

THE EFFECT OF NATURAL AND HUMAN GEOGRAPHY FACTORS ON SCHOOL SAFETY AND EVALUATION OF THE SCHOOL MANAGERS 'VIEWS ON THE TOPIC

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ABSTRACT

It is essential to provide an appropriate educational environment for educational activities to be carried out effectively. In this context, the robustness of the school buildings, where the students spend most of the day and where they meet their educational activities, is very important. If the school is vulnerable to external geographic hazards, this seriously threatens student health and safety. These hazards can be natural disasters that may occur as a result of natural processes, or in human cases that may arise as a result of human activities.

This study is the study of determining the effect of geographical natural processes and human geography processes that occur as a result of human impact on school security and school administrators' views on the subject. In addition, before the establishment of a school, determining the criteria related to the location selection of the school and trying to determine whether the existing schools meet these criteria are among the topics that are tried to be emphasized within the scope of the study.

The universe of the study is the Ministry of Education of the Turkish Republic of Northern Cyprus, the primary schools in Nicosia, Famagusta and Kyrenia affiliated to the Primary Education Department, and the education ministry and union representatives with teachers, school principals and assistants in these schools. In addition to the interview form prepared by the researcher, document analysis, social media news analysis and school photographs were used as data collection tools.

As a result of this research, the level of preparedness of the school in case of a disaster or against human effects was tried to be determined. In this determination process, suggestions for safe school observation form criteria prepared by the researcher were developed. In addition, the criteria to be established as a result of the research findings will be a guide for future school constructions.

Keywords: Safe School, school location selection, school and physical environment

1. Introduction

Throughout the educational activities of human history, people have always integrated and gained value with space. Historical data show that society believes and develops that educational programs are an area suitable for its purpose, due to the development of philosophy, religion and science over a period of time. Nowadays, school is defined as a place of learning and is expected to learn effectively in school. After providing the necessary

environments and conditions, all schools can provide appropriate education and training services by improving the internal and external environment to complete effective and successful learning (Atabay, 2014).

The decision to choose the most suitable place to create a new school district has many problems for planners and the Ministry of National Education. Finding a training ground is one of the most basic elements for getting an education. When choosing a place, many factors such as size, scope, cost and location should be considered. Land compliance analysis based on various standards is an effective method to eliminate the problems encountered and to create a positive education climate (Yücesoy, Demir, Bağlama, Baştaş, Oznacar, 2020; Başeğmez, 2017).

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Physical Geography factors can be listed among the important factors affecting school administration. Climate, geological movements, natural environmental factors affect school administration positively and negatively. When we consider the geography of Turkey, the physical factors of the country are diversified. Since the Turkish elesces is an increasing geography from west to east, Eastern Anatolia in particular is a region dominated by harsh climatic conditions. Accordingly, winter periods are long and harsh. In addition, the duration of the abdominal stay on the ground covers a long time, such as 6 months. Transportation to basic needs such as education and health is negatively affected due to the amount of snow that exceeds human height and the snow prevents transportation. Depending on the lack of schools in small villages with scattered settlement features, blocking pedestrian or school services to residential areas where central schools are located, depending on harsh winter conditions, negatively affected students' right to education and access to materials such as textbooks to be used in education (Demir, 2020). Again, school buildings cannot be built in any area due to the rugged terrain. Depending on the danger of avalanches or landslides, the place to be built of the school building must be carefully selected. Otherwise, this will disrupt educational activities as a possible disaster situation will damage the school building. Depending on these conditions, schools that are constantly on holiday cannot provide an effective educational environment. Therefore, the lack of consideration of these factors causes disruptions in education and prevents effective school administration. With this study, it was tried to determine what the geographical structure of the region, climate characteristics and environmental factors are effective in school management.

Purpose of the Study

In recent years, human-induced changes in the world climate and geological structure have led to many extreme natural events and expanded the field of impact. Again, the destructive power of increasing natural events has increased and the economic and social damages caused have negatively affected the course of daily life and left many institutions in service. Educational institutions affected by these extreme events are becoming cannot carry out their educational activities for a long time. Considering all this, the measures to be taken to ensure that educational institutions are not affected by location selection and natural events are very important in terms of

school safety. Based on this idea, the research is aimed at raising awareness of school safety and the subject to school administrators at primary education level and to evaluate the subject perceptually.

1.1. Research Questions

For this purpose, the research will look for answers to the following questions.

1. Can you tell us about your level of knowledge about natural disasters?
2. What do you think the extent of the effects of geographical factors on human life is?
3. Can you tell us about the importance of natural and human geographical factors in terms of school safety?
4. Do you think geographical factors have been taken into account in the location selection of the School you are in? Can you tell us about these factors?
5. Can you tell us about your school's level of availability in case of a disaster?
6. Do you provide necessary trainings to school components (managers, teachers, students and service personnel) on school safety and courses such as exercise training in case of disasters, etc.?
7. To what degree are your school's infrastructure systems ready for the risks of possible floods, floods, landslides and lightning strikes?
8. Do you know the risks that patients at risk of respiratory and radiation, such as industrial facilities and cell towers, pose to student health if they are around your school? What can be done/done to eliminate these risks?
9. Do you find the Ministry of National Education sufficient for school location selection? What do you think the role of school administrators in this process should be?
10. What do you think should be considered when choosing a school place?

1.2. The Importance of Work

In recent years, human-oriented interventions in the world have brought many unseasable disasters in the globe. With the growing world population, the demands have increased and in order to meet these demands, nature has been slaughtered more and new factories have been established. With all these activities, greenhouse gases began to increase in our world and the global warming disaster that threatened the whole world emerged. With the increased greenhouse gas, the temperature of our world has increased and climatic changes have occurred in many places.

With these changes, many extreme events have either increased or their field of influence has expanded and its destructive effect has increased.

These extreme natural events, which are on the rise, invite heavy prescriptions of many natural disasters given the choice of location of schools. Schools located in areas where there is a risk of earthquakes and landslides in terms of school safety may be adversely affected by a possible natural event. Likewise, with the change of the world's climate, possible weather events such as hurricanes, tornadoes, storms, floods, extreme snowfalls threaten school safety.

The findings to be determined as a result of this research are thought to guide school administrators in determining strategies for choosing places of schools and improving the safety of school buildings in the face of all these possible threats.

1.3.Limiteds

This research;

1. With the 2019-2020 academic year in terms of duration,
2. In scope, with the opinions of teachers, school principals and assistants working in the first schools of the Ministry of National Education and Culture of the TRNC and the top managers of the Ministry of Education and the union managers who are active on the board of education unions with the highest number of members,
3. With qualitative research method,
4. It is limited to the semi-structured interview form developed by the researcher himself as a means of measurement.

School Safety

One of the multidimensional problems that school administrators must constantly address is school safety. This is a question of school safety, school environment and environment. First, school safety means that students and teachers are free from physical, psychological and emotional aspects (Wanat, 1996).

Protecting students from harmful behaviors such as violence, aggression, alcohol, drugs, sexual harassment and traffic, fire, flood and earthquake, as are themselves, other students or the environment is one of the most important responsibilities of schools and school administrators (Dönmez, 2001).

The principal plays a central role in school safety. He's a school administrator every day. He is the first person responsible for policy implementation and supervision. More

importantly, the manager is responsible for the work of employees, it will ensure that students follow and supervise the rules. At the same time, the task of ensuring communication with students, parents and the community on security issues is primarily the administrator. In addition to using various technical facilities to take various security measures, administrators have a very important responsibility to create a suitable environment for all students to learn, work and live together (Dönmez, 2001).

In order to be able to teaching effectively, it is very important that students and employees feel safe in the teaching environment. It is very difficult to teach and learn effectively in a personally unsadned environment. First, in every corner of the school, every student should feel safe as in their home. The school's administrative practices and rules should aim to create such a safe environment. According to Maslow's motivation theory, learning is very difficult, even impossible, for unsuring students (Işık, 2004).

Impact of Earthquake on School Safety

Natural events are often unpredictable and absolutely inevitable, they should be considered part of everyday life, and a disaster culture created by these events should be created in society. Therefore, as we have seen in countries that have learned to live with similar natural events, in our country, it is possible to educate all classes of society about disasters and deal with them before natural events become disasters or disasters (Uluğ, 2004).

Although school building design is seen as a specialty in developed countries, it has not yet become a specialty in Turkey. Although meb has recently conducted type project development research (New School Projects, 2006), school buildings are still built according to some standard type projects, which are usually developed by the state in this regard (Işık, 2004).

Therefore, the "Regulation on the Construction of Buildings in Earthquake Zones" published in the official newspaper no. 26454 on March 6, 2007 is a very important legal practice in the construction of schools and other buildings. Unsturned teaching buildings are one of the biggest threats to student safety. Among the buildings, the schools most affected by the earthquake ranked first. 131 schools were destroyed in the Marmara earthquake in 1999. Similarly, in the 2003 Bingöl earthquake, 85 students and 1 teacher died at the Çeltikuyu boarding district primary school, located 15 km east of downtown Bingöl.

(www.unicef.org/turkey/pc/_ep9.html)

Impact of floods and floods on School Safety

Humans formulate structures, measures and plans where meteorological disasters will not affect human life and habitat. One of today's consequences of climate change and one of the consequences of future climate change is the increase in the number and severity of meteorological disasters (Demircan, 2017).

The damage caused by floods and floods affects public life in many ways. Basically, the impact of flooding has a complex structure. These disasters are the most common in the world and the most pronounced effects are reflected in human life and economy (Korkanç, 2006).

Similar to temperature increases, there are also increases in the number and severity of meteorological disasters. In the meteorological disaster reports of the General Directorate of Meteorology, storms and tornadoes and heavy rainfall and floods are two disasters that stand out in number and severity. Especially floods in cities can cause greater harm and effects due to incorrect and irregular human construction (Demircan vd., 2017).

In particular, the flooding caused by the increased rainfall in Turkey varies according to the regions. Şensoy et al. (2008) The number of heavy rain days increases, especially in the Black Sea and Mediterranean regions, often causing extreme flooding. They stated that one to five days of rainfall increased in marmara in the east and the largest regions outside Anatolia in the southeast.

Previous research has shown that floods and floods often affect human health in two way. The first is the direct effect and the second is the indirect effect (Menne et al., 1999). Direct effects are often caused by flooding, such as drownings and injuries. Indirect effects are those of other systems caused by flooding. Examples include waterborne infections, acute and chronic effects of exposure to chemical pollutants released by floods, and effects such as insufficient food (WHO, 2002).

Especially floods due to sudden downpours threaten school safety. Schools in the city where reinforced concrete is increasing are directly affected by the flooding. A flood that may occur as a result of possible downpours, especially during school hours, can lead to loss of life in schools and damage buildings. In this context, the robustness of the school buildings, the well-organized and continuous cleaning of water evacuation systems will ensure that they are minimally affected by a possible flooding.

Impact of Tornadoes, Tornadoes and Storms on School Safety

The safe environment of the school is a prerequisite for effective teaching. Natural disasters such as earthquakes, floods and storms can threaten human factors in schools and the safety of school buildings (Dönmez ve Özer, 2009)

According to the results of the projection studies conducted by Demircan (2017), they indicated that there may be irregularities in precipitation and decrease in precipitation amounts, increased temperature and precipitation type changes, early snow melts, especially in winter season. They also talked about the risk of excessive rainfall, especially in the summer months, especially in the western and northern coastal regions of Anatolia. In their research, extreme rainfall may have caused flooding and high temperatures in recent years. They believe extreme weather events such as storms, hail and algae can lead to increasing numbers and violence.

The impact of lightning on school safety

Lightning occurs when static electricity generated in the cloud discharges into the soil. There is no equipment to prevent ejaculation events (Ismailoglu, 2011) and, generally, research is moving towards controlling ejaculation. Due to the variable current produced during the discharge process, it can directly damage the biological and structure and indirect effects on lightning. Lightning discharge can cause damage, especially in the pipeline near the evacuation bar (Yurtsever, 2009).

The frequency of lightning formation in the world geography is different. Although there are 1,800 lightning events per minute in the world, kampala in Uganda has 242 lightning days a year in the region with the most lightning strikes. Usually, although there is no lightning at the poles, the number of lightning increases as we move towards the equator (Useful, 2009). In the TRNC, however, thunder is rare from June to September, but in other seasons it is heard an average of four or five days a month from October to January, and two or three days a month from February to May.

Impact of Power Plants on School safety and human life

Multiple sources can be used to generate electricity. In a hydroelectric power plant (HPP) that uses water potential; It is also possible to generate electricity in nuclear energy using uranium and ore elements using fossil fuels such as lignite, oil and natural gas. Power plants temporarily damage air, water and soil due to dust clouds formed during the

establishment phase. The other negative problem is the damage caused by motor vehicles during the construction of power plants. On the other hand, it make agricultural activities in the area around the plant the basis of nutrition, develops fishing activities for stagnant water and creates recreation areas in the environment.

Thermal power plants are harmful to the environment in the form of solids, liquids and gases. The production of solid waste depends on the energy used by the power plant, the ashes are mixed with water, liquid waste is collected in the lake and gas is thrown from the chimney of the burned substances. These wastes are gases that pollute the air in the form of gases, especially sulfur, lead and nitrogen. Gas combustion system does not produce nitrogen and oxide in gas-fired plants that are not too old. In thermal power plants, the main pollutant emissions from the burning of fuel are emitted into the atmosphere; sulfur oxides, azo oxides, carbon dioxide and particulate materials. These emissions depend on the type, composition and combustion technology of the fuel used (Kadioğlu-Tellioğlu, 1996). In this sense, the type of fuel used in thermal power plants becomes very important. "Because the quality of fuel consumed by thermal power plants in China is very low, the pollutants produced by each degree of energy production are also very high. Low-coal thermal power plants in Turkey disperse electrical energy, especially gas and liquid electrical energy, into three pollutants, including solids. Various gases and particles can cause serious air pollution, especially in cities and regions where they are found (Garipağaoğlu, 2002). In addition, it pollutes the environment in different ways depending on the type of energy used in industrial facilities.

Factors to Consider when Choosing a School

The school contributes to social development through close monitoring, adopting and transferring social, cultural, technological and economic development all over the world. It is expected that the school will not only preserve and maintain the existing culture of society, but also develop and change the society in which they live. Therefore, the school must have a dynamic structure. This vitality can be achieved by creating enough physical space in school (Başegmez, 2017).

Throughout the educational activities of human history, people have always integrated and gained value with space. Historical data show that society believes and develops that educational programs are an area suitable for its purpose, as philosophy, religion and science develop within a certain period

of time. In our time, school is defined as a place of learning and is expected to learn effectively in school. After providing the necessary environments and conditions, all schools can provide appropriate education and training services by improving the internal and external environment to complete effective and successful learning (Atabay,2014).

The decision to choose the most suitable place to create a new school district has many problems for planners and the Ministry of National Education. Finding a training ground is one of the most basic elements for getting an education. When choosing a place, many factors such as size, scope, cost and location should be considered. Land compliance analysis based on various standards is an effective method to eliminate the problems encountered (Başegmez, 2017).

In the "School Location Selection and Approval Guide" published by the California Department of Education, criteria to be evaluated in school location selection are determined. Closeness to the airport, high voltage transmission lines, toxic and harmful substances, harmful gas emissions and facilities, other health hazards, closeness to railways, high pressure natural gas pipelines, gas pipelines, pressure sewer pipelines or high pressure water pipelines, closeness to propane tanks are among the criteria. When choosing a school place, access criteria should be set for tanks, noise, main roads, geological surveys and ground surveys, traffic conditions and school bus safety, school safety roads, common materials, fault lines, landslides and floods.

2.Method

2.1.Pattern and Approach of Research

Qualitative scanning pattern was used in this research. In qualitative research, the researcher is the one who makes the research meaningful and attempts to make sense of part of social life (Rossman ve Rallis, 2010). Quality research, statistical summaries or analyses and studies can be counted. Qualitative research often includes interviews and observations rather than official measurement tools (Marczyk, DeMatteo, & Festinger, 2005).

In this study, semi-structured interview technology, content analysis and document analysis, which is qualitative data collection method, were used. The main feature of the interview technique is to reveal the perspective of the interviewer. semi-structured negotiations predetermine the problem and try to collect data with the specified issue (Karasar, 2002).

3. Results

The findings of the study were examined under the heading of semi-structured interview form analysis.

Participants' Knowledge Levels about Natural Disasters occurring in the region where they live

Table 1. Participants' views on the level of knowledge about natural disasters occurring in the region where they live

Theme	Participant Feedback	
	N	%
Adequate	27	100

The participants' answer to the question "Can you tell us about your level of knowledge about natural disasters occurring in the region where you live?" is as shown in Table 1. All participants stated that their level of knowledge for natural disasters occurring in the regions where they live is sufficient. Participants' statements are as follows;

"I live in the Lapta area. It's the most common natural disaster in this region. They are floods and floods. I think that the founding of lapta itself at the foot of the five-finger mountains and the distorted urbanization and uncontrolled growth in the process, the closing or narrowing of creek beds and water channels for many reasons reveal these natural disasters."K1

"In recent years, in the region where I live, in winter, there have been flash floods, flooding, severe storms, sudden hailstorms, and consething rock falls and damage to trees. In summer, extreme heat, desertification and forest fires are experienced. It is a region in the earthquake zone of Cyprus. The last time there was a magnitude of 5.5 occurred a few years ago off the coast of Cyprus."K9

"Cyprus is a small place, a catastrophe in one place can affect other regions. Due to the air pollution created by the port in The Karakol region in Famagusta and the population density in the region, the electro magnetic field created by the base station and internet providers is a serious problem. Of course, these are catastrophes created by human hands. Naturally, the Famagusta region is close to the earthquake zone and will suffer a possible earthquake."K11

"I know about natural disaster events reflected in news sources. I think it's a good level."K22

"From primary school age, everyone knows about disasters. Textbooks are mentioned in these schools. I think everyone is aware of this, especially in this period of time in the digital age, from floods to earthquakes, fires from different human hands

and tsunamis. I think my knowledge of this is not very detailed, but it is."K13

Extent of The Effects of Natural and Human Geographical Factors on Human Life

Table 2. Views on the extent of the effects of natural and human geographical factors on human life

Theme	Participant Feedback	
	N	%
Has a high effect	4	15
Effective	18	67
Varies by region	2	7
Does not affect	3	11

As stated in Table 2, four themes have emerged regarding the extent of the effects of natural and human geographical factors on human life. These have a high effect (n4), are effective (n18), vary by region (n2), do not affect (n3). The opinions of the participants are as follows;

"I think there are 2 factors that definitely affect human life and human behavior."K8

"Construction and similar works were made in front of the creek beds, preventing the flow of water. For this reason, it negatively affects the life of people and animals in the environment."K12

"Man is no less or less affected by nature according to his level of development."K20

"Natural and Human Geographical factors are vital on human life. Our whole lives are shaped accordingly."K24

"It has a wide range of influences, from people's life, cultures, habits and food" K25

"I think it has no extreme effect in terms of the region in which we live. But it can be more effective in different regions."K14

Natural and Human Geographical Factors, Severity for School Safety and The Level of Consideration of Those Responsible

Participants were asked "How important are natural and human geographical factors for school safety?" and the answers given by the participants were stated in Table 23.

Table 3. Natural and human geographical factors, degree of importance for school safety

Theme	Participant Feedback	
	N	%
Important	27	100

All of the study participants expressed the opinion that natural and human geographical

factors are important for school safety.

In the continuation of the question, participants were asked, "Do you think those responsible take this importance into account?" The emerging themes for participants' answers are examined in table 3 below.

Table 4. Level of consideration of those responsible

Theme	Participant Feedback	
	N	%
Not considered	27	100

Union officials, ministry officials, school principals and assistants and teachers who participated in the study all (n27) have the opinion that those responsible do not take into account the importance required. The participants' answers in this direction are as follows; "The location and transportation of the school also has implications for the solidity of the place where the school building was built and the building itself. I don't think the authorities are paying much attention."K15

"The department we call responsible is the ministry of education and a verb is responsible for schools related to the repair of schools. I don't think they're thinking about environmental factors either and doing school construction types or new additional classrooms. He did not do enough feasibility studies. From 1974, MEB has made 20 schools from elementary school to high school. We see that these newly built school buildings suffered the greatest damage in the floods of the past year. This means that while a school is being built from a scientific point of view, while a classroom is being repaired, we see random places selected for construction by selecting random building materials without the use of building engineering and building technology from a scientific point of view.

Karakum elementary school: there has been

Table 5. Geographical factors in school location selection

Theme	Participant Feedback	
	N	%
Weather conditions and Disaster resistance	27	100

All participants expressed the geographical factor that is important in the choice of location of schools as resistance to weather conditions and disasters. Participant expressions are as follows;

"The school I was in is a Greek building from before 1974. It is a school located between neighborhoods. In recent years, it has been affected

wide speculation by the press about the collapse of the construction of a carcass-state school that has come up recently. The political man tied it to the contractor and the contractor to the worker. This point is not true. The lack of building inspection here is determined for us. The unit to do the audit is the ministry of education or the construction unit of the relevant ministry. This is a crash caused by a lack of build control. Although the contractor continues to build this carcass with incorrect analyses, the ministries are the authorities that will supervise and allow and cast during the inspection phase. In this regard, it shows that building inspection should be carried out not only in this newly built school, but also in existing schools."K13

"It is extremely important for school safety. These situations pose a danger. Those responsible do not take this importance into account."K10

"Natural disaster events in schools are very rare in terms of the geographical conditions we are in. In terms of school budgets, we only take precautions against rains with repairs and renovations. We must also strengthen the buildings against earthquakes."K2

Geographical Factors and Levels of Consideration in Schools' Location Selection

Table 4. Levels of consideration of geographical factors in the choice of location of schools

Theme	Participant Feedback	
	N	%
Not considered	20	74
Considered	7	26

74% (n20) of the participants stated that 74% (n20) were not taken into account and 26% were taken into account. In the continuation of this question, participants were asked what these factors were and the answers of the participants were indicated in Table5.

by lightning strikes and severe storms and sudden extreme rains."K17

"Yes, it was taken according to the necessary regulations"K5

"The school I was in was built by the British in 1924, and I can't be sure how seriously these factors were taken at the time"K16

"Yes, considering the old conditions, a school was built in a slightly elevated place away from the wetlands. This is solid in terms of ground and favorable in terms of water flow."K27

"It's definitely not taken."K21

Level of At-Presentness of Individuals in School in

Table 6. Ready-made Levels of Schools

Theme	Participant Feedback	
	N	%
Civil Defense exercises are being held	14	52
Not enough	8	30
In-service trainings should be carried out	2	7
Necessary equipment must be provided	3	11

The opinions of the participants regarding the level of readiness of the schools are carried out civil defense exercises (n14), not enough (n8), in-service trainings should be carried out (n2), necessary equipment should be provided (n3). Participants' statements are as follows;

"I think the level of availableness of school members is quite low in the event of a disaster. In order to increase this, I think it may be an appropriate arrangement for school administrations to cooperate more closely with specialized organizations (civil defense, etc.) and to program the organization of routine training effectives for individuals to improve their skills in this direction."K1

"Civil defense courses against earthquakes are held every year. The gathering area has been designated. To increase ready-made ability; in-service courses can be offered. School budgets can be increased. Lightning can be put (lightning wheel) etc"K7

"Civil defense has already done its duty in schools and has been developing and working on

case of Disaster

"Can you tell us about the level of availability of individuals (managers, teachers, students, other employees, etc.) in your school in case of a disaster? What can be done to increase this level of being present?" was asked to the participants and they were asked to express their opinions on this issue.

them every year"K19

"During my time in this school, there was no exercise for natural disasters, and what to do by identifying scenarios based on various natural disasters should be done in the school."K26

"The trainings of the civil defense agency in schools and their own facilities from time to time have partially increased the level of readiness. Frequently relevant agencies should give training against disasters in order to increase the level."K23

"Even if the Civil Defense does training, it is not enough. There are particularly fire-related equipment shortages in schools and their equipment needs to be maintained."K21

Trainings on School Safety

The responses of the research participants to the question "Do you provide necessary trainings to school components (managers, teachers, students and service personnel) on school safety and exercise training in case of disasters, etc.?" are stated in Table 28.

Table 7. Trainings on school safety

Theme	Participant Feedback	
	N	%
Regulated by Civil Defense	14	52
Training ist nicht organisiert	13	48

As stated in Table 7, 52% of respondents stated that training and exercises were organized by Civil Defense in their schools and 48% (n13) said they did not organize training. The participants' statements are as follows;

"There's a general exercise or briefing by the Civil Defense. However, there is no central information against a wide range of disasters."K15

"We're having meetings on school safety and we're conducting exercises with civil defense.." K22

"We make limited contributions with the support of the Civil Defense Agency."K3

"We cannot provide school components with the necessary training on school safety because we cannot get assistance and support from the relevant authorities."K18

"Yes, the civil defense agency is conducting the necessary exercises."K22

Vorbereitung der Schulinfrastrukturen auf Naturkatastrophen

Table 8. The level at which school infrastructures are ready for natural disasters

Theme	Participant Feedback	
	N	%
Not Ready	27	100

"To what degree are your school's infrastructure systems ready for the risks of possible floods, floods, landslides and lightning strikes?" the question was asked, and all participants (n27) stated that their school's infrastructure was not ready for this. Accordingly, the participants' statements are as follows;

"No risk situations about floods, floods and landslides have been seen in our school to date. It is unprotected from the risk of lightning strikes."K26

"No studies have been done on this issue. Only 2 years ago, we had EMU test for earthquakes if the main building was earthquake resistant. It has been revealed that there is a danger of earthquakes in

the 3rd degree. At the beginning of this year, the ministry took care of it and examined it on the spot. As a result, it was decided to demolish the building and replace it with another building. It was decided that it would be demolished in June by doing ground work. During the summer we were told that the new building would be built and that it would be ready for the new school year. Schools were closed in March with the emergence of the corona virus. I don't know what's going to happen in this situation."K8

"There is zero degree preparation. Every time it rains, there are puddles in the school."K4

"Measures are taken after negative events happen to us."K18

"There is no preparation for floods, floods, landslides and lightning strikes in our school except for the floods and floods around the school."K23

"I'm not sure it's resistant to natural disasters like this because our school building is old, I haven't seen any studies and measurements done in this direction either."K7

*"Our school is vulnerable"*K9

*"While the infrastructure of our school is not available against these risks, the relevant authorities have not conducted any review and our school has not been informed."*K11

Risks Around School

Table 9. What to Do to Risk Around School

Theme	Participant Feedback	
	N	%
To make the necessary measurements	12	45
Regulation of legal regulations	6	22
Expert opinion should be taken	2	7
There is no risky situation	2	7
Nothing is being done	5	19

"Do you know the risks that patients at risk of respiratory and radiation, such as industrial facilities and cell towers, pose to student health if they are around your school? What can be done/done to eliminate these risks?" Statements made by participants on what is being done and what needs to be done to eliminate these risks;

"The industry is not very developed here because our school is a village school. In terms of cell tower signaling, it was found that there was a low level of radiation in and around the school in 2019."K2

"Expert opinions should be taken into account when determining their location."K7

*"In this context, facilities that seriously risk the student health of the school are not available around the school."*K16

"There is a cell tower around our school that is at risk of radiation. As an educator, I know the risks very well, but those concerned ignore this issue. To eliminate these risks, we must inform educators, students, student families in more detail. Together with them, we must create a correct and common consciousness and remove these base stations from the vicinity of schools with the support of NGOs. We should not build new schools in areas where such industrial facilities or cell towers are located."K25

"I know, but there is no work done, in this context, legal regulations need to be solidified."K14

Adability of the Ministry of Education in school location selection

Participants said, "Do you find the Ministry of National Education sufficient for school location

selection? the majority of the schools in the Turkish Republic of Northern Cyprus are pre-1974 structures, so the Ministry of National Education has no role. In the continuation of the question, the answers of the participants who were asked "What

kind of mechanisms can be established in order to make more accurate decisions in terms of geographical factors in the selection of places of schools?" were examined in Table 31.

Table 10. What to do in terms of school geographical factors

Theme	Participant Feedback	
	N	%
Expert opinion should be taken	2	7
Establishment of a committee	20	75
Land problem elimination	5	18

The opinions of the participants in line with the question asked are as follows;

"Unfortunately, the Ministry of National Education is not enough regarding school location selection. The opinions and suggestions of educators, education unions and experts should be taken in order to make more accurate decisions in terms of geographical factors in the choice of location of schools."K22

"As he knows, many school buildings in TRNC are buildings from before 1974. The number of school buildings built after 1974 is quite small. I think the choice of location of these buildings is determined by the locations of public lands and concerns about the political use of these lands, without geographical factors."K1

"I think the ministry of education has chosen school places purely by choice. According to the development of the regions, by coincidence the land is reserved for school construction. In places where there is no land, work was started on the construction of a school there because the primary school in Kyrenia, for example, collapsed in the Piscullu region, was completely empty. School places must be planned in advance in country exchange plans. When leaving these places, it

should be decided by consulting with experts from the Chamber of Architects and Engineers and as a result of the opinions received. In school location selection, it is required to pay attention to flooding or not above the earthquake belt or within the domain and to act by looking at feasibility reports. Again, it is important to note that the selected regions do not pose problems with traffic density."K13

"I think it should be worked in accordance with the decision of a committee to be formed with professional organizations working in this field regarding school location choice."K9

"Even if it is sufficient for new schools, I do not think that geographical factors are taken into account when it comes to the choice of locations in buildings built in old periods. In this sense, old school buildings should be checked and re-arranged in terms of geographical conditions."K17

Considerations for Choosing a School Place

The answers given by the participants to the question "What do you think should be considered in the choice of school place?" are indicated in Table 11.

Table 11. Considerations for choosing a school place

Theme	Participant Feedback	
	N	%
Ground Robustness	9	21
Traffic, Noise Pollution	8	18
Location and Ease of Transportation	6	14
Free from Flood Risk	11	26
Earthquake Feasibility Report	9	21

In the question of considerations for school location selection, participants expressed more than one opinion. Participants have put forward 43 statements on the point of what needs to be done in total. They're like, "I' ground robustness (n9),

traffic, noise pollution (n8), location and ease of transportation (n6), free from flood risk (n11), earthquake feasibility report (n9).

The statements made by the participants regarding the issues that need to be made are as

follows;

"Earthquake feasibility analysis, soil and ground analysis, distance to industrial areas, base station and high voltage lines, traffic conditions should be taken into account and should be accessible to children."K5

"It should be easy to reach for students, the floor on which the building will be built should be smooth, it should be safe in terms of vehicle transportation, it should have an area where large playgrounds can be established."K10

"Absolutely easy to reach and centers that will not intensify traffic flow should be selected. It is important that the student in the area has easy access to the school. Earthquake feasibility study should definitely be done. In case of possible flooding, work should be carried out on the road and evacuation of water and places where serious flooding may take place should not be selected."K24

"There are many considerations for school location selection. Some of them are; distance to flood areas, distance from hazardous waste areas, land suitable, distance to industrial areas, distance to factories, high voltage and distance to cell towers, distance to places where liquor is sold, distance to places such as stream creek bed and school buildings being in the appropriate neighborhood in terms of health, education and transportation etc..."K3

4. Results And Recommendations

4.1. Results

The ability of children to have positive relationships with each other and other adults is directly related to their safety needs. Children mainly want to feel safe at school. The structures of the school buildings meet the personal needs and expectations of children, which makes children feel safer in school. It is important that school buildings and areas are free from possible dangers such as cliffs, swamps, cell towers, high voltage areas and facilities, etc. in the natural surrounding area. School buildings must be suitable for regional climatic conditions.

This research was conducted to determine the levels of school safety based on geographical and human factors of primary school buildings. School is the institution where children should be safe. Therefore, the infrastructure of school buildings, building safety, levels of preparation for natural disasters and disasters, environmental conditions are important. In the study, data were collected by document analysis method based on the opinions of the stakeholders who make up the school

organization, social media news, photos of schools and examining school safety criteria in different countries. The data collected within the scope of the research were found to support each other.

In our education system, the Ministry of Education is the authorized institution responsible for schools. Repair of school buildings, construction of annexes, construction of new schools school environmental regulations are the responsibility of the ministry and its related units. The majority of schools affiliated with the Ministry of National Education are buildings from before 1974 and a small number of schools have been built by the ministry. The floods that occurred after heavy rainfall in the past years also emerged as a result of the research, in which many schools were most damaged by new schools. In line with these findings, it is seen that there are problems as a result of lack of adequate legislation and supervision when building or repairing schools. It is thought that this is another factor because necessary and adequate feasibility studies have not been carried out.

In other findings, the collapse during the construction of a school caused the workers of the constructions to be injured. The importance of school building inspection arises at this point. In addition to clearly and clearly revealing the school construction legislation and sanctions of the relevant ministry, the failure to conduct the necessary inspections are among the leading reasons for the occurrence of these problems. Although there is a share of the irresponsibility of the relevant company in this case, the biggest responsibility belongs to the ministry at the point of supervision. So much so that the necessity of inspections for all necessary repairs and renovations, not in the construction of new school buildings, annexes, classrooms, classrooms, arises.

Although the Turkish Republic of Northern Cyprus has never faced any earthquakes, fires or natural disasters in schools, the old school buildings leave schools vulnerable to all kinds of risk. Research findings suggest that the floors of some schools are slippery and there has been significant damage to school buildings as a result of slippage. Despite the interventions against these schools by the ministry of education, schools are at risk due to their location. Natural disaster feasibility for schools, especially earthquake, geology and ground feasibility studies are required.

It has been come to the conclusion that studies on natural disasters in schools are usually carried out by the Civil Defense Agency. The research, in which the civil defense agency regularly conducts

studies on natural disasters and especially fires in schools every year, was stated by the participants. However, it is clear that this is not enough. The research participants indicated that there are no necessary trainings for managers, teachers, students and service personnel in school safety and any training other than Civil Defense, where there are no courses such as exercise training in case of a disaster, etc.

In addition to the trainings, it is necessary to provide the necessary equipment for the possible natural disasters and disasters of schools and to regularly maintain and repair them. School buildings should be examined in line with possible disasters and disasters and necessary measures should be taken. It is necessary to take preventive measures against fire earthquakes, lightning strikes and strengthen the infrastructures of schools. Schools should be inspected at regular intervals and in case of fires and other disasters, students and teachers should be trained about what to do and even exercises should be conducted.

In the document analysis study conducted within the scope of the research findings, legislation and criteria for safe schools in the world were examined. All elements for school safety are identified and listed in the relevant legislation and reports. It has been determined that when the relevant legislation in the TRNC is examined, it should be detailed and updated. The relevant legislation needs to be revised according to today's environmental problems and risks.

It is seen that the participants have sufficient knowledge about the risks that patients with respiratory and radiation risks such as industrial facilities and base stations carry in terms of student health, if any, around the school. It is stated that there is no clear legislation on this issue.

Do you find the Ministry of National Education sufficient for school location selection? most of the participants expressed the opinion that it was not enough. This reveals that the ministry needs to do more work in this direction. In order to make more accurate decisions in terms of geographical factors in the choice of location of schools, participants emphasized that flooding or earthquake feasibility reports should be made in school location selection and should be acted in this way.

In line with the participatory opinions, it is revealed that an expert team or committee should be formed by the ministry especially for school safety and that decisions should be implemented with the approval of experts.

Participants were asked what are the considerations for school location selection.

Participants expressed the issues to be considered in the form of ground robustness, traffic, noise pollution, location and ease of transportation, earthquake feasibility report away from the risk of flooding.

Participants express the opinion that the necessary analysis and reports should be prepared by experts and carried out by experts in their audits. It is necessary to make plans for the selection criteria of school areas and to consider all environmental problems.

4.2.Recommendations

Recommendations for the results obtained in this part of the research have been established. These suggestions are; it is discussed in two different topics related to the results of the research and for researchers.

4.2.1.Recommendations for Research Results

- It is recommended by the Ministry to prepare feasibility reports for natural disasters and disasters (earthquakes, floods, floods, fires, etc.) of schools.
- It is recommended to organize in-service training for natural disasters and disasters for school components.
- It is recommended to allocate the necessary budget to provide the necessary equipment and equipment to schools.
- It is recommended to revise the relevant legislation and sanctions for the construction and repair of school buildings.
- It is recommended to create a committee or team of experts for school building location selection, renovation and annex construction.
- It is recommended to conduct regular inspections in order to reveal the construction, renovation and requirements of school buildings.
- It is recommended to carry out environmental analyses such as cell towers, proximity of industrial zones, noise pollution, traffic density, public transportation facilities to existing schools and new schools.

5.References

- [1] Atabay, S. (2014), The Effect of Space and Architecture on Success in Education. Url: <http://www.ted.org.tr/TR/Genel/BelgeGoster.aspx?F6E10F8892433CFFA79D6F5E6C1B43FF44EA474750BABA90>, Accessed on: May 12, 2020.
- [2] Başegmez, M, Taşdemir, İ., Gül (2017). Problems and Solution Suggestions in

- Determining Place Selection Criteria of Educational Areas. Chamber of Survey and Cadastre Engineers, 16th Turkey Scientific and Technical Conference, 3-6 May 2017, Ankara.
- [3] Demircan, M., Soydam M., Çetin, S., Gürkan, H., Arabacı, H., Coşkun, M., Türkoğlu, N., Çiçek, İ. (2017) Monthly Trends Flood Disaster in Turkey. Turkey National Geodesy and Geophysics Union of Scientific Congress, 30 May-2 June 2018, Izmir
- [4] Dönmez, B. (2001) The Problem of School Safety and the Role of School Administrators, Educational Administration in Theory and Practice, Winter 2001, 25, 63-74
- [5] Özer, N., & Dönmez, B. (2007). Institutional Factors and Precautions Regarding School Safety. Journal of National Education. 173.
- [6] Helpful, Z., (2009). Lightning Protection: Various Methods, Advantages and Disadvantages. İ.T.Ü. Institute of Science, Master Thesis, Istanbul
- [7] Garipağaoğlu, N. (2002). Air Pollution and Geographical Basis in Turkey, Istanbul: Aryan Printing and publishing.
- [8] Işık, H. (2004). School safety: A conceptual analysis. Journal of National Education, 164, <http://yayim.meb.gov.tr/dergiler/164/isik.htm>
- [9] Kadioğlu, S., & Tellioglu, Z. (1996). Utilization of Energy Resources and Environmental Effects. Turkey's Energy Symposium, pp 55-67, Ankara.
- [10] Karasar, N. (2002). Scientific Research Method: concepts, Principles, Techniques. Ankara: Nobel Publishing.
- [11] Korkanç, S.Y. ve Korkanç, M. (2006), Floods and their Effects on Human Life. ZKÜ Bartın Forestry Faculty Journal, 8 (9).
- [12] Marczyk, G., DeMatteo, D., & Festinger, D. (2005). Essentials of Research Design and Methodology. (A. S. Kaufman, & N. L. Kaufman, Eds.) New Jersey: John Wiley & Sons.
- [13] Menne, B., Pond, K., Noji, EK, Bertollini, R., (1999), Floods and Public Health Consequences, Prevention and Control Measures: Discussion Paper Presented at the UNECE Seminar on Flood Prevention, Berlin, 7-8 October, 1999. UNECE / MP.WAT / SEM.2 / 1999/22, UNECE, Berlin, Germany.
- [14] Uluğ A. (2004). Protection from Disasters and Methods of Reducing the Destructive Energy of Disaster. 1st National Disaster Medicine Congress Book with International Participation, Antalya.
- [15] Wanat, Carolyn I. (1996). Defining Safe Schools. Journal for A Just & Caring Education. 2 (2), p.121-133.
- [16] WHO, (2002), Floods: Climate Change and Adaptation Strategies for Human Health, Report on a WHO Meeting, London, UK, 30 June-2 July, 53 pp.