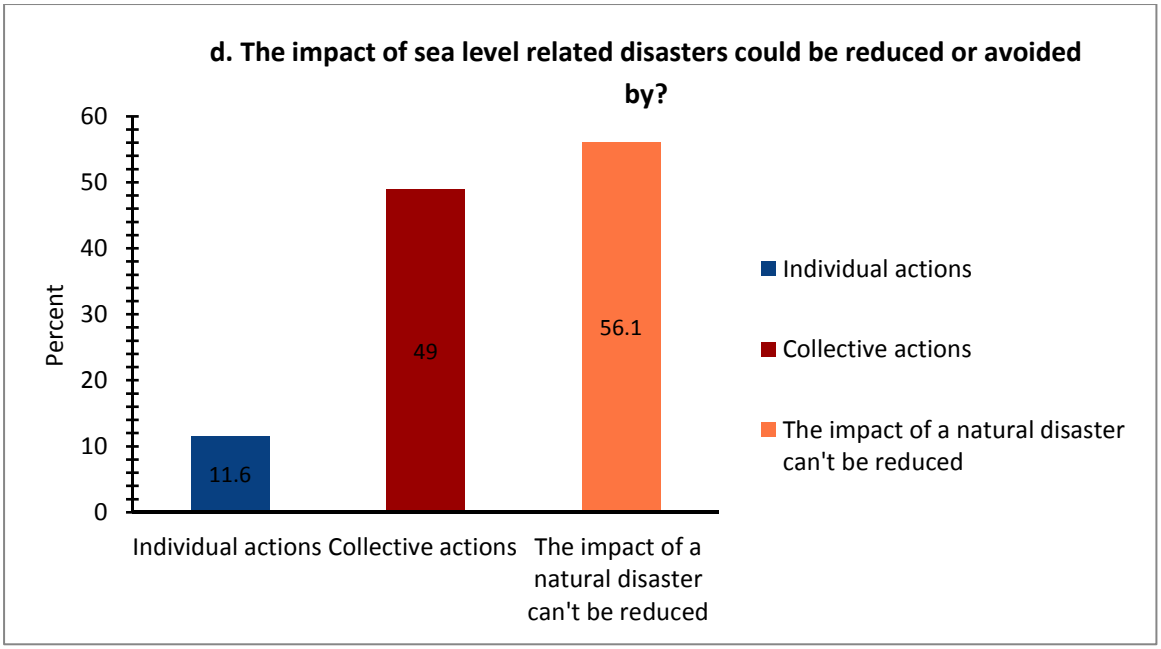
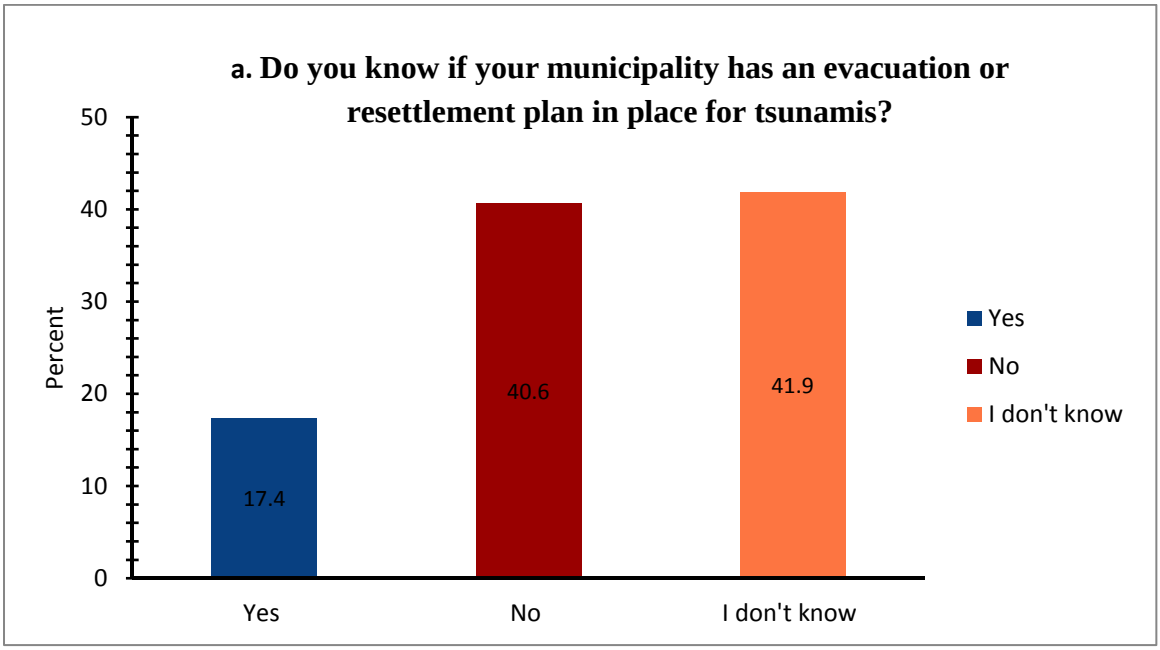
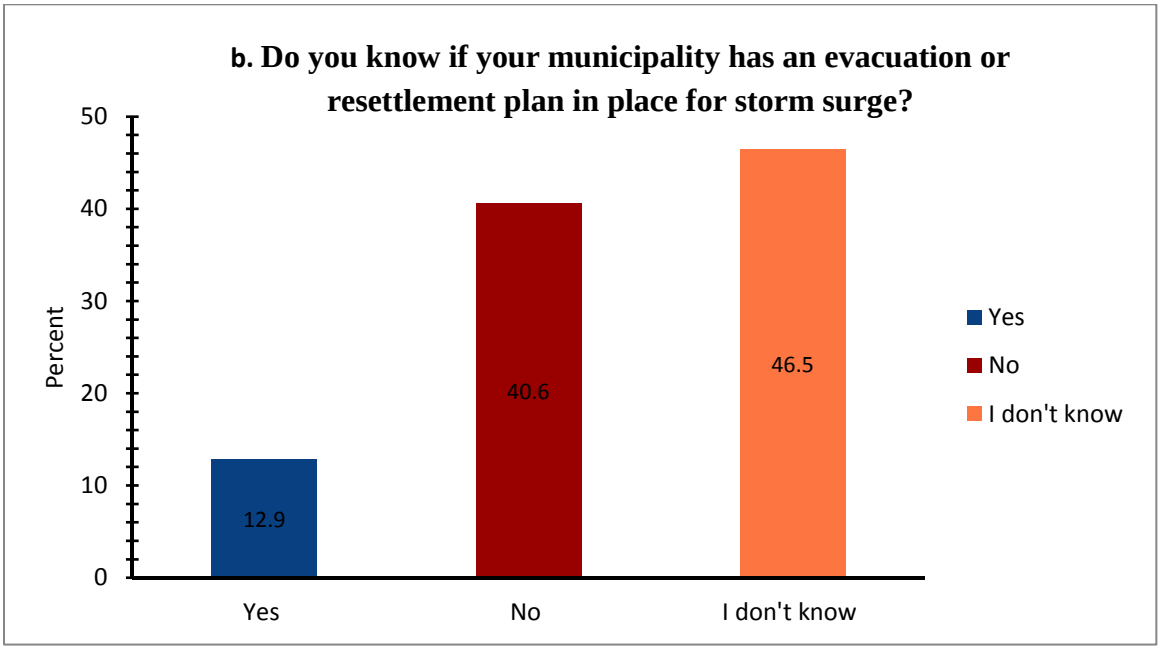


Fig.(15):Level of concern about tsunami risk (a), storm surge (b), sea level rise (c) and collective feeling about sea level related risk management (d) in the municipality of Alexandria.

The perception of how the people feel about the risk and impact of a tsunami and sea level rise in Alexandria municipality (49%) high concern; while (40%) high concern impact of storm surge in your municipality. 56% responses that the impact of sea level related disasters could not be reduced or avoided (Fig. 15).


a. Do you know if your municipality has an evacuation or resettlement plan in place for tsunamis?
Percent
50
40
30
20
10
0
17.4
40.6
41.9
Yes
No
I don't know
Yes
No
I don't know


b. Do you know if your municipality has an evacuation or resettlement plan in place for storm surge?
Percent
50
40
30
20
10
0
12.9
40.6
46.5
Yes
No
I don't know
Yes
No
I don't know

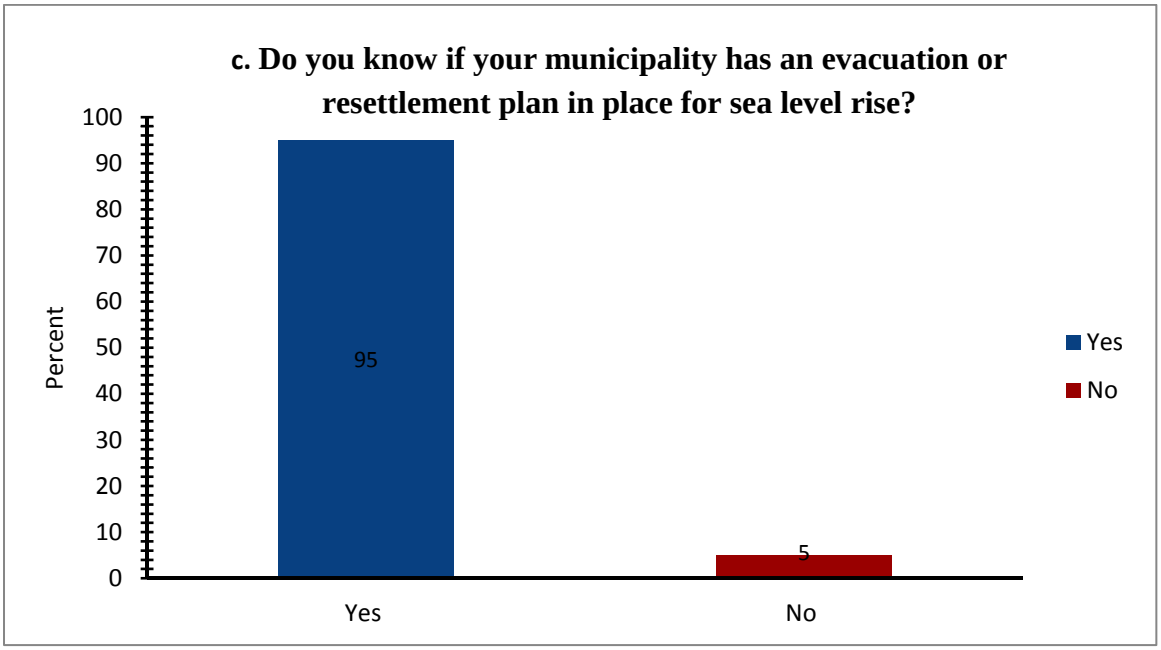
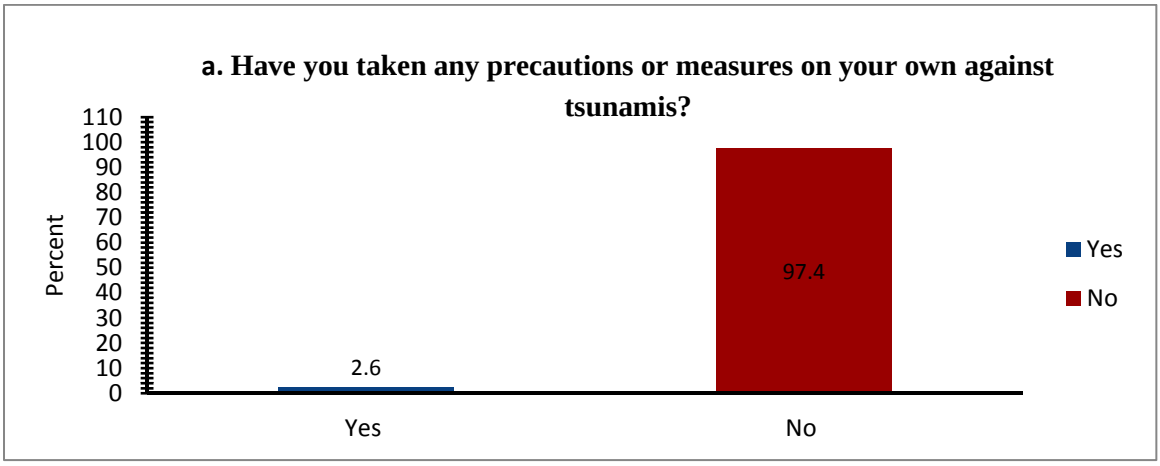


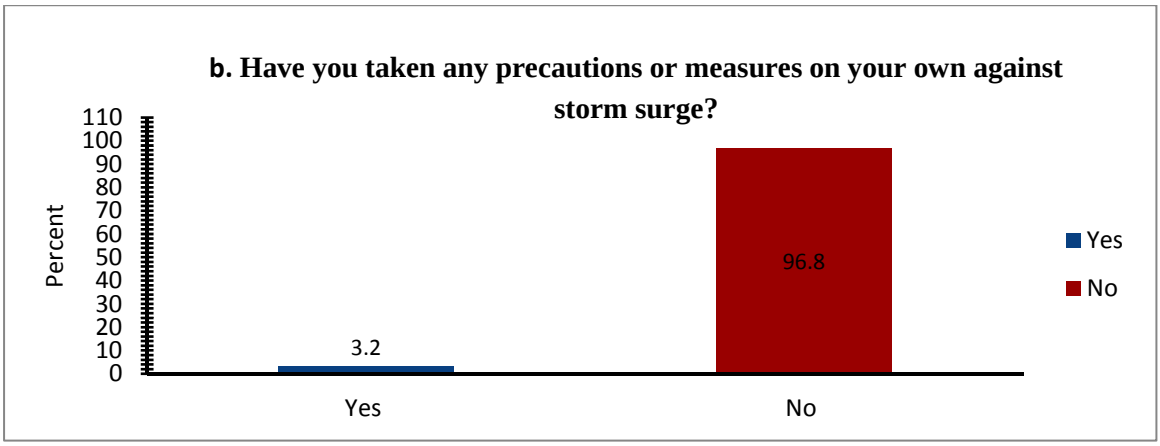
Fig.(16):Awareness of the existence of an evacuation plan for tsunamis (a), storm surges (b) and sea level rise (c).

When asking if Alexandria municipality has an evacuation or resettlement plan in place for tsunamis (41%) say no, while (42%) they did not know; while if Alexandria municipality has an evacuation or resettlement plan in place for storm surge (41%) said no and (46%) did not know. But for the sea level rise (95%) said that Alexandria has evacuation or resettlement plan (Fig. 16).

When asking the participants if they have taken any precautions or measures on your own against tsunamis and storm surges (97%) said no. while against sea level rise (96%) said no (Fig. 17).

The participants confirm that they do not have any kind of insurance against tsunamis (81.9%), insurance against storm surge (81.3%) of insurance against sea level rise (80%) (Fig. 18).





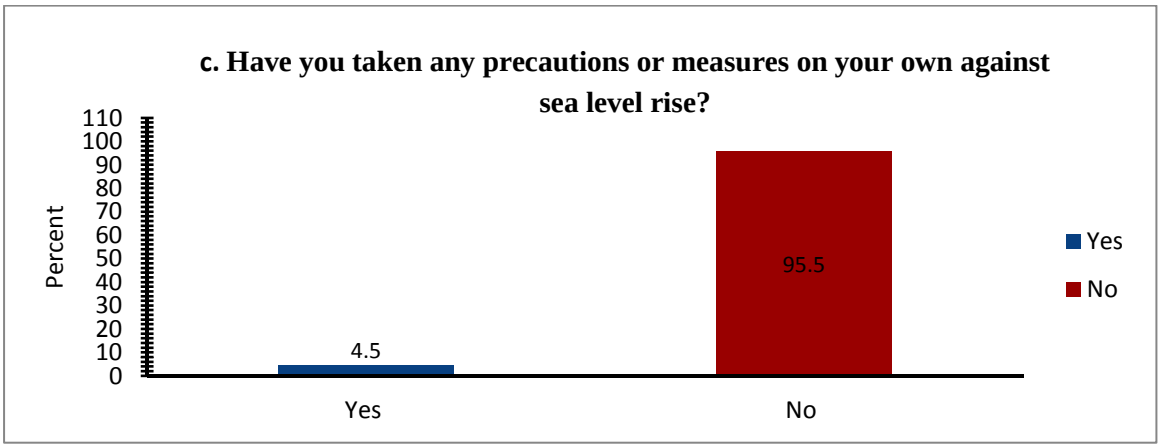


Fig.(17):Analysis of measures taken by respondents in the event of tsunamis (a), storm surge (b) and sea level rise (c).

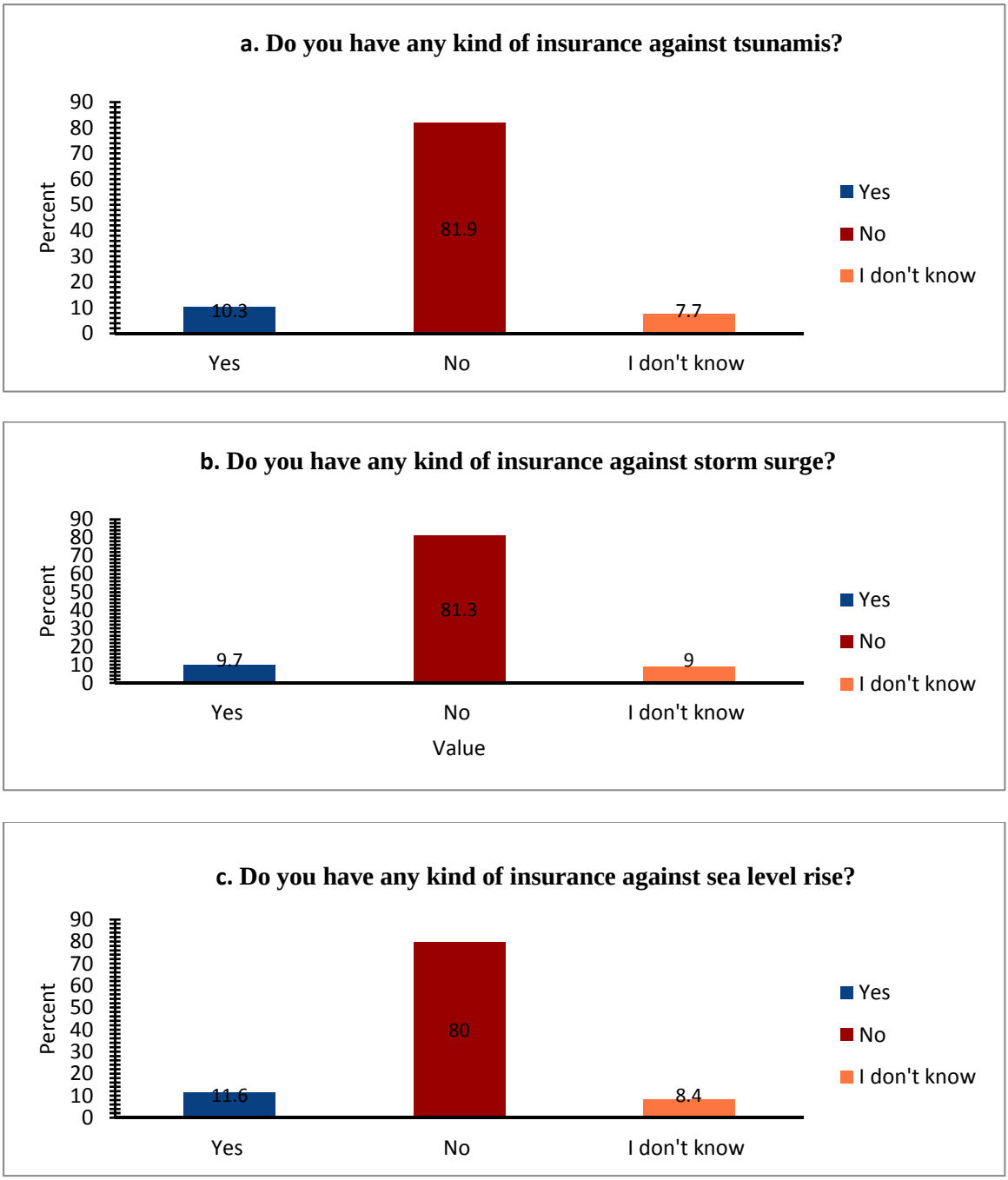


Fig.(18): Availability of tsunami(a), storm surge (b) and sea level rise (c) insurance from survey respondents.

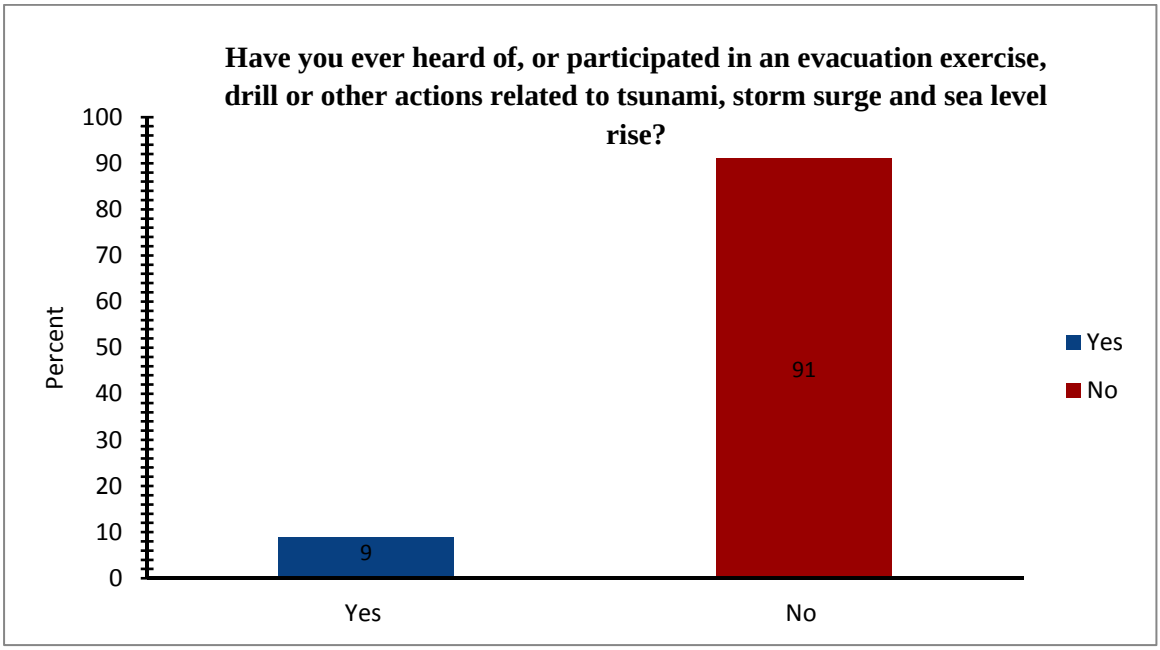


Fig.(19): Experience of survey respondents in evacuation exercises related to sea level hazards.

The perception of the participants if they have ever heard of, or participated in an evacuation exercise, drill or other actions related to tsunami, storm surge and sea level rise comes they do not participate in any kind of these activities before (Fig. 19). The evacuation exercise is a main output of the coastwave project in Alexandria.

When we ask the participants to imagine there selves are on the coast. What would they do first if they feel a strong shaking due to an earthquake; the highest responses shows that (35%) will observe the surrounding/ the sea while (33.5%) will move away from the shore. The reason that may affect people ability to evacuate to a safe area is (49%) will have to continue to run their business or activities while, (28%) have disabled and/or young people under their care (Fig. 20).

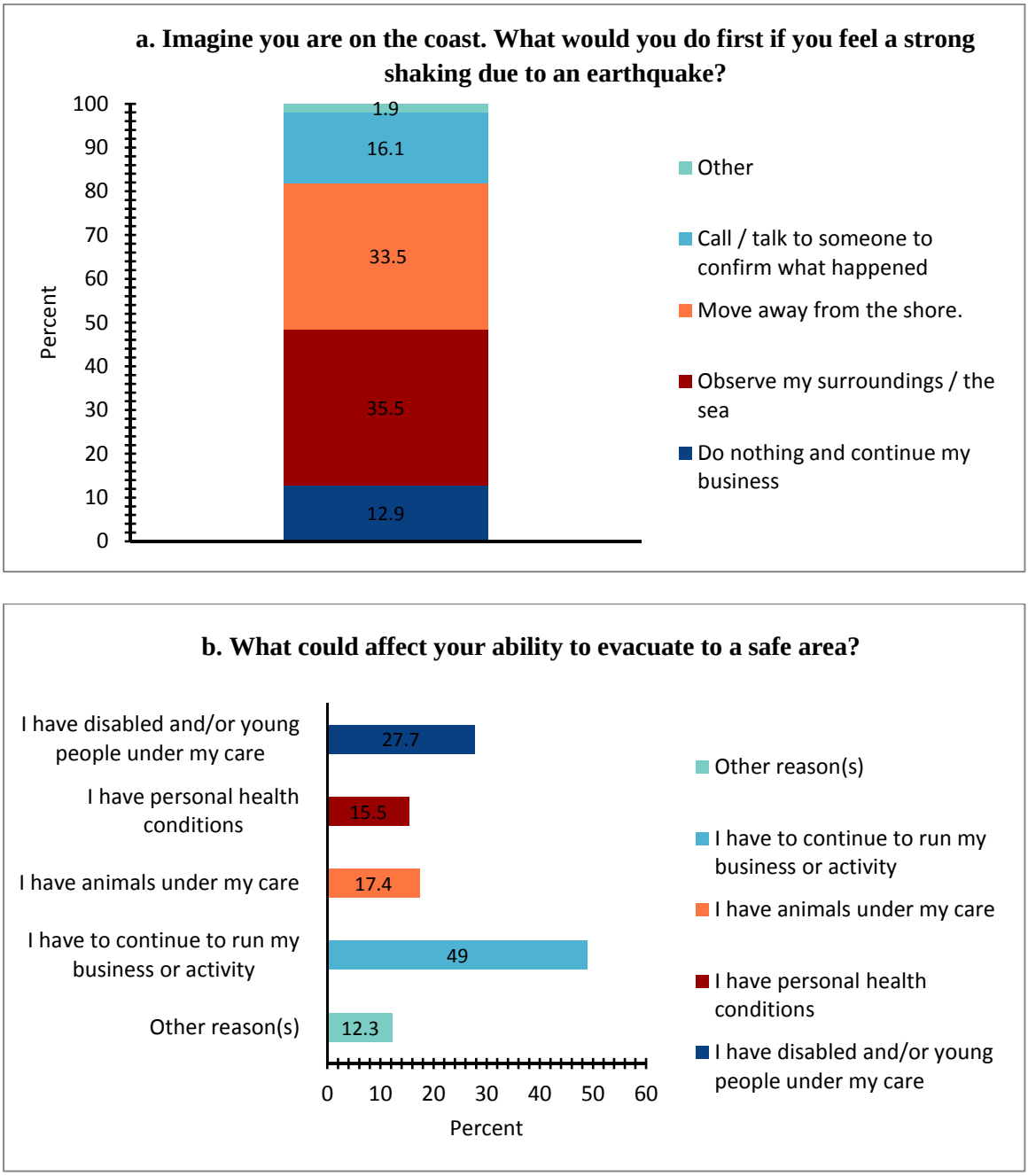


Fig.(20): Expected behavior of respondents in the event of an earthquake event (a) and possible constraints to evacuation (b).

5.5. Governance

The *Governance* section is the last section of the questionnaire. Focused on risk management and its integration into decision making, it includes questions for both emergency managers and decision makers, as well as for the general population. Among them, these questions seek to identify the communication channels preferred by the population to receive warnings, their knowledge and trust in the authorities responsible for the emergency, as well as their involvement, and willingness to be involved in the management of sea level related risks. In addition, some specific aspects and challenges for emergency professionals and managers are addressed.

According to table (1) the community prefers to receive the alert through sirens and loud speakers (52%) followed by e-mails televisions and social media.

Table (1): Which communication channel would you prefer for receiving alert messages? Please order from most important to least important (1 is the most important, 6 is the least important?

	Television	Radio	Internet (social media)	Audible alerts (sirens, loudspeakers)	SMS	E-mail	Responses
	Row %	Row %	Row %	Row %	Row %	Row %	
1	8.2%	5.4%	23.8%	51.7%	9.5%	1.4%	147
2	12.6%	14.2%	30.7%	16.5%	21.3%	4.7%	127
3	26.8%	17.9%	24.4%	9.8%	13.8%	7.3%	123
4	32.2%	23.5%	13.9%	9.6%	13.9%	7.0%	115
5	12.9%	21.6%	7.8%	2.6%	28.4%	26.7%	116
6	5.2%	13.0%	4.3%	9.6%	16.5%	51.3%	115
Totals							743

The perception of interviewees on the municipality's capabilities to manage emergency response operations in case of sea level related hazards. They found that Alexandria municipality is not able to manage emergency response operations for tsunami (81%), storm surges (77%) and (63%) for sea level rise (Fig. 21).

The awareness of respondents about the authorities responsible for the emergency in Alexandria in case of a sea-level-related hazard is responsible for managing the crisis in your municipality. The responses give the high responsibilities to coastal guards (52.6%), (50.7%) for civil protection agencies and (50%) for Alexandria municipality (Fig. 22).

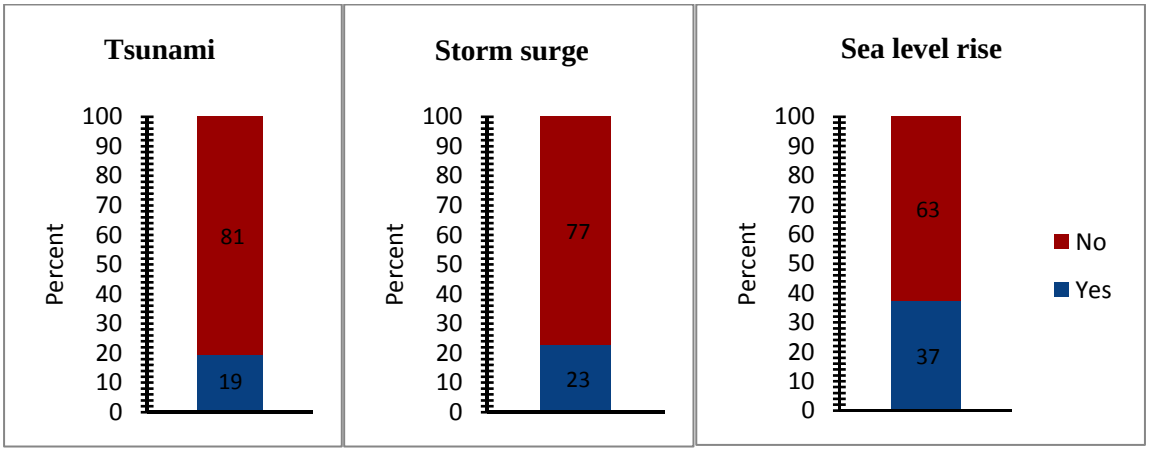


Fig.(21): Perception of interviewees on the municipality's capabilities to manage emergency response operations in case of sea level related hazards.

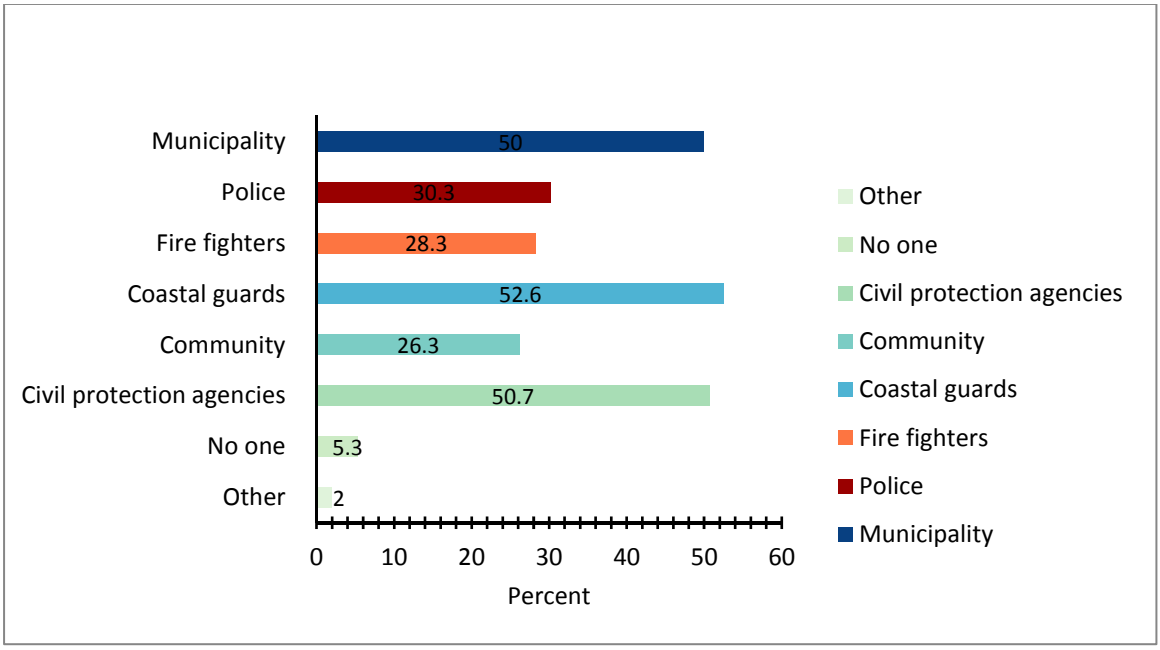


Fig.(22): Awareness of respondents about the authorities responsible for the emergency in Alexandria.

6. Key findings

The Risk Perception Survey Questionnaire of Strengthening the resilience of coastal communities in Alexandria - Egypt to the impact of tsunamis and other sea level-related coastal hazards has several key findings are as follows:

Awareness and knowledge: The survey revealed that there is a lack of awareness and knowledge among the coastal communities in Alexandria about tsunamis and other sea level-related coastal hazards. Only a small percentage of respondents had heard about sea level rise, while more number heard about tsunami and storm surges; on the other hand, fewer knew what to do in case of an emergency.

Preparedness: The survey found that most households in the coastal communities were not prepared for tsunamis or other sea level-related coastal hazards. Only a small percentage had emergency supplies, and even fewer had an emergency plan.

Risk perception: The survey showed that most respondents did perceive tsunamis or other sea level-related coastal hazards as a significant risk to their community. This perception reflects the awareness, knowledge, and experience with such events.

Communication: The survey revealed that there is a need for better communication between authorities and the coastal communities regarding tsunamis and other sea level-related coastal hazards. Most respondents reported that they had not received any information from authorities about these hazards. They prefer to receive the emergency alert through sirens, television, social media and e-mails

Vulnerability: The survey found that some areas within the coastal communities were more vulnerable to tsunamis and other sea level-related coastal hazards than others. These areas included low-lying areas, densely populated areas, and areas with poor infrastructure.

Overall, the Risk Perception Survey Questionnaire highlights the need for increased awareness, preparedness, communication, and vulnerability assessments in order to strengthen the resilience of coastal communities in Alexandria to tsunamis and other sea level-related coastal hazards.

Appendix

Arabic version

استبيان الدراسة الاستقصائية بشأن تصور المخاطر المتعلقة بمستوى سطح البحر

اللجنة الدولية الحكومية لعلوم المحيطات

تجري اللجنة الدولية الحكومية لعلوم المحيطات دراسة استقصائية بشأن تصور المخاطر الساحلية والتأهب لأمواج التسونامي وعرام العواصف وارتفاع مستوى سطح البحر، وذلك في إطار العمل الذي يضطلع به فريق التنسيق الدولي الحكومي المعني بنظام الإنذار المبكر بأمواج التسونامي والتخفيف من آثارها في المنطقة الشمالية الشرقية من المحيط الأطلسي وفي البحر الأبيض المتوسط والبحار المتصلة به، وكذلك في إطار تنفيذ مشروع "CoastWAVE" التابع للّجنة الدولية الحكومية لعلوم المحيطات الذي تموله المديرية العامة للعمليات الأوروبية للحماية المدنية والمساعدة الإنسانية التابعة للمفوضية الأوروبية، وتشمل هذه الدراسة الاستقصائية دولاً أعضاء مختارة وتسعى إلى الوقوف بصورة أفضل على كيفية إدراك سكان المناطق الساحلية لهذه الأخطار والمخاطر الطبيعية، ووضع توصيات لتعزيز الإستراتيجيات والمنتجات المتعلقة بالإبلاغ عن المخاطر في المنطقة.

وترمي هذه الدراسة الاستقصائية إلى الارتقاء بفعالية نُظم الإنذار المبكر المتعلقة بارتفاع مستوى سطح البحر والتخفيف من آثاره، فضلاً عن تحسين حالة التأهب في منطقة البحر الأبيض المتوسط من أجل إنقاذ الأرواح البشرية والحدّ من الخسائر والأضرار التي قد تحدث في حال وقوع كارثة طبيعية من هذا النوع.

ملاحظة: تُحاط جميع المعلومات المقدَّمة في إطار هذه الدراسة الاستقصائية بالسرية والكتمان فيما يخص هوية مقدميها .ويستغرق الردّ على هذا الاستبيان زهاء ١٥ دقيقة. ولكم منّا جزيل الشكر لمساهمتكم.

هذا الاستبيان موجَّه إلى الأشخاص في قطاع التعليم (المعلمون والطلاب وغيرهم) باستثناء الأشخاص الذين تقل أعمارهم عن ١٤ عاماً، والعاملين في قطاع السياحة (أصحاب المطاعم والحانات والمتاجر والفنادق، والعاملون في هذه المجالات، والمرشدون السياحيون، وما إلى ذلك)، والجهات القائمة على التصدي لحالات الطوارئ (الإطفائية والشرطة وخفر السواحل ووكالات الحماية المدنية، وما إلى ذلك) والجمهور العام.

تمت مراجعة الاستبيان من طرف اللجنة الدولية الحكومية لعلوم المحيطات لليونسكو، المديرية العامة للعمليات الأوربية للحماية المدنية و المساعدة الإنسانية للمفوضية الأوروبية و شركاء مشروع ال.Coastwave

English version

Sea Level Related Hazards Risk Perception Survey Questionnaire

Intergovernmental Oceanographic Commission

(IOC-UNESCO)

Within the framework of the Intergovernmental Coordination Group for the North-Eastern Atlantic, the Mediterranean and Connected Seas Tsunami Early Warning and Mitigation System (ICG/NEAMTWS) and the IOC EU DG-ECHO CoastWAVE Project.

The IOC-UNESCO is carrying out a survey with selected Member States on the perception of coastal risks and preparedness to tsunami, storm surge, and sea level rise to better understand how coastal populations perceive these natural hazards and risks and develop recommendations for enhanced risk communication strategies and products in the region.

The goal of the survey is to improve sea level related early warning and mitigation systems and preparedness in the Mediterranean region in order to save lives, reduce losses and damages in the event of a natural disaster of that kind.

Note: All information given in this survey will be anonymous and confidential.

The questionnaire will take about 15 minutes. We thank you for your contribution.

Questionnaire is for people in the education sector (teachers, students, etc) except people under the age of 14 years old; the tourism sector (restaurant-bars, stores, hotel owners, tourist guides, employees of the sector, etc); the emergency responder sector (fire fighters, police, coastal guards, civil protection agencies, etc); and the public.

Survey reviewed by IOC UNESCO, EU DG ECHO and Coastwave partners.