

HUMANITIES AND SOCIAL SCIENCES

Modern Analysis and Researches

Editor
Sevilay Özer



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PREFACE

The globalizing world has a number of responsibilities as well as its benefits to societies. In the proper fulfillment of these responsibilities and in solving the problems encountered; Social sciences, which include different disciplines such as history, geography, sociology, psychology, international relations, and economics, play a key role. In addition, benefiting from the guidance of social sciences, which also offer alternative ways to make life easier, has become more important day by day in the rapidly changing and developing world.

This book, titled “Humanities and Social Sciences: Modern Analysis and Researches”, includes eight separate chapters from different fields. We would like to thank our chapter authors who contributed to the publication of this book, and our referees, who fulfilled their duties with devotion, and hope that the book will guide the studies to be done from now on.

Prof. Dr. Sevilay ÖZER

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CHAPTER I

INVESTIGATION OF APPROACHES THAT CAN BE USED IN CASES OF DOMESTIC VIOLENCE AGAINST WOMEN

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1. Introduction

Violence is an important problem that can be observed or experienced in every aspect of human life, in childhood, youth or old age. Domestic violence has an important place in this general violence spiral. Domestic violence is defined as behaviors that can be directed from one individual to another in order to force, humiliate, punish, show power, and relieve anger or tension in a group that defines itself as a family (Flury et al., 2010; Holt et al., 2008). Violence usually refers to an action committed by the strong against the weak in the family. People are exposed to violence in their own homes and by one of their family members rather than outsiders and strangers (İkinci, 2014).

Violence is a social phenomenon that has existed in every society and in every period. Violence against women goes back thousands of years (Kara, 2022). The most common form of violence against women is the abuse of a woman by her partner. According to anthropological studies, violence against women can be seen in every society in the world except for some indigenous communities (Kilpatrick, 2004). Although it is known that women face violent behavior directed by their partners, this situation was viewed as a personal problem that needs to be resolved within the family, and this issue did not attract

the attention of scientists sufficiently (Bancroft et al., 2012). In the last 30 years, the increase in sociological research on the frequency of women who have been subjected to domestic violence, the inclusion of domestic violence stories in mass media, the mobilization of public opinion by feminist groups and their organization to protect women's rights have brought attention to this social problem.

The phenomenon of domestic violence against women has been perceived as a hidden situation that should remain within the family for many years due to gender roles and has been kept closed to non-family interventions (Weldon & Htun, 2013). Due to the patriarchal family structure, it was often not possible for women to express their negative experiences due to the dominant view that the authority to determine the rules and make decisions belongs to men. As a result of increasing legal measures and developing social awareness, domestic violence incidents are now perceived as a social problem and thus it is possible to make violence visible. This study aimed to examine the approaches used in interventions that can be carried out within the framework of this phenomenon, as a reflection of the increasing social science research on the phenomenon of domestic violence against women.

2. Violence Against Women

Violence against women is behavior that harms women, has the potential to result in physical, sexual, and psychological harm, causes women to be oppressed in public or in their private lives, and arbitrarily restrict their freedom (Mathews et al., 2008; Palma-Solis et al., 2008). Being a woman can be a risk factor for being exposed to violence. It is stated that pregnancy increases the risk of violence, and that women living separately from their spouses have a higher risk of being exposed to violence than those who have just divorced and are still married (Campbell et al., 2007; Devries et al., 2010). In addition, poverty, low socio-economic status and income level, alcohol or substance addiction, presence of a diagnosis of mental illness, and being exposed to violence as a child are situations that increase the risk of violence (Kim et al., 2007; Rivera et al., 2015; Merchant and Yavuz, 2022).

Although the causes of violence against women vary, it can be stated that violence against women, especially within the family, stems from poor communication between spouses (Yetim & Şahin, 2008). It may be that people who perpetrate violence against women think that the gain they will gain in the face of this violence is more than the cost of violence and they continue

to use violence. In addition, it is stated that diagnostic diseases such as schizophrenia and anti-social personality disorder may be biological factors that cause violence against women (Fazel et al., 2009; Filov, 2019). It is also seen that violent behavior is a learned behavior and it is expressed as a social reason for violence against women (Semahegn & Mengistie, 2015). It is stated that the most important source of learning about violence is the family of the perpetrator. Social-economic pressure factors such as violence being seen as a value judgment shared by the society, poverty, inequality of opportunity and not meeting expectations are among the social causes.

The types of violence against women are defined as physical, sexual, psychological/emotional, economic, and digital violence (Bilgel and Orhan, 2006; Sarışın, 2022; Yetim and Şahin, 2008). Physical violence is the use of brute force as a means of intimidation, intimidation, and sanction. It is the most common and defined type of violence that adults inflict on each other in the family. Physical violence includes situations where physical force is used such as pushing, slapping, biting, trying to strangle, kicking, punching, throwing objects, preventing people from leaving or entering the house by using physical force, threatening with tools such as knives or guns, torture. Sexual violence is the use of sexuality as a threat, a tool of intimidation and control. Some behaviors that indicate the presence of sexual violence; treating women as a sexual object, using sexuality as a method of punishment, openly showing interest in other women and deceiving women, forcing sexual intercourse using brute force or emotional pressure, raping, forcing unwanted sexual positions and forcing them into prostitution. Psychological/emotional violence is the use of emotions and emotional needs as a means of sanction and threat by exploiting them in order to force, humiliate, punish and put pressure on the other party in order to discharge anger. Some behaviors related to psychological/emotional violence; ignoring and underestimating emotional and emotional needs such as love, affection, interest, approval, support, humiliating or being forced to act contrary to religion, race, language, cultural group or past values, institutions, and individuals from whom women can receive material and moral support. It can be listed as humiliating for isolation, controlling, and preventing individuals from meeting with their environment, being fired from the house or threatening to leave the house. Verbal violence, which is included in psychological/emotional violence, is the regular use of words and actions as a means of intimidation, punishment, and control. The most obvious of the behaviors related to verbal violence is to say excessive insults and words at regular intervals with the aim of undermining

the trust in the subjects that the person values and injuring the woman. Using derogatory names, frequently criticizing, and mocking in a negative way are also considered within the scope of verbal violence. Economic violence is the regular use of economic resources and money as a means of sanction, threat, and control. Some behaviors that indicate the existence of economic violence; preventing women from working and earning a regular income, not meeting the economic needs of the family, preventing women from utilizing opportunities that can help them to advance in business life, asking for things that cannot be done with limited pocket money, and making a scene when it does not happen, spending the income earned by the woman from time to time, it is abandoned and the expenses are not taken care of at all. Digital violence is a deliberate and repetitive form of violence that occurs based on an imbalance of power, manifests itself through instant messaging, e-mail, website or mobile phone messages or images, can be experienced many times by the survivor and is constantly repeated by the perpetrator, it is all of the harmful actions and behaviors (Kowalski and Limber, 2007; Patchin and Hinduja, 2006; Slonje et al., 2013). Digital violence, which can be carried out through different devices (computer, mobile phone, tablet, etc.) and channels (SMS, e-mail, social media, games, blogs, etc.), also differs in the way it is seen (Blonde, 2022). The most common types of digital violence are harassment, hate speech, humiliation, impersonation, disclosure, exclusion, cheating, and cyber stalking (Li, 2010).

According to the “World Health Statistics Report” published by the World Health Organization in 2019, one out of every three women and girls aged between 15-49 worldwide experience physical and sexual violence throughout their lives. Mostly, violence experienced in the private sphere is perpetrated by familiar people. This form of violence, also called partner violence, includes femicide, sexual violence, acid attacks and trafficking in women (World Health Organization, 2019). The results of the violence against women research conducted by the European Union Agency for Fundamental Rights show that 33% of women (which corresponds to 62 million women) have been subjected to physical or sexual violence since the age of 15 (FRA, 2014). The data of the United Nations also show that 35% of women worldwide have been subjected to physical and psychological violence by their spouses, lovers, or acquaintances (United Nations, 2018).

It is estimated that every woman in Turkey is exposed to violence (Güleç et al., 2012; Güreşçi, 2021; Kocacık et al., 2007; Yanık et al., 2014). According to the report of the “Domestic Violence Against Women in Turkey” research

conducted by Hacettepe University Institute of Population Studies in 2008, in Turkey, 39% of ever-married or partnering women stated that they were exposed to physical violence by their spouses or intimate partners at any point in their lives, and nearly half (46%) of those who were exposed to violence were hit, kicked, strangled, or stabbed, expressed severe forms of violence such as the use of weapons. In the same report, there are very few cases where sexual violence and physical violence are not experienced together, women have experienced at least one of the physical and sexual violence in any period of their lives, the violence increases with advancing age, and the most specified form of violence is slapping or throwing an object. In addition, it is seen that behaviors aimed at controlling women, such as preventing contact with friends, family, and relatives, suspecting cheating, and interfering with their clothes, are also common (Population Studies Institute, 2008). According to the report of the “Domestic Violence Against Women in Turkey” research conducted by the same institute in 2014, 38% of married women in Turkey have been exposed to physical and/or sexual violence at any point in their lives. This rate does not include women who have been subjected to violence by their partners or lovers in the same house (Population Studies Institute, 2014). It is observed that women are exposed to violence mostly by the men they are in close relationship with, violence against women at young ages has increased compared to the 2008 report, and persistent follow-up has increased to a great extent, and women are exposed to violence. Another study showing that violence against women is at a very high level in Turkey is the tally compiled by Bianet from local and national newspapers and news sites (Bianet, 2021). According to this tally, at least 302 women were killed in 324 days in Turkey between January 1, 2019, and November 20, 2019.

3. Domestic Violence

The family is an open system with its structure nourished by the socio-cultural environment it is in (Duyan, 2010). The family system accepts and adopts the appropriate ones from its environment and affects its environment due to its dynamic structure. Family in terms of systems approach; it is considered as a dynamic whole formed by parts that interact and interact with its environment and with each other. In other words, the family living in the society survives thanks to their interdependence with its members and the large systems outside it. Regarding the family system, it is mentioned that there are four basic elements; family structure, interaction, life cycle and family functions (Canatan & Serpen,

2022). The structure and flexibility of the structural and functional features of the family has the effect of increasing the harmony between family members. Families with a rigid and irregular structure are more likely to encounter problems. Roles in rigid families are rigidly defined and family members are governed by the authority figure in power. The opinions of family members are not consulted in determining the rules. In disordered families, the lack of clear rules often leads to arguments and very few decisions are approved by the family. In flexible and structured families, rules are determined through mutual exchange of views and problems are discussed in a democratic manner. Power is used impartially and carefully. Children's wishes and needs are considered, and an understanding-based discipline method is applied.

The gradual development process from the beginning of marriage to the death of the spouses, in which there are changes in family roles and relationships, each period has its own communication style and conflicts, is called the family life cycle (Canatan & Serpen, 2022). At each stage of the cycle, the family faces various problems and develops by acquiring new skills. A crisis occurs when the family cannot adapt to these new situations. The family life cycle has been conceptualized by classifying it into six basic stages (Zastrow et al., 2022). Each stage takes place with emotional transitions in terms of relationships between family members and individual status changes. Except for exceptional cases, in general, each family completes its life by passing through the following general stages and transferring its values to the next generations (Zastrow & Kirst-Ashman, 2015):

1. Preparing individuals to form their own family, which is an independent union, by separating from the family in which they were born and raised,
2. Transition to double life because of marriage and creation of a new identity against individuality,
3. The birth and upbringing of children,
4. Dealing with the problems and needs of adolescent children struggling for independence,
5. Children's establishing new relationships outside the family, trying to cope with the midlife crisis and health problems with advancing age,
6. Trying to adapt to old age and being aware of death.

Each family, consisting of subsystems such as parents and children, has a function and purpose, and the family is shaped around this purpose. However,

adjustment problems may arise in the family due to negative values transferred from external systems or dysfunctions arising from internal dynamics (Karataş & Kılıçarslan, 2013). Domestic violence is one of the situations that disrupts family dynamics, interactions and family system and renders it dysfunctional. Domestic violence is when a family member physically, psychologically, economically, or sexually dominates or harms another member (Yalçın, 2014). The use of violence damages the physical and mental health of family members by wearing down the marital relationship. It is also important to determine whether the phenomenon of violence in the family is caused by psychological problems or a show of power. Because once it is understood that violence is practiced as a show of power, legal mechanisms should also be activated in addition to mental health and counseling services. In order to explain the relationship between violent behavior and the nature of power and control, different dimensions of responsibility such as blame, denial and humiliation are emphasized. People who frequently use humiliation and denial in their family life deny their violent behavior towards their spouses and claim that they are not responsible for their behavior. Blaming is expressed as an attempt to impose the responsibility of violence on someone or something other than himself. For example, statements such as “If you had not done so, all this would not have happened...” are trying to blame the other party for the violent behavior. At this point, it is important to end the violent behavior and to make the dynamics in the family functional. Having a balance (homeostasis) in the dynamic interaction process of the family system is important in terms of ending violent behaviors. Trying to change an individual who shows violent behavior in the family by isolating them from the family does not change the dynamics of the family relationship and causes the individual to show the violent behaviors that cause problems again. In this framework, approaches that can be used to ensure change, especially in cases of domestic violence against women, gain importance.

4. Approaches That Can Be Used in Cases of Domestic Violence Against Women

4.1. Satir Family Therapy

Family therapy is an intervention approach applied by mental health professionals to increase harmony and functionality in the family by directing their attention to the family (Varghese et al., 2020). The family therapy approach generally focuses on the effects of individuals and interpersonal

relationship patterns within the system. In this therapy, family roles and mutual responsibilities are clarified, and adaptation behaviors are tried to be increased. The therapist pays attention to verbal and nonverbal communications, focusing more on the here and now understanding than family history. Family therapy, which focuses on the relational dimensions of people's problems, is based on psychoanalytic, structural, experiential, strategic and cognitive behavioral therapy-based approaches.

The basis of domestic violence against women is the inability of an individual who does not have sufficient skills in relationship management (mostly this individual is male) to not be able to control his anger (Heise & Kotsadam, 2013). Family therapy studies usually start as a result of the intervention of other members in order to treat the individual who is seen as a problem in the family. From the point of view of our country, where a culture of psychological support is not common, it is very difficult to persuade family members to receive therapy together. Especially in cases of family violence, women apply to relevant places to seek help, and it is often not possible to attract men to the interview environment. At this point, it is important to make home visits for social study in order to motivate the man to participate in the therapy and counseling environment.

Virginia Satir, a humanist and existentialist family therapist, emphasizes the importance of communication in situations that disrupt the family structure, such as violence (Haber, 2002; Satir, 1972). Satir sees communication as the most important factor affecting a person's health and communication with others and stated that when people who are faced with tension feel their self-confidence weakened, they use four different communication patterns to cope with it. These four categories are accusatory, pleading, calculating and disorganized communication styles. All of these communication styles are the result of low self-esteem and value and try to cover up vulnerability. Satir thinks that people who are in harmony with themselves and their environment behave consistently on the basis of moderation (Akça-Koca, 2017). This harmony refers to the harmony between people's body language, words, and tones of voice. Satir stated that people who are in harmony and moderation have strong self-esteem, have open and honest communication because they have nothing to hide, and these people are less likely to show violent behavior. The basic element of Satir's approach is self-esteem and self-worth (Okur, 2020). Self-worth is defined as the level of self-worth that a person gives to himself, regardless of the opinions of others. An individual who values himself and has high self-esteem

values and respects others as well. Those with low self-worth are anxious and insecure. It is possible to say that women who survived domestic violence have been exposed to violence for a long time, and their self-esteem and self-worth have decreased. It is known that the perpetrator resorts to force due to lack of self-confidence and poor communication skills. It is possible for partners who gain insight through family therapy to acquire new communication skills by making structural changes in their selves and family life.

According to Satir, the role of the counselor in family therapy is to be a facilitator and investigative person. The counselor helps family members get to know themselves and understand other members. At the same time, the counselor guides family members to establish open communication by enabling them to discover their potential strengths and abilities and manages the planned change process. Family therapy, which is a planned change process, takes place with the participation of family members and follows some stages. Satir specified three stages for counseling sessions with families (Satir & Baldwin, 1983), and stated that these stages are experienced by repetition and differentiation. In the contact stage, which is stated as the first stage, an atmosphere of hope and trust should be created for the families who come to therapy in pain. In the second stage, the chaos stage, one of the family members enters the risky area and expresses his resentment, pain, and anger. The therapist tries to facilitate the release of emotions. In the third stage, integration takes place. The situation that created the chaos has been partially overcome and the family is in the “new normal” state. At this stage, some terminations may occur in terms of the family’s handling of important issues.

In family therapy, the initial interview begins with an assessment of family members and the problem brought to therapy. During the interview process, trust-based therapeutic communication is established between the therapist and family members. In this way, it is ensured that the functioning of family dynamics and relationships are explored together. It is important to try to establish contact with each family member in the session so that a good therapeutic relationship can be established at the first meeting with family members. The therapist has the responsibility to welcome each family member with openness and warmth, whether through involvement, regulation, or concern. Showing interest in individuals is effective in reducing the anxiety felt by the family. The therapist should not get too caught up in the details of the content so that family members can explain themselves and share their concerns. At the beginning, the process and dynamics of the family should

be tried to be understood by asking “how” questions rather than “what, why, where, when” questions. As a result of the first meeting, goals are determined, and an intervention plan is tried to be created. In the first session, the initiative of family members should be supported, and they should be encouraged to take a participatory role in solving their problems. In this way, it is possible to learn the boundaries, power balances and communication patterns of the family. In particular, the effort of the authority figure, who tries to keep the balance of power within the family, to control other family members can cause different power centers to form, especially in women and children. Therefore, the therapist should be careful about the overt and implicit forms of power in the family and be aware that each family member has power.

Structural family therapists try to evaluate the structure of the family after the first interview. Family structure refers to interaction patterns and the rules and roles that emerge to support these patterns, and the alliances formed because of these rules and roles (Hackney & Cormier, 2008). At this stage, where the genogram or family map is used, the family origins of the individuals, the current family order, and the family structure of the generations are examined (Nazlı, 2021). Considering that one of the main reasons for violence is modeling/learning at the point of examining the family structure, it should not be forgotten that growing up in an environment where violence is exhibited may increase the possibility of using violence in their future lives. According to social learning theory, violence against women can be expressed as a learned response to stress. One can learn about violence by observing it as a way of coping with stress, taking it as a model, witnessing violence between parents or as a direct target of violence. The child, who is exposed to violence in the parental relationship, is identified with the “aggressive father”, who constantly inflicts violence on the mother (Page and İnce, 2008). In order to maintain the integrity of the family, stability and the forces of change need to be balanced. Family structures evolve to balance the forces of stability and change. Stability creates a sense of continuity and helps family members have a sense of continuity and sameness. Adherence to family traditions allows predictive behavior that occurs within the family. For example, in a family where there is a father who abuses his wife and children due to alcohol addiction, the family structure can be predicted. The father drinks alcohol behaves badly towards the mother and the children, the mother takes her children and goes to her own family, the father comes to his senses, apologizes to the mother. He promises never to do it again, the mother returns home and the same events happen again.

Family therapists form hypotheses about the functioning of the family from the first encounter with the family. Afterwards, the therapist starts to place the family's behaviors into conceptual categories using their theoretical knowledge. Based on clinical data, family-specific intervention priorities are determined according to the needs and problems of the family. At this stage, there is no rush to go after the family, and the main problems of the family members are not immediately focused on (Worden, 2013).

4.2. Cognitive Behavioral Therapy

In cases of domestic violence against women, it may be possible to benefit from cognitive behavioral therapy, as changes may be required in the cognitive processes and behaviors of the perpetrator (Habigzang et al., 2018). The underlying assumptions of cognitive behavioral family therapy are that people and families learn all behaviors and maintain behaviors that are reinforced, and that faulty behaviors can be changed by interfering with cognitive processes.

The general aim of cognitive behavioral intervention is to resolve emotional tension and accompanying rigid behavior patterns by correcting or changing errors in thoughts, perceptions, and beliefs. In cognitive-behavioral family therapy, the counselor tries to be a model for the family in evaluating their own relationships by emphasizing the role of trainer. Cognitive behavioral strategies are used to bring about change in the family and the family's own resources are mobilized. Within the scope of cognitive behavioral therapy, it is important to realize the following issues while working with the family where violence against women is experienced (Petersen et al., 2019):

- Clearly defining communication problems and situations that cause violence, in particular,
 - Determining the frequency, duration, dimensions of behaviors that negatively affect family interaction and which functions they prevent,
 - Revealing the factors that maintain, decrease, or increase the violent behavior,
 - Identifying individual and environmental resources that can be used to change violent behavior,
 - Learning about the counseling purposes of family members,
 - Identification of facilitating and hindering factors to achieve the objectives successfully.

The period when families seek support in cases of domestic violence is when avoidance and denial no longer work and they look for new ways of coping with the problem (Alpaydin et al., 2016). For example, while it is a problem for the other members of the family that the adult man does not ask the opinion of the woman and does not take other family members into consideration while deciding for the family, this situation may not be seen as a problem by the man. In the family who apply for professional support with this problem, usually the man accompanies the process because of the woman's problems. The adult male is resistant to change with avoidance and denial. Cognitive behavioral techniques such as reducing resistance, self-observation for awareness, mindfulness meditation, and contingency can be used for family members with resistance by giving individual and family assignments (Gladding, 2017).

In cognitive-behavioral therapy, it is thought that the irrational thinking styles of individuals lie on the basis of emotional and behavioral problems (Andersson et al., 2021). Cognitive processes are the determinant of how one feels and how one behaves. Therapy focuses primarily on the cognitive and behavioral domain, with an emphasis on thinking, decision making, questioning, practice, and re-decision making. Therapy as a learning process can be characterized as a psycho-educational approach in which new skills are created and applied, new ways of thinking are developed, and more effective coping methods are acquired. In order for the therapy process to be effective, the counselor must have some skills such as reflecting the content, reflecting the emotions, summarizing the content and emotions, revealing oneself, confronting and interpreting.

4.3. Schema Therapy

Schema therapy, which integrates cognitive, behavioral, psycho-dynamic, attachment and gestalt model perspectives, can be used in cases of domestic violence against women (Gündoğmuş et al., 2019). The formation of schemas, an important concept in schema therapy, includes four types of early life experiences that can lead to schema acquisition. These are excessive inhibition of needs, experiencing trauma or being a "victim", experiencing too much good, selective internalization, or identification with important people. Another important concept in schema therapy is schema mode. The schema mode is defined as the emotional, cognitive, and behavioral state in which the person is currently. When maladaptive schemas are activated, intense states arise within schema therapy, known as "schema modes". Disruptive modes occur most

often when more than one maladaptive scheme is activated. Four basic mode categories are defined in schema therapy (Keulen-de Vos, 2013):

1. Instinctive child modes (Injured child, Angry child, Impulsive child),
2. Maladaptive coping modes (Avoidable, Protective, Overcompensatory, Submissive),
3. Disruptive parent modes (Punitive parent, Demanding parent),
4. Healthy and functional modes (Happy child, Healthy adult).

The primary and instinctive child modes (Injured child, Angry child, Impulsive child) develop when the basic emotional needs of childhood, such as security, care, and autonomy, are not properly met. These “child modes” are defined by intense emotions such as fear, helplessness, or anger, and by the instinctive reactions a child has. The dysfunctional parent mods (Punitive parent and Demanding parent) form the second category of mods. Dysfunctional parental modes reflect the selective internalization of negative aspects of attachment figures such as parents, teachers, and peers during childhood and adolescence. Maladaptive coping modes are defined by the overuse of unhealthy coping styles. All have the purpose of preventing the person from experiencing pain, anxiety, or fear. The fourth category includes the Healthy and functional modes (Happy child, Healthy adult). The healthy adult mode includes functional thoughts and behaviors and skills necessary for functioning in adult life. Happy child mode is a resource for happy and enjoyable activities, especially on social networks. The presence of maladaptive schemas can lead to the emergence of violence. In order to benefit from schema therapy in cases of domestic violence against women, the following situations of family members or the survivor of violence are examined (Bernstein et al., 2021):

- Identifying the situations that trigger violence, revealing the underlying schemas of these situations, if known,
- Defining the mode of coping with the phenomenon of violence,
- Returning to basic emotions or violence-related child mode,
- Considering the neglected child mode and needs,
- Creating demands that cover the basic needs of both parties in a balanced way,
- Discussion of realistic solution between two healthy adult modes,
- Looking at current results/impacts.

When there is any violence between couples in schema therapy, the therapist should do the following:

- Couples should be asked whether their arguments involve violence.
- It is necessary to determine what the form of violence is and to evaluate the level of the risk of violence.
- Combinations of individual therapy, group therapy (anger groups, etc.), survivor telephone support, couple therapy, or couple-group therapy should be considered as options.
- It is necessary to pay attention to the internal fears of the victim that arise in response to their partner.
- Some partners may have lost their ability to take care of themselves and may need guidance.
- Presence of surrendering coping behaviors in individuals' past should be evaluated.
- Step by step autonomy development should be supported.

The underlying theory in schema therapy studies for perpetrators is that cognition levels, which may include anger, helplessness, and fear, develop from childhood experiences, and affect the expression of anger and physical and behavioral responses (Keulen-de Vos et al., 2016). In the therapy process, the responsibilities of the perpetrator in this situation are emphasized, and it may be possible to understand the underlying causes in this process. Returning to childhood traumatic experiences with methods such as imagination can help to understand the underlying situation and the origins of overcompensation and to practice “adult” assertiveness. Child modes such as the angry child towards the perpetrator, the intimidation behavior of the bully and aggressive overcompensation mode, and the advocacy of the angry sheltered mode should be considered. First, it is possible to remove anger as a basic emotion from its overcompensation shell and apply the “double/empty chair technique”. This technique is used in situations where the client is in conflict. In this technique, the client initiates a communication between their conflicting aspects. Thanks to this communication, a rapprochement and reconciliation takes place between the different and conflicting aspects of the client.

4.4. Solution Focused Therapy

It can be stated that it is necessary to focus on the solution rather than the problem for change in cases of violence (Keynejad et al., 2020). Since the

problem cannot be solved with the mindset that reveals the problem, constantly talking about problems in therapy can create a vicious circle. Family members who are in the position of “victim” because of the problems can start to think more realistically when they are encouraged to participate in the solution. In solution-focused therapy, functional situations are focused, family members contribute to the development of the solution, concrete and achievable goals are determined, the resources and strength of the family are developed (Kütük et al., 2020).

The use of solution-focused therapy in cases of domestic violence against women includes conceptualizing the problem of the family that comes with the problem of violence. In addition, solution-focused therapy states that the following basic principles can guide cases of domestic violence against women (de Shazer et al., 2007; Dinmohammadi et al., 2021; Sklare, 2005):

1. *Do not repair if it is not broken:* During the therapy period, family members should not be compulsorily intervened in any way to increase their awareness level or to gain deeper meanings and structures in their lives. If families have resolved the issue of violence, theories, models, and interventions are irrelevant. If there is no problem, there is no therapy, and this principle is the most inclusive principle of solution-focused therapy.

2. *If it works, do more:* If family members are in a process that helps to eliminate the existing problem of violence, the therapist encourages the family for this behavior. In this way, the family can repeat this success and the solution develops further.

3. *If it doesn't work, do something different:* A solution doesn't matter how good it looks, if it doesn't it's not a solution. Strictly repeating the same things that did not work in the past leads to the emergence and maintenance of new problems. The solution-oriented therapy proposes to approach problems with a flexible cognitive and behavioral perspective and to evaluate and try different ways to solve them. For example, past practices of family members to solve the problem of violence are not considered insignificant, but they are not sufficient and new solutions need to be discovered.

4. *Small steps make a big difference:* When a useful step is taken in solution-focused therapy, which has a minimalist perspective, this step can lead to a larger systemic change. For example, a violent family member may receive anger management training to address this problem.

5. *The solution does not have to be directly related to the problem:* Solutions/targets are determined that explain what will be different when the

problem is solved. The therapist and family members work with past experiences by carefully and thoroughly researching the family's real-life experiences to achieve this goal, identifying times when desired solutions already exist or could potentially exist in the future. Although not related to the reason for coming to therapy, successful problem-solving attempts in the past show clients that they can be successful in solving their current problem, which gives hope for the present and the future.

6. *The language developed for the solution is different from the language required to describe the problem:* Usually the spoken language of the problem is negative, focusing on the past and often on the permanence of the problem. However, the language of the solutions is generally more positive, hopeful, and future-oriented, expressing that the problems will pass.

7. *Problems do not always exist:* There are exceptions that will be used throughout the therapy period, where there were no problems in the past. Small exceptions where there is no problem can cause major changes to occur. Focusing on these periods when there is no problem in the therapy process is a guide for the steps to be taken towards a solution.

8. *It is possible for the future to be created and discussed:* People are not seen as locked into a set of behaviors based on history, social stratum, or a psychological diagnosis, and it is argued from a social constructivist perspective that people are the architects of their own future destinies.

4.5. Feminist Approach

Feminist approach emphasizes that domestic violence can be explained by understanding the stereotypes and the idea that the man who is desired to dominate the society is superior (George & Stith, 2014; McPhail et al., 2007). This approach opposes the perception of masculinity and the binary gender regime, which tries to become dominant in society, and the subordination and devaluation of women by keeping the use of material and symbolic resources. According to the feminist approach, the institution of marriage and family can encourage men to use physical coercion to gain control or gain power over women. Men feel this authoritative position, which is thought to be deserved, and can reinforce it with the social and legal system through cultural or religious teachings.

Feminist approach argues that domestic violence is practiced maintaining control over women (Yodanis, 2004). Domestic violence is also based on the patriarchal belief that it is acceptable for the stronger individual to control

others with various forms of coercive power (Özateş, 2009). Domestic violence includes physical, psychological/emotional, sexual violence, social isolation, and restriction of financial resources to weaken women's autonomy and limit their power in the relationship. Feminist approach argues that social structure supports social inequality that causes male domination to continue and explains domestic violence on the basis of the expectation of gender roles and the historical power imbalance between men and women in the patriarchal system. According to the feminist approach, domestic violence is also an indicator of the persistence of patriarchy. It is possible to say that the feminist approach offers some intervention principles for domestic violence against women. These principles can be expressed as:

- The client-therapist relationship is egalitarian. The therapist is considered a client's friend rather than an expert or authoritative figure.
- The problems and issues of the applicant are evaluated within a socio-political whole.
- Special attention is paid to the evaluation of power relations in the client's life.
- The therapist is open to sharing their own life experiences on the subject.
- The support process emphasizes women's empowerment. This empowerment mediates the process of raising awareness about sexism, gender roles and stereotypes, gender discrimination and inequality, social and historical factors affecting attitudes towards women, and how women should see themselves.
- The client's active participation in the support process is expected and attention is drawn to the client's strengths rather than their deficiencies or problems.
- It is ensured that the applicant takes place in social networks or support groups related to women's rights.

Many women who have survived domestic violence may tend to think that they deserve violence or at least are responsible for the violence they have experienced, thus disregarding, or underestimating the violence they have experienced (Abrunhosa et al., 2021). In a practice that adopts a feminist approach with a woman who has survived domestic violence, at the stage of defining the problems experienced by the woman, the tendency of the woman to blame herself for the situation she is in should be combated, and the woman

should be made aware of her own self-esteem and value. This awareness is also about gaining awareness about gender discrimination and inequality, the existence of stereotypes, prejudices, and value judgments regarding gender.

A therapist who adopts a feminist approach should reflect his relationship with women as an egalitarian relationship, not as a strong or weak one, by reflecting the relationship of trust in his actions and discourses in practices carried out for women who have survived domestic violence. The therapist should provide examples from her own life or experiences throughout the support process, making the victim of violence feel that she is not alone, and should ensure that the sympathy established in the therapist-client relationship is noticed by the victimized woman as well. By drawing attention to the strengths of the woman who has been subjected to violence during the support process, she is encouraged to overcome the situation she is in and to be more conscious of how she should act when faced with such situations, which will reduce the likelihood of encountering similar problems in her future life with the life skills she will gain and her new knowledge on the subject, it is also important. The therapist, who adopts the feminist approach, should also ensure that she communicates with women's organizations and comes together with support groups in order to support women's empowerment in her work with a survivor of domestic violence. Thus, the woman will be able to make a more accurate sense of the situation she is in and feel that she is not alone, and she will be able to move away from her tendency to blame herself or see herself as worthless. After creating this awareness, it is necessary to evaluate the available resources to meet the needs of women who have survived domestic violence, and to develop a plan and practice about their abilities and potentials in order to alleviate the impact of violence on women. Regularly monitoring whether women receive the services they need and whether they benefit from these services is as important as connecting women to services. In this way, the permanence of the change made to enable women who survived domestic violence to face their problems is supported.

Feminist approach accepts that the problem of domestic violence is not only a micro but also a macro problem that needs to be tackled. At the macro level, the aim of mental health professionals is to be instrumental in making social policies and regulations sensitive to women's rights. Mental health professionals are responsible for drawing the attention of the society to this problem by analyzing social problems and policies, creating awareness in this direction, and thus ensuring the development of social resources.

5. Conclusion

Domestic violence against women remains a significant problem in different parts of the world. Although there are various causes of domestic violence against women, the interventions that can be carried out for them also differ. In this study, approaches that can be used in cases of domestic violence against women, especially at the clinical level, were examined. It is thought that it is important for mental health professionals who can work with cases of domestic violence against women to use these approaches. It is thought that it would be beneficial for both individual and public health for mental health professionals working with cases of domestic violence against women to know different therapy methods and approaches and to transfer them to their interventions.

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CHAPTER II

AWARENESS APPROACH MODEL IN SOLVING FORENSIC INCIDENT: THE ROLE OF FIRST RESPONDERS

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1. Introduction

In general and technical terms, law is defined as “a whole consisting of compelling rules with certain characteristics that regulate the relations of people with each other or with the communities they have formed and the relations of these communities with each other” (ÖZTAN, 1998). The supremacy of law is indispensable in terms of the rule of law, the establishment of justice, and the maintenance of public order. The common determining characteristic of all democratic societies is the desire to live in a free and prosperous society. The basis of such a desire is to ensure social order and security within order.

The most important wealth and prestige of nations can generally be defined as a justice system that assimilates universal legal values. It is the primary duty of the public authority to ensure that all forms of personal, interpersonal, and societal actions and processes are known, predictable, protected, and sustainable within the framework of legal rules. Therefore, capturing those who disrupt social relationships within an order through intentional or negligent actions, and swiftly continuing life by compensating for the rights and interests of the victims resulting from these actions, whether from the perpetrators or public resources, is of vital importance. The judicial system is responsible for fulfilling this expectation. In this regard, the fundamental expectation from the judicial system is for justice to operate effectively and efficiently, making decisions quickly and with the highest level of accuracy, compensating for

the harm suffered by the victim, apprehending and punishing the offender, and preserving and maintaining societal harmony and order through public authority.

It is indisputable that such complex, multidimensional systems can only be realized through the will of public authority. Emergency situations are events that are likely to transform into “criminal incidents” after the initial intervention. The determination of suspicious/abnormalities in the resolution of criminal incidents, the preservation of the crime scene, the condition of the scene during the initial intervention, the identification and collection of evidence, the investigation of traces, the establishment of a connection between the suspect/victim and the incident, and the reconstruction of the incident mechanism are vital activities. First responders are the public forces that provide initial intervention to any emergency situation that may potentially evolve into a criminal incident. The awareness created by first responders in the intervention procedures for emergency situations can offer unique opportunities in resolving events that will later transform into criminal incidents.

In this regard, it is highly important to develop an awareness-oriented approach model for First Responders in the resolution of Criminal Incidents, based on a dynamic system understanding.

2. General Definition and Descriptions

2.1 Emergency and Response

The concept of an emergency can be defined as any situation that endangers human health, the safety of life and property, disrupts the peace of the community and poses a vital threat to the natural environment and other living beings (Afet ve Acil Durum Arama ve Kurtarma Birlikleri Yönetmeliği, 2021). (United States Department of Labor, 2022)

It is essential to create a rapid, effective, and efficient intervention plan to mitigate and extinguish the impact of the occurring emergency and minimize potential damages. Emergencies can range in nature and severity from individual incidents such as heart attacks and vehicle accidents to natural disasters, industrial accidents, public health emergencies, and larger-scale events such as terrorism and earthquakes (T.C. Aile Çalışma ve Sosyal Hizmetler Bakanlığı, 2017).

The fundamental characteristic of an emergency is its sudden occurrence. When an emergency situation arises, the purpose of the intervention is to minimize the impact of the emergency and enhance the ability to respond effectively, aiming to save lives and reduce damage. However, it is evident that

without a rapid, effective, and efficient intervention, it would be impossible to achieve the intended goals, and the potential harm caused by the emergency may escalate (Republic of Turkey Ministry of Family, Labor, and Social Services, 2017).

Having a purpose-oriented systematic and conceptual structure is crucial for the successful management of emergencies. In such a systematic structure, it is important to develop emergency response plans in advance, provide training to personnel, conduct drills, and establish communication and reporting lines. On the other hand, the presence of qualified human resources for intervention, necessary technical and technological infrastructure, resources, and capabilities to enhance the success of interventions, the ability to respond rapidly and in a coordinated manner, and continuous monitoring and improvement of the system are of critical importance (World Health Organization, 2016).

2.2 First Response Teams

First response teams typically consist of trained and equipped individuals who provide initial intervention in a typical accident, natural disaster, or any other emergency situation. Their primary objectives are to save lives, protect property, ensure public safety, and extinguish the emergency. “First response teams” are generally classified in international literature as professional units from various fields, including:

- Emergency Medical Services personnel,
- Firefighters,
- Law enforcement (Police, etc.),
- Search and Rescue teams,
- Dispatchers and call center operators,
- Hazardous materials response teams, among others.

The tasks of prominent professional response units in emergency situations are outlined below (Pan American Health Organization, 2019), (DISASTER AND EMERGENCY RESPONSE SERVICES REGULATION, 2013), (Municipal Fire Brigade Regulation, 2006), (Regulation on Prevention of Major Industrial Accidents and Reduction of Their Effects, 2019).

2.2.1 Emergency Medical Services Personnel

Emergency Medical Services (EMS) generally encompasses pre-hospital services. These teams, upon receiving an emergency call, promptly reach

the incident scene with a well-equipped transportation vehicle required for emergency medical services. They assess the patient at the scene, stabilize them with minimal time spent, and aim to transfer them to a well-equipped emergency department for further medical assistance, following the principle of “scoop and run” if necessary (Şimşek, Günaydin, and Gündüz, 2019).

2.2.2 Fire Services and Firefighters

In modern times, fire services are classified under three main categories: prevention, inspection, and suppression. Fire services are responsible organizations that provide emergency response to fires and other hazardous situations, oversee fire safety measures on behalf of the public, and ensure the implementation of fire safety precautions. Firefighters are the professionals who work within these units (Municipal Fire Brigade Regulation, 2006), (Disaster and Emergency Management Presidency, 2022), (Regulation on Prevention of Major Industrial Accidents and Reduction of Their Effects, 2019).

Fire services have gained even greater importance worldwide due to the increase in urbanization. The existence of densely populated areas, mixed urban developments, high-risk industrial facilities, the high risks associated with chemicals used in production for the environment and human health, industrial waste and its storage, among other factors, have made fire services more complex. The security and sustainability of critical infrastructure and facilities in cities are of utmost importance for the safety of human lives and properties. These and other essential expectations have diversified the services expected from fire services, making the presence of qualified human resources even more crucial. It has also led to an increased variety of teams and equipment within fire departments (Municipal Fire Brigade Regulation, 2006).

In today’s world, fire services have taken on important tasks beyond prevention, inspection, and firefighting services. They are also responsible for tasks such as flood response, traffic accidents, rescuing non-human beings, search and rescue operations in forensic cases, handling hazardous materials, conducting community awareness programs and drills. In addition, they have become an integral part of emergency operations such as debris removal and search and rescue in disasters of almost any kind (Regulation on the Prevention of Major Industrial Accidents and Mitigation of their Effects, 2019).

2.2.3. Law Enforcement Forces

Law enforcement forces such as the police and gendarmerie play a crucial role in ensuring public safety and security, preventing crimes, and conducting

investigations. They carry out their duties within their respective jurisdictions and areas of expertise. In general, their shared responsibilities in emergency situations include the following (Gendarmerie Organization, Duties and Powers Law, 1983) (Police Authority and Jurisdiction Law, 1934) (Dobbins, 2007), (OSCE POLICE, 2023).

1. **Crime Prevention:** Law enforcement forces maintain public order and control in public spaces, using visible or covert physical and technological methods. They actively work to prevent crime by implementing proactive strategies. They also monitor suspicious activities of various kinds and provide an immediate response when necessary, instilling confidence in the community. They prioritize deep collaboration and engagement with the public.

2. **Ensuring Public Order:** Law enforcement forces are responsible for maintaining public order during various activities, demonstrations, and gatherings in communal living areas. Their duty is to maintain order, prevent violence, and prevent damage to property.

3. **Law Enforcement Duties:** One of the primary responsibilities of law enforcement forces is to enforce the law. Law enforcement officers have the authority to apprehend individuals suspected of committing crimes, conduct investigations, gather evidence, and, if necessary, prepare reports and refer these individuals to the judiciary. They work to apprehend criminals and deliver them to justice.

4. **Emergency Response:** Law enforcement forces are among the first responders in emergency situations. They provide assistance and support to other first responder teams during accidents, natural disasters, and other crises. They ensure the safety of first responders, secure the perimeter of the incident site, direct traffic, facilitate first aid activities, and ensure prompt and effective coordination with other first responders.

5. **Traffic Control and Enforcement:** Law enforcement forces fulfill their obligations under traffic laws to enhance road safety. They monitor traffic flow, conduct traffic stops, enforce legal regulations for traffic violations, and investigate accidents.

6. **Criminal Investigations:** Law enforcement forces are responsible for conducting criminal investigations in collaboration with judicial authorities. They gather evidence, interview witnesses and suspects, track leads, access personal information, and analyze crime scenes. They are obliged to determine the intent of individuals involved in criminal activities, identify perpetrators, and report them to the judicial authorities.

7. Establishment of Specialized Units: Law enforcement forces establish specialized units to deal with specific types of crimes or situations, such as high-risk operations units or cybercrime units for investigating online crimes. These units are designed to overcome challenges associated with particular types of crimes and ensure effective response and investigation.

2.2.4. Search and Rescue Teams

In emergency situations, emergency response, and particularly in disaster management, Search and Rescue teams play a crucial role. The mission of these teams is to locate, provide necessary medical support, and rescue individuals who are missing, injured, or trapped in emergency situations. Search and Rescue teams are typically specialized emergency response teams in search and rescue operations. Fire departments, healthcare organizations, and law enforcement agencies establish search and rescue teams within their own organizations, consisting of trained professionals. Additionally, there are also search and rescue teams operating on the principle of volunteerism, who have received training from authorized institutions and organizations in the field. (Disaster and Emergency Search and Rescue Units Regulation, 2021), (FEMA, 2020).

2.2.5. Emergency Call Center and Emergency Call Center Operators

Emergency call center operators play a crucial role in emergency situations. Although their responsibilities may vary depending on the specific context, they are assigned with the following critical tasks (Emergency Call Centers Establishment, Duties and Operation Regulation, 2014), (European Emergency Number Association, 2020).

1. Call Reception and Evaluation: The emergency call center operator receives emergency calls and reports coming through designated emergency helplines or specific communication channels. They gather basic information about the incident, determine its urgency, perform caller analysis, and conduct other procedural critical analyses (Emergency Call Centers Establishment, Duties and Operation Regulation, 2014).

2. Resource Management and Dispatch: Based on their evaluation, the operator formulates the appropriate response to the reported incident and directs and coordinates relevant emergency response teams to the scene of the incident.

3. Communicates with Emergency Response Teams: Dispatchers maintain constant communication with emergency response teams such as police officers,

firefighters, or medical teams. They share vital information related to the incident with other teams, including the location and details of the scene, the nature of the emergency, and updates regarding the reported incident. Additionally, emergency call center operators provide guidance and support to the on-site response teams, ensuring coordinated and efficient emergency interventions. They operate and manage communication systems such as radio networks, computer-aided dispatch software, or other specialized platforms. These systems are used to establish communication with emergency response teams, convey important information, and monitor the status and location of resources. The use of these systems enables effective communication with emergency response teams and facilitates the transmission of critical information (Emergency Call Centers Establishment, Duties and Operation Regulation, 2014).

4. Tracks and Reports the Informant, the Report, and the Incident: The emergency call center operator observes the entire flow of the incident. They collect other reports received from the scene and gather information from first responders at each stage of the intervention. If necessary, they ensure the dispatch of logistics, reinforcements, or specialized teams to the incident site (Regulation on the Establishment, Responsibilities, and Operation of Emergency Call Centers, 2014).

2.2.6. Hazardous Material Response Teams

Hazardous material response teams are specialized intervention units trained to handle incidents involving hazardous substances and mitigate damage. Their primary task is to ensure public safety, protect the environment, and safeguard human lives and property by safely managing and reducing the risks associated with hazardous materials (Municipal Fire Department Regulation, 2006), (Regulation on the Prevention of Major Industrial Accidents and Mitigation of Their Effects, 2019), (Regulation on Disaster and Emergency Response Services, 2013), (ProSCon, 2023).

When performing their duties, hazardous material response teams:

1. Hazards: Teams responding to incidents involving hazardous materials gather information about the nature, potential risks, behavior, and the most appropriate intervention methods by assessing the type, characteristics, impact area, and quantity of the hazardous substance. They gather information about potential threats posed by the hazardous material to human health, the environment, or infrastructure (Municipal Fire Department Regulation, 2006),

(Regulation on the Prevention of Major Industrial Accidents and Mitigation of Their Effects, 2019), (OSHA, 2023).

2. Restriction and Control: Hazardous material response teams establish control zones around the incident site to limit exposure and prevent the spread of hazardous materials to the environment. They implement appropriate restriction and disposal techniques (Municipal Fire Department Regulation, 2006), (OSHA, 2023), (Regulation on the Prevention of Major Industrial Accidents and Mitigation of Their Effects, 2019).

3. Reduction and Cleanup: Hazardous material response teams aim to reduce the immediate risks posed by hazardous materials. They utilize specialized teams and equipment to neutralize, stabilize, or safely remove the hazardous substances (Municipal Fire Department Regulation, 2006), (Regulation on the Prevention of Major Industrial Accidents and Mitigation of Their Effects, 2019).

4. Personal Protective Equipment: Hazardous material response teams ensure that individuals responding to the incident and those within the affected area minimize their exposure to hazardous materials by wearing appropriate personal protective equipment such as gloves, respiratory protection, and eye protection (Regulation on the Prevention of Major Industrial Accidents and Mitigation of Their Effects, 2019).

5. Decontamination: Hazardous material response teams perform decontamination procedures in a thorough manner to remove hazardous materials from the response teams, equipment, and affected individuals after the incident has been brought under control and the scene has been secured. Decontamination protocols may involve removing contaminated clothing, taking showers with specialized solutions, and proper disposal of contaminated materials (Municipal Fire Department Regulation, 2006), (Regulation on the Prevention of Major Industrial Accidents and Mitigation of Their Effects, 2019).

6. Coordination and Collaboration: Hazardous material response teams work closely with other emergency response agencies such as fire departments, police, emergency units, and environmental agencies. They establish a unified command structure, share information, and collaborate to provide a coordinated and effective response.

7. Public Safety Education: Hazardous material response teams are responsible for informing and guiding individuals, communities, organizations, and institutions regarding the safe handling, storage, and transportation of hazardous materials. They provide education and training on these matters, organize social assistance programs, workshops, or training sessions to increase awareness and promote responsible practices (OSHA, 2023).

2.3 Concept of Criminal Incidents

Social order is maintained by the existence of a set of rules that individuals must adhere to in their relationships with each other and society, ensuring the continuity of social life in an orderly manner. All of this process is carried out through the organs established within the framework of the authority granted to the public authority by social contracts and is also safeguarded by the public authority (ATA Private Investigation, 2023).

In both interpersonal and societal interactions, violations of legal rules due to negligence or intentional actions are frequently encountered under normal circumstances. These acts create consequences that require compensation for the rights of the victims and result in criminal sanctions and legal responsibilities/liabilities for the perpetrators (AYDIN, SÜTKEN, et al., 2018).

Events that can have legal consequences within the nature and dynamics of social relationships, despite the existence of certain compelling rules regulating social relations, are referred to as “criminal incidents” (Houck, 2007).

Criminal incidents are highly complex events. Ultimately, if an event gives rise to rights that need to be compensated for the victims and imposes criminal sanctions and legal responsibilities/liabilities for the perpetrators, it is considered a criminal incident (AYDIN, SÜTKEN, et al., 2018).

2.3.1 Concept of Rights

The concept of the “Rule of Law” is recognized in our Constitution as an integral part of democracy. Accordingly, a rule of law state is defined as a state that “respects human rights, establishes a just legal order that protects rights, and considers itself obligated to maintain it, with all actions and transactions subject to judicial review” (Hukuk Dershanesi, 2023).

Society, individuals, social relationships, humanity, and all living beings have essential rights and freedoms that are indispensable, inviolable, and cannot be violated by any individual or institution. Anything that facilitates human life and relates to life should be conducted in harmony with the ecosystem, within the framework of basic requirements established for the safety of life and property, and based on defined minimum standards (Dutertre, 2003).

For the secure and fair continuation of life and the right to life, the entire dynamic process/relationships are defined within a secure space established by legal regulations and mutual responsibilities. The concept of “Rights” arises from harmful behavior by offenders that violates social contracts and entails sanctions.

The emergence, modification, or cessation of rights occur as a result of:

“Legal Events” to which the legal order itself attaches legal consequences,

“Legal acts” arising from human will,

“Legal transactions” resulting from the declaration of will by one or more persons within the limits set by the legal order, (AYDIN, SÜTKEN, et al., 2018), (HÜSNÜ SEFA ERYILDIZ, 2019).

The types of rights are as follows:

“Rights Arising from Private Law,” which are guaranteed by the Constitution and include personal rights, fundamental rights and freedoms, and the right to property.

“Rights Arising from Public Law,” which derive their main source from the Constitution and include citizenship rights, the right to vote and be elected, the right to establish unions, the right to petition, and the right to access information.

These rights can be classified under two main headings: (AYDIN, SÜTKEN, et al., 2018) (HÜSNÜ SEFA ERYILDIZ, 2019).

3. Elements of Crime

In a legal sense, crime refers to acts that are sanctioned with punishment or security measures by criminal laws. For a crime to occur, certain elements must be present. Although there is still debate in legal doctrine, four accepted elements of crime can be identified. These are:

“Typicity,” which refers to the act conforming to the definition of the offense in the law, meaning that the material element of the crime is explicitly defined in the law.

“Material elements,” which indicate the presence of objectively qualified elements shaping the unlawfulness, seeking a causal relationship between the act and its consequences, and defining qualified relationships between the perpetrator, victim, and subject matter of the crime.

“Mental element,” which represents the subjective connection between the committed act and the person, revealing whether the act was committed intentionally or negligently.

“Illegality,” which signifies the contradiction and conflict of the committed act, which is in accordance with the definition in the law, with the legal order.

These elements are emphasized in the discussion (AYDIN, SÜTKEN, et al., 2018), (ALACAKAPTAN, 1975), (DEMİRKALE, ÖZTÜRK, & GÜN, 2022).

3.1 Elements of Crime Investigation

There are several fundamental elements that are highly important in the effective and efficient investigation of criminal incidents. These elements ensure the secure collection of information, documents, evidence, observations, and statements that will be utilized by the investigator in resolving the incident. They also assist in analyzing physical evidence and establishing a sound connection between the act and the perpetrator (DEMİRKALE, ÖZTÜRK, & GÜN, 2022).

The fundamental elements of crime investigation include:

- Effective and efficient management of the crime scene,
- A comprehensive collection of evidence,
- Conducting forensic analyses,
- Obtaining witness testimonies and statements,
- Identification of suspects,
- Analysis of data and information,
- Collaboration and consultation when necessary in the investigation process.

These elements form the basis of a comprehensive and systematic crime investigation, guiding investigators in gathering, analyzing, and interpreting evidence to determine how the criminal incident occurred and, if applicable, bring the perpetrators to justice (CU/ONLINE, 2023), (ENFSI, 2021), (W. JERRY CHISUM, 2011), (Shaler, 2012) (Ross M. Gardner, 2021).

3.2. Role of Evidence in Resolving Criminal Incidents

Evidence plays a crucial role in investigations related to criminal incidents, as it aids in identifying the perpetrator and understanding the motive behind the incident. Evidence provides investigators with unique and verifiable information that helps uncover the truth, support or refute hypotheses established during the analysis of the incident, draw conclusions about a crime or incident, reconstruct the event, and make temporal inferences about its development. Evidence constitutes invaluable traces that significantly contribute to determining “what actually happened,” which forms the essence of forensic investigation (Han Kriminal Danışmanlık, 2023), (Richard Wortley, 2019), (Adam B. Hall, 2020).

Physical evidence refers to any material analyzed in the laboratory, while the analysis of data and information related to the criminal incident encompasses

all types of information, observations, witness testimonies, and statements that can be collected from the crime scene. This process requires careful attention and awareness.

Evidence and traces, with their objective information, play a critical role in formulating investigation hypotheses, analyzing the accuracy of hypotheses, uncovering the truth within the justice system, identifying perpetrators, and ensuring a fair trial. Therefore, they are vital elements in forensic investigations (Derek J. Paulsen, 2009).

4. Possible Contributions of First Response Teams to Resolving Criminal Incidents

From the moment first response teams receive an emergency notification, they begin their duties in an organized manner. The primary task of first response teams is to “minimize damage at the crime scene, rescue individuals trapped in the incident, evacuate the scene, provide emergency medical services to the injured, secure the crime scene, prevent unauthorized entry, and ensure that life can resume as soon as possible by extinguishing the emergency” (Beitia, 2013), (Mehmet Murat KÖSEM, 2022).

However, another crucial but often overlooked duty of first response teams within the criminal justice system is to identify and report all information, documents, statements, witness testimonies, and evidence related to the resolution of the incident, while maintaining awareness during their intervention.

Below are some key awareness points that can be considered in the resolution of a criminal incident from the perspective of emergency response teams (Beitia, 2013), (Mehmet Murat KÖSEM, 2022).

4.1. From the Perspective of Emergency Call Center Operators

Evaluate the caller’s tone of voice, manner of reporting, and accent.

Assess the relationship between the reported incident and the daily security risks.

Evaluate the authenticity of the report and assess the possibility of it being a “hoax report” or a “redirecting report,” and communicate with the law enforcement.

Determine if there are multiple reports of the same nature simultaneously.

Determine the location of the caller, establish a connection with the crime scene, and evaluate the relationship.

Evaluate and report cases such as suspicious reports, confessions, false intervention reports, false witness reports related to the incident to the law enforcement.

Assess and connect missing or trapped individuals with the first responders in the field, as they are likely to be the first point of contact (Mehmet Murat KÖSEM, 2022), (Adam B. Hall, 2020).

4.2. From the Perspective of Emergency Medical Teams

Evaluate the information obtained from the injured individuals during the intervention, assess their initial statements, and provide immediate information to the first responders if necessary.

Gather information from the injured individuals about the incident and evaluate their sincere confessions.

Assess the nature of the injuries sustained by the victims and establish potential connections to the incident.

Identify and preserve any abnormality such as chemical residues, accelerants, or stains on the patient's clothing.

Preserve evidence such as glass fragments or metal pieces extracted from the bodies of the injured individuals (Adam B. Hall, 2020).

4.3. From the Perspective of Fire and HAZMAT Teams

Identify any indifferent behavior, delaying or obstructive actions of individual firefighters, or actions that hinder group behavior.

Determine the presence of obstacles at the incident scene, what they are, and how they impede operations.

Ensure the documentation and interpretation of observations.

Establish contact with individuals at the scene such as spectators, property owners, witnesses, or neighbors, and determine the information and findings obtained from them.

Conduct accelerant searches and determine the fire mechanism if the fire has started at multiple points.

Identify abnormalities such as open windows, broken window glass, signs of forced entry, broken hinges, windows nailed shut, excessive locks on doors and windows.

Identify abnormal aspects in the intervened fire, such as the concentration of the fire load in one area, empty refrigerator and wardrobe, absence of kitchen utensils, abnormal disorder, unusual fire triangle mechanisms.

Facilitate the entry of firefighters into the scene with minimal damage, ensuring the preservation of the natural state of the incident scene as much as possible, and documenting the entry points.

Prevent excessive firefighting activities that could cause the loss of evidence at the scene or identify the presence of such a situation and the firefighter responsible for it.

Document any abnormal colored flames or the presence of unusual chemicals at the scene.

Identify suspicious situations such as an open window in cold weather.

Determine the locations of fire extinguishers, whether they were used in the initial response, the presence of fire hydrants, their functionality, the presence and functionality of fire alarms, activation of the sprinkler system and gas fire suppression system, and the functionality of system components.

Determine the condition of electrical devices and their connection to power sources.

Detect post-incident structural changes.

Determine the unusual spreading mechanism, speed, and route of the fire.

Identify cigarette butts, lighters, candles, and materials such as waste bins and containers that may contain accelerants at the incident scene.

Identify shoe and tire tracks in indoor and outdoor areas.

Determine the waste collection areas outside the building, their distance from the building, and the potential contribution of items that can be thrown from balconies or windows to the fire.

Identify empty beverage cans for screening of sedative substances.

Determine the presence of electricity and whether the power is on or off at the incident scene.

Make determinations regarding the use of illegal electricity at the scene.

4.4. For All Teams

Identify unauthorized entry into the incident scene.

Detect traps and secondary explosives found at the scene.

Be aware of biological terrorism, chemical gas attacks, and toxic chemicals.

During intervention, identify traces at the incident scene considering the motivations, behaviors, and methods of current terrorist focuses.

Identify suspicious pedestrian or vehicle traffic while approaching the incident scene.

Identify abnormal human behaviors and the identities of individuals exhibiting such behavior.

Detect abnormal animal behavior or the presence of deceased animals.

Identify deviations from normal taxi movements.

Evaluate individuals who want to contribute to the resolution of the incident for signs of deception, informant behavior, or the possibility of being directed towards false reporting.

Evaluate and identify individuals who make excessive interpretations or accusations about the incident or provide overly confident statements.

Identify individuals who incite the community, encourage group actions, or provoke movements.

Evaluate and identify the connections between suspicious individuals and the location/person where the incident occurred.

Conduct evidence search near the incident scene, especially for discarded or hidden clothing and evidence that may be related to the incident.

Identify evidence such as containers for carrying accelerants, weapons, human body, drugs, medications, or laboratory materials that have been discarded or related to arson near the incident scene.

Identify individuals exhibiting suspicious behaviors such as excessive enthusiasm, anger, unruliness, excessive helpfulness, or theft-like behaviors.

Select suspicious individuals and behaviors from within a crowd.

Determine the differences in clothing, appearance, and behavior between the time of the incident and the individuals/observers present.

Identify individuals who quickly leave the incident scene, wait for an extended period of time in a vehicle, keep their vehicle running, observe the surroundings, drive in circles at the incident scene, engage in suspicious movements, or exhibit hesitant self-talk.

Identify individuals who are inappropriately dressed for the weather and environmental conditions, wearing bulky or thick clothing, and displaying excessive movement or high anxiety.

Identify activities that jeopardize the integrity of the incident scene and the collection of evidence.

Gather information and intelligence from individuals at the incident scene and conversations between individuals.

Collect potential evidence elements such as photographs and videos from the incident scene during the intervention.

This can be identified according to the U.S. Department of Justice (2000).

5. Emergency Response System and Operation in Turkey

The public authority immediately intervenes in any situation/event that requires emergency response of any kind, which disrupts or interrupts the normal life and activities of the entire society or certain segments, disrupts social order, jeopardizes public order and security, personal health and safety, public health, water resources and wetlands, and poses immediate threats including damage to property (112 Emergency Call Centers Establishment, Duties and Operation Regulation, 2014).

Every incident reported to the emergency call center system established by the public authority is considered as a criminal incident until proven otherwise and requires appropriate action accordingly.

In the event of violation of the right to life, property security, and rights, laws, and interests in their relationships, as well as the disruption of social order, the public authority promptly takes action by “taking charge” of all extraordinary incidents to restore order and authority and ensure the swift return to normalcy in the flow of life.

The public authority intervenes in incidents through the following institutions and organizations that operate on a 24/7 basis:

- a. Law enforcement force
- b. Fire department
- c. Emergency health services
- d. Disaster and emergency management organization
- e. Other central/local authorities, depending on the nature of the incident, mobilize their capabilities and expertise. (112 Emergency Call Centers Establishment, Duties, and Operation Regulation, 2014) (Disaster and Emergency Response Services Regulation, 2013)

The primary objectives here are as follows:

- a. Extinguishing the incident.
- b. Preserving the right to life.
- c. Providing health and rescue services.
- d. Investigating the causes of the incident in a systematic manner.
- e. Identifying any responsible parties.
- f. Referring the responsible parties to the judicial system.
- g. Ensuring the implementation of the decisions made by the justice system.

These objectives emerge from the context.

The institutions related to emergency situations in our country's system are determined as follows:

Provincial gendarmerie command

Provincial police department

Coast guard regional or group command

Metropolitan municipality fire department

Fire departments or units of provincial, district, and municipal administrations

Forest regional or operational directorate

Nature conservation and national parks regional or branch directorate

Provincial health directorate

Provincial disaster and emergency management directorate

Other units to be assigned by governor's decision

(112 Emergency Call Centers Establishment, Duties, and Operation Regulation, 2014) (Disaster and Emergency Response Services Regulation, 2013) (Municipal Fire Department Regulation, 2006).

These units are coordinated by investment monitoring and coordination directorates established under the governorship in provinces with metropolitan municipalities throughout the country. In other provinces, they are coordinated by emergency call centers established within the governorships (Disaster and Emergency Response Services Regulation, 2013) (112 Emergency Call Centers Establishment, Duties, and Operation Regulation, 2014).

6. Approach of Public Authority to Criminal Incidents in Turkey

Every incident is referred to as a "criminal incident" or simply an "forensic incident" until proven otherwise by the public authority (Houck, 2007).

The fundamental purposes and duties of the state are defined in the fifth article of the Constitution of the Republic of Turkey as follows: "To protect the independence and integrity of the Turkish nation, the indivisibility of the country, the Republic, and democracy; to ensure the welfare, peace, and happiness of individuals and society; to remove political, economic, and social barriers that restrict the basic rights and freedoms of individuals in a manner incompatible with the principles of a social state governed by the rule of law and justice; and to strive to create the necessary conditions for the material and spiritual development of individuals" (Constitution of the Republic of Turkey, 1982).

The state carries out its fundamental purposes and duties based on the foundations outlined in the Constitution and within the framework of laws,

ensuring public order through law enforcement agencies. On behalf of the public authority, “Law Enforcement Agencies” apprehend individuals who disrupt public order, jeopardize the welfare, peace, and happiness of individuals and society, and threaten the fundamental rights and freedoms of individuals, delivering them to the judicial system.

Criminal law enforcement collects all information and data from the scene of the incident and related individuals that contribute to determining the elements of the crime. They conduct investigations, analyze material evidence, and prepare a report (fezleke) related to the incident, which they submit to the public prosecutors.

Public prosecutors evaluate the report and, if necessary, conduct additional investigations within their jurisdiction. They identify the parties involved, determine the elements of the crime, and, in order to protect the rights of the victims arising from public law, prepare an indictment to be presented to the criminal courts, seeking the punishment of the responsible parties within the justice system.

Claims related to “Rights Arising from Private Law,” which are not the subject of criminal proceedings, are brought before the courts within this branch of law. These courts establish causality and fault between the responsible parties/parties involved in the incident and compensate the victim for their losses.

The process of the public authority’s intervention in incidents in our country is presented in Figure 1.

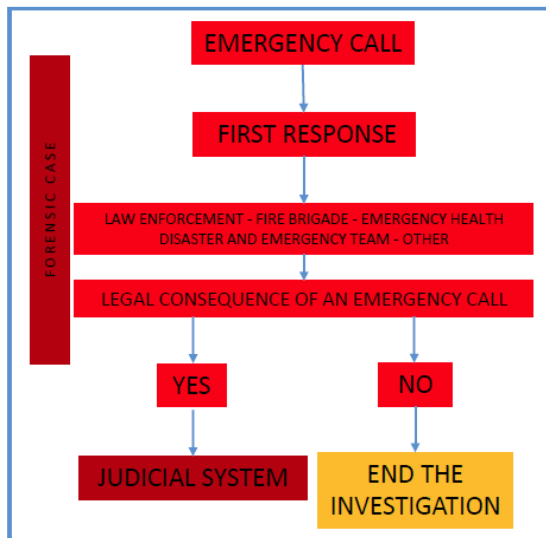


Figure 1. Public Authority’s Intervention Process in Emergency Situations in Turkey

In this case, the duties assigned to the public authority in “criminal incidents” are listed under the main headings below.

Receiving the incident report

Dispatching relevant units based on the nature of the incident

Providing initial intervention to extinguish the incident

Protecting the lives and property of the community and individuals

Identifying the causes of the incident and, if applicable, the perpetrators, and submitting a report (fezleke) prepared in this regard to the judicial authorities (AYDINLIOĞLU, 2013), (Adalet Bakanlığı, 2009), (BAŞARAN, 2014), (KOZMA, et al., 2014), (YURTCAN, 2002).

The resolution of “Criminal Incidents” that are transferred to the judicial system depends on the successful analysis of the causal factors of the incidents in all its aspects.

Each task/process mentioned above can only be accomplished with the resources and capabilities provided by the public authority. The success of this system is based on the power and reputation of the state, as well as the fundamental aspects of societal peace, order, and security.

The identification of all elements of incidents targeting the rights and interests of individuals or society involves the following factors, depending on the interdependencies and complexity of the incident etiology (Houck, 2007):

Time-consuming

Difficult, comprehensive, and having a complex relational matrix

High material burden

Requiring qualified human resources

Carried out through independent/impartial oversight

Requiring independent/impartial and well-trained human resources

Requiring scientific, technical, and technological infrastructure, resources, and capabilities

Designing and concluding these factors with the same meticulousness for all incidents, rather than just a single incident, can be a measure of systemic success. Therefore, an integrated approach modeled with a “Dynamic and Learning System Approach” is the key to success in resolving criminal incidents.

7. Proposal for a Mindful Approach Model in Criminal Incidents

Defining emergency management is quite challenging due to its broad scope, where almost every situation can be considered an emergency to some extent. Every criminal incident that causes an emergency leaves traces at the

crime scene. The purpose of investigating criminal incidents is to interpret the facts accurately, reconstruct the events, and understand what happened. The fragility of physical evidence and evidence reliant on observation and perception, as well as the challenges in maintaining their reliability and physical integrity, are of critical importance in resolving criminal incidents. Ensuring their preservation and recognition through mindfulness is vital.

Within the framework of “Forensic Sciences,” it is possible to identify three important pillars for successful and effective “incident analysis” (Houck, 2007):

1. Awareness of the process from the initial report of the incident to its resolution,

- 1a. Awareness of the process by the “First Responders” involved in the initial intervention,

- 1b. Awareness of the process by the “Crime Scene Investigation Teams,”

2. Awareness of the effectiveness of law enforcement

- 2a. Awareness of the process by the law enforcement authorities of “Forensic Police” and “Administrative Police,”

3. Awareness of the process by the prosecutor’s office.

In this regard, it is the author’s belief that first responders, who have received basic awareness training in resolving criminal incidents and have appropriate legal education, should independently prepare reports that contribute to the investigation process, taking into account their awareness following each emergency intervention. These reports should be prepared in advance to serve the purpose and be submitted to the forensic police. During the final preparation of the case report by the forensic police, the inclusion of these reports in the process management will enhance the quality, reliability of the judicial mechanism, and coordination among the teams. This, in turn, will lead to positive development and deepening of the system as a whole (Figure 2).

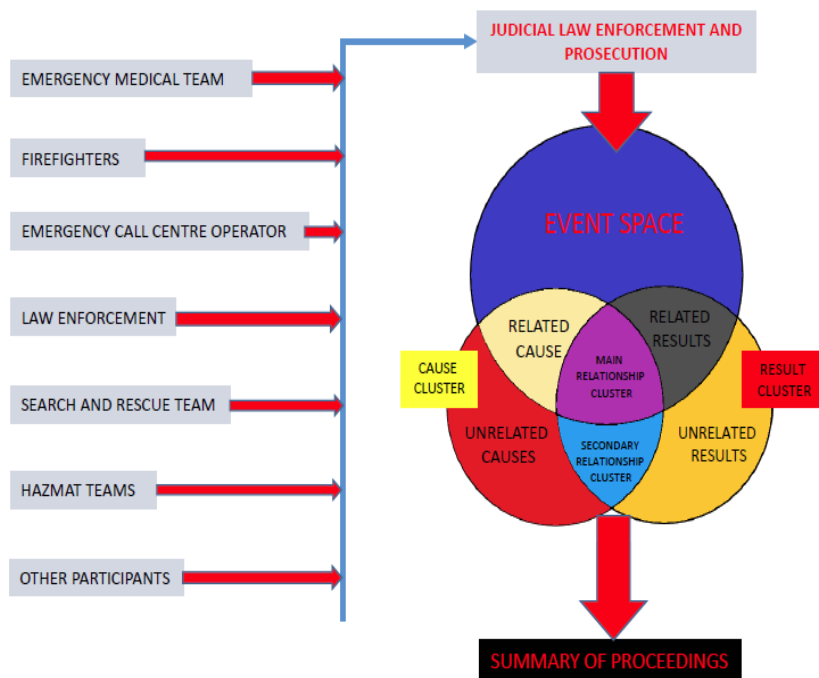


Figure 2: Proposed Model for a Mindful Approach in Criminal Incidents.

8. Conclusion

It is known that the “Forensic Police” organization in Turkey is not fully implemented in all its components for the investigation of criminal incidents. It is observed that such investigations are carried out by specialized units established within the “General Police” in terms of personal rights.

Furthermore, it is observed that there is a lack of strong and systematic coordination between the forensic police, who come under the command of the prosecutor’s office during the investigation, and the first responder groups involved in emergency operations. It is also seen that the first responder units prepare their reports in a routine format.

The model discussed above is expected to minimize the existing problems, improve coordination within the system, expedite the realization of justice, and be beneficial in terms of procedural economy. It is evident that the development of corrective strategies, considering the current conditions and up-to-date information, to draw the attention of the authorities and increase the awareness of the personnel, is important in this regard.

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CHAPTER III

CULTURAL DIFFERENCE/CULTURAL SHOCK DICHOTOMY IN LANGUAGE TEACHING

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1. Introduction

Increasing migration, communication and knowledge activities deepens the necessity of mobilization of people across cultural, national and social boundaries. New technologies, new marketing policies, globalization and the expansion of educational exchange programs force more than ever students to go beyond frontiers and to face other cultural and social environments. This study aims at demonstrating the rapport between cultural difference and Intercultural Communicative Competence which appears as an impasse depriving student of adapting and integrating an unfamiliar situation. The researcher conducted a qualitative study through a descriptive review of literature by revisiting theoretical dimensions of the Intercultural Communicative Competence and development of language skills in order to consolidate communicational, linguistic and social achievement of students learning a second language. The data is collected through previous researches written on cultural shock, cultural diversity and language skills among international students by survey analysis. Three intertwined themes (cultural shock, language skills and cultural diversity) are defined and the cultural diversity /cultural shock dichotomy is deconstructed via Intercultural Communicative Competence in order to cope with linguistic, social and cultural problems of students. It is not enough to possess merely language fluency to arrive a serene communication but also it is important to face with the cultural and pragmatic dimensions of the inter-group communication. Consequently, it is demonstrated that a better achievement is possible by a

better-developed Intercultural Communicative Competence and language skills away from all sort of marginalization, alienation and ethnocentrism.

The cultural context in which we plunged and the language of immersion becomes more than ever significant elements in a world of exchanges (staff mobility, student exchange programs, increasing immigration etc.) on the international level. Individuals are obliged more than ever to cope with situations requiring varied cultural perspectives in today's global village. Bierbrauer and Pederson state that our cultural perspectives result from expectations that in return result from values, which have been learned, in a cultural context. (1996: 410) The cultural context shapes our understanding of the world, our social integration with the system, which includes multi-faceted existential forms and our behaviors against the other. Because we are living-organisms who share the world with the individuals who are similar and varied from us. The variation mostly occurs in the zones of interrelation just as cultural, social and psychological contacts between society and within society. The social identification theory claims that "the members of a social group seem often to share no more than a collective perception of their own social unity and yet this seems to be sufficient for them to act as a group." (Tajfel, 1982: 15) Acting as a group requires also culture-specific qualities in a chain of various behaviors interrelated among the individuals who constitute the group. The social interaction by its members depends on a set of elements just as in-group communication, the language used, and cultural assets.

The culture appropriated by each member influence the serenity of the communication and the interrelation on the interpersonal and the group level. On the other hand, the culture-distance hypothesis foresees that "the greater the cultural gap between participants, the more difficulties they will experience". (Ward, Bochner & Furnham, 2001: 11) This gap leads to mostly to difficulties experienced by the members as isolation, misunderstandings, decrease in social cohesion, intolerance and some subjective reactions between the counterparts of the group. Subjective culture is defined by Triandis as "shared beliefs, attitudes, norms, roles and values found among speakers of a particular language who live during the same period of time in a specific geographic region and when subjective culture become organized around a central theme, we have a "cultural syndrome" (Triandis, 1985: 7). Triandis (1990) enumerates "three major cultural syndromes that are relevant to the analysis of ethnocentrism: cultural complexity, tight versus loose cultures, and individualism-collectivism". The cultural syndrome is even deepened when it occurs in between distant groups

gathered from various socio-cultural qualities. Various socio-cultural qualities such as individualism versus collectivism- features of societies varying in social perception of living styles- influence the group-person and group-group relationship just as it is the case in the contact between occidental and oriental societies. Respectively, Hofstede's seminal study of the values of workers of 117000 employees of a multinational company aim at demonstrating the variation in the nature of the person-group relationship according to cultural diversity. (1980) So cultural differences could work as barriers that influence effective interpersonal communication, which mostly requires mutual understanding in order to achieve an act in social environments like schools, hospitals, offices etc. The communication in question could be in between the individuals of the same cultural or within the individuals of different cultural background. In any case cross-cultural psychology is defined "as the empirical study of members of various culture groups who have had different experiences that lead to predictable and significant differences in behavior. In the majority of such studies, the groups under study speak different languages and are governed by different political units" (Brislin, Lonner, & Thorndike, 1973, p. 5).

Bochner (2006) suggests international students make up an important group of sojourners, and culture contact is an essential part of their sojourn. International students experience a wide range of difficulties as the result of living and studying abroad. These difficulties include language barriers, cultural differences, discrimination, loneliness and academic and financial difficulties (Gui, Safdar, & Berry 2015; Scott et al., 2015) Language barriers and cultural difficulties require a rigorous scrutiny due to the fact that they contribute to the execution of a clear interaction. The mutual communication among members of the group necessitates being aware of the implicit and explicit factors linked to the culture during the stay of sojourners in host society that could minimize or prolong the effects of acculturation and adjustment. Beginning in the 1970s, Berry (1974, 1980) anticipated that "there are two independent dimensions underlying the process of acculturation: individuals' links to their cultures of origin and to their societies of settlement. These links can be manifested in a number of ways, including preferences for involvement in the two cultures (termed acculturation attitudes), and in the behaviors that they engage in (for example, their language knowledge and use, and social relationships)".

On the other hand, according to Berry (2003) acculturation is the process of cultural and psychological change that follows intercultural contact. He defines acculturation as "the dual process of cultural and psychological change

that takes place as a result of contact between two or more cultural groups and their individual members” (Berry, 2005, p. 698). Prior research suggests that international students can experience many challenges as a result of language and cultural barriers, academic and financial difficulties, interpersonal problems, racial discrimination, loss of social support, alienation and homesickness (Yeh and Inose, 2003) A major acculturation stressor that international students face is a language barrier. (Smith and Khajawa, 2011, 702)

The language of the host country is mostly either unfamiliar to the sojourner or not acquired fluently. In this case, the sojourner is faced with not only linguistic obstacles but also social, cultural impasse moments, which accompany it. These factors of stress are even sometimes deepened when the sojourner face with hostility, intolerance, loneliness etc.

2. Problem statement

This study aims at demonstrating the rapport between cultural difference and Intercultural Communicative Competence which appears as an impasse depriving student of adapting and integrating an unfamiliar situation and the salient character of language learning in a pragmatic level with its cultural dimension for students learning a second language.

3. Research Questions

So, the researcher intends responding questions below:

1. What is the importance of culture on the fluency in language for students?
2. What is cultural shock and how is it linked to cultural learning by development of language skills?
3. What is the influence of the development of language skills and ICC in order to compete the process of alienation?
4. How could the ICC be a factor to demonstrate the rapport between cultural difference and ICC and language skills of students, which appear as an impasse depriving them of adapting an unfamiliar situation?

The objective of the study is to validate the effectivity of International Communicative Competence in language learning to cope with problems of social, lingual and communicational aspects of the cultural shock and social adjustment procedures. The intercultural framework gives a broad comprehension of the

issue about the cultural, linguistic and social achievements in students learning a second language.

4. Method

This study aims at demonstrating the rapport between cultural difference and Intercultural Communicative Competence which appears as an impasse depriving student of adapting and integrating an unfamiliar situation. The researcher conducted a qualitative study through a descriptive review of literature by revisiting theoretical dimensions of the Intercultural Communicative Competence and development of language skills in order to consolidate communicational, linguistic and social achievement of students who learn a foreign language. The data is collected through previous researches written on cultural shock, cultural diversity and language skills among international students by survey analysis. Three intertwined themes (cultural shock, language skills and cultural diversity) are selected and defined. The cultural diversity / cultural shock diversity is deconstructed via Intercultural Communicative Competence in order to cope with linguistic, social and cultural problems of students.

5. Cultural Shock

There are approximately more than a million students and scholars attending institutions of higher education in a foreign country (Hayes, 1998, Taylor, 2005). One of their major problems is to adapt to the culture of the receiving society. There is a shift of literature in 1980s from a perspective, which conceptualize the sojourners experience as a breakdown in their normal healthy psychological treatment that requires therapy and adjustment among a migrated society to a view that perceives the difficulties facing by the sojourner as an adjustment process merely to the culture but to learn its salient characteristics. (Bochner, 1982, 164) Those characteristics mostly lead the way towards the experience of a cultural shock at the time of arrival as it is specified by the Culture Shock Model of Furnham and Bochner developed from the difficulties of adjustment experienced by international students due to the unawareness of implicit social rules and culture specific social skills which influence the effectivity of the interaction between the students and host society and institutions (1982).

Culture Shock is defined as “anxiety that results from losing the familiar signs and symbols of social intercourse, and their substitution by other cues

that are strange (Hall 1959, Oberg, 1960)". There are some researches showing bipolar effects of cultural shock either it can facilitate via cultural synergy or complicate the adaptation of the student to the hosting society due to the stressing factors. (Zhou, Y, Jindale Snape D, Topping K & Toddman J., 2008) Peter Adler (1975) had specified the process and sequence of stages in the culture shock experience based on work by Oberg and others. This approach described five stages educational and developmental process (honeymoon stage, disintegration of old familiar clues, reintegration of new clues and increased ability to function in the new culture, reintegration toward gradual autonomy, reciprocal interdependence. (Pedersen, 1995, 3) The research conducted by Presbitero aims at addressing "the gap in the literature by looking specifically at how cultural intelligence (CQ), as an intercultural capability, can assist individuals in managing culture shock and bring about faster adaptation" (2016).

Another research conducted by Goldstein and Keller in 2015 showed that students tended to attribute culture shock to differences in the external environment, such as language, communication, and surroundings, rather than to internal affective or cognitive factors, such as poor stress management, identity confusion, or prejudice. The tendency to attribute culture shock to internal causes was greater for those with higher levels of cultural competence, whereas low travel experience and interest in foreign language learning predicted the tendency to attribute culture shock to external causes. Cultural Shock is not only due to the external factors such as hostile attitudes etc. but language skills esteemed important and the higher levels of intercultural competence in international students develops more easily the necessary tools to cope with the factors of stressing and coping with (affective), an adequate culture learning strategy (behavioral) and a milieu that ease social identification (cognition).

6. Language Skills

Culture shock is mostly accompanied by language shock while the individual is subjected to an unfamiliar environment (Storti, 1990) the sort of exposition to an unfamiliar language and culture force individuals (immigrants, international students etc.) to develop their capacity of adaptation via language and developed communicative skills. The adaptation process may cause certain anxiety related to the failure of these skills. The failure of language skills has potentially a negative influence to the academic performance of international students, their insufficient language skills often decrease their ability to

perform activities such as taking notes, active listening, reading, writing and oral assignments and examinations. (Cadieux & Wherly, 1986, Lin & Yi, 1997; Mori, 2000; Yeh & Inose, 2003).

The language shared by the group is one of the major items that influence the intragroup communication. Language skills varies especially in environment where there are individuals coming from different societies and countries, whose native language is different from the language of communication used by the group for mutual understanding. The common language and its acquisition by the members may become the source of misunderstandings, misinterpretations as well as mediation among the members in such groups. In groups social learning is differentiated from cultural learning, where the former is an individual learning that is influenced by social environment and the latter is to direct the attention of the learner to the location of another individual's activity in order to see the action from inside perspective of the other. In cultural learning, the learner attempts to learn not "from another, but through another" (Tomasello, 1993, 496).

Language inefficiency mostly is accompanied by inefficiency in the cultural arena. The teacher in classroom with international students mostly tends to act as a social actor and mediator between languages and cultures. The international learner faces both the linguistic structure and pragmatic uses of the target language, doing this; he/she is mostly asked to get an insight not only in the target language but also the culture. He/she is invited to do implications, interferences, and inductions via language learning and developing cultural baggage that requires an inter-cultural and inter-lingual competence depending on his/her ability to expertise in the target culture. This experience mostly eases the communication and prevents in most cases the misunderstandings, prejudices and stereotypical views. The international learner is mostly obliged in a unilateral way to use the cultural referents and linguistic structures which orient him/her to the development of an inner-sight by breaking down the stereotypes, prejudices vis-à-vis the target culture. But the most important the researchers mostly neglect aspect is that the cultural and lingual communication is not unidirectional, but is bilateral. It necessitates the contribution of two counterparts in the event of communication. So, the attitudes, stereotypes, prejudices of the hosting society are also as crucial as the learner's ability to integrate. Otherwise, the development and the integration of the international learner will most be turned to an assimilation process to a dominant group or culture. Sometimes the learner could develop a kind of resistance along with an

anxiety, depression to this domination and fail to adapt. Language is the most important variable that could break down the resistance by contributing the development of an Intercultural Communicative Competence.

7. Intercultural Communicative Competence

An essential part of communicative activities is culture. It is conveyed through symbolic systems of meaning created by groups of people in order to ensure the mutual interaction among its members. These groups mostly have common interest, but sometimes it could require a cross-cultural interaction. So, to interact language skills becomes important more than ever. Culture and language are the bricks of the bridge in a cross-cultural environment, which constitute the integral part of the inter-group communication. Culture oriented courses are essential in education especially in language teaching and learning to attract the interest of international learners in foreign cultures, languages and countries by opening them to the civilization and cultural dimensions of the target society (history, literature, education, politics, geography, food and drink habits etc.) in order to increase cultural awareness.

Abdallah Preitceille defines the intercultural education not by focusing merely on the culture as the determinant of the behaviour, but rather the emphasis is on the manner in which individuals use cultural traits to speak, to express themselves verbally, bodily, socially and personally. (2006, p. 480)

In 1972, Hymes defined the communicative competence by criticizing Chomsky and he argued that it is not sufficient to take into account only the grammatical competence but also the linguists should consider the ability to use a language appropriately. He drew the attention on the importance of the sociocultural aspect of an utterance in a given context and he put emphasis on the sociolinguistic competence, which is inevitable for the development of communicative language teaching. In North America, Canal and Swain defined linguistic competence, discourse competence, strategic competence and sociolinguistic competence as the constituents of communicative competence (1980) En 1986, in Europe, Van Ek revised these constituents and defined two more elements as sociocultural competence and social competence.

Intercultural communication competence can be thus defined as a person's ability to respect the beliefs, practices and products of the other, to interpret the events, documents belonging to the other culture, to discover the cultural features of a new society and to develop critical cultural awareness in both cultures of his/her own and the other's. In order to make the intercultural interaction

efficient, the international learner needs to have the ability to construct meaning, to engage in with the people from different cultural backgrounds though apt to use various verbal and nonverbal messages in different languages and contexts of cultural artifacts.

8. Results and Suggestions

In the postmodern era, cultural differences gain a central role of decentering hierarchical setting of the scene in relation to the identities of individuals and their perception of the society. In today's global view of society, individuals differ not only culturally but also linguistically and there is no exception to this in cross-cultural or even more restrictive parts (public sphere, schools, hospitals, working setting etc.) Schools become more than ever a milieu of encounter of increasing diversity of cultural references. Therefore, it is important to scrutinize the cultural difference under the range of the Intercultural Communicative Competence.

To equip not only the professors but also the learner with Intercultural Communicative Competence is to open the way to a society in which the conveying of stereotypes and prejudices will be stigmatized. Mostly the professors have a tendency to erase cultural differences in the favor of cultural equality. But we are now in a society in which each individual needs to be recognized by his/her specific qualities. Equality is by no means yet enough. In such an arena not only the learner but also professor are obliged to develop some intrinsic qualities related to the development of Intercultural Communicative Competence. The diversity is perceived as a point of disequilibrium and as an inconsistency in a perception of education, which was endorsed by institutions on a regional or national level. Students and even professors received an education, which marginalize mostly who is unfamiliar in an unconscious level. In that sense, it becomes more and more difficult to gain an intercultural perspective on educational milieu.

The culture is an integral part of language learning. Therefore, one needs to take into account the cultural dimension in learning and teaching procedures. Intercultural Competence is a notion developed in the postmodern era. In the postmodern perspective of society shifted from seeing culture as a pivot point of shared experiences, norms and knowledge to an angle that see the cultural difference and the contact with the other as prevailed no matter the social, ethnical, rational professional and institutional origin of him/her. The cultural difference appears to be as a richness and the contact between various

cultural entities is began to be perceived as a medium to orient the society to the tolerance towards the other, to the dissemination of a pure ethnocentric identity into various forms of existence.

The language is the medium of excellence that ensures the openness towards the non-similar. It is a gate between cultures, identities, social identification views etc. In that case, the other constitutes the source of the learning process in inter-subjective level for human beings. He/she is the core of communicational, linguistic, psychological and social interaction among individuals and groups. The role of the other becomes more crucial in studies oriented towards the interaction between groups of different countries, languages, cultures, beliefs, attitudes, norms, rules, habitudes, and social backgrounds. This diversity could be either a convergent pivot of mutual understanding, comprehension and tolerance or a divergent pivot of isolation, disintegration and hostility.

Development of language skills and Intercultural Communicative Competence facilitate cross-cultural communication to encounter the other with all his/her culture-specific qualities. The other is always at the core of the meeting-process with the self in an intercultural communication. His/her beliefs, attitudes, norms are transformed and enriched with the self-awareness. The awareness of the self and the other is the ultimate aim of an intercultural communication that underlines the importance of cultural difference and to grasp them in a manner avoiding all sort of discrimination.

Cultural difference is a very delicate issue that sometimes leads the individuals to the identity problematic. If it is not handled in an appropriate way one should be faced with the alienation process. In order to avoid this, Intercultural Communication Competence should be taken into account by all its components. Language fluency, communication easing factors, culture learning and social identification theory are all the constituents, which necessitates a solid Intercultural Communication Competence. In order to prevent alienation both in social and individual level one should consider Intercultural Communicative Competence as a medium in between individuals coming from different backgrounds.

Therefore, the results and suggestions of the current study could be summarized as follows:

1. Culture and language should be taken into account in an intertwined, holistic, complementary perspective in foreign language teaching programs.

2. Language skills could not be envisaged distinctly from the cultural and intercultural determinants, language learning is a procedure in which interfere not only the communication skills but also their pragmatic, social and cultural dimensions.

3. Identity is not a mere form of unilateral existence; it is a procedure of construction, which includes multifaceted structures as behavior, conceptions, perceptions etc.

4. Language teaching is supposed to open the way to the big other, rather than to assimilate the other to the self.

5. By developing Intercultural Communicative Competence, one could contribute to the construction of mutual understanding and comprehension among culturally different groups. The Intercultural Communicative Competence appeals to develop a learning strategy that defeats all sorts of stereotyping, alienation and marginalization processes.

In that perspective, further studies as listed below could be envisaged respectively:

- Intercultural Communicative Competence and “Culturality” in foreign language teaching
 - Cultural Difference perceived as a disseminative aspect of cultural relativity
 - Deconstructing Lingual Contact by Constructing Cultural contact
 - Stereotyping Proceeding/ Cultural Diversity dichotomy in an intercultural learning environment in language teaching
 - Culture- based curriculum and Intercultural Communicative Competence in a language class

Thus, to erase the cultural ethnocentrism in favor of a cultural relativism and consolidate cultural diversity depends on not only the mere use of language rules but also integration of the cultural dimension in these rules. It is not enough to possess merely language fluency to arrive a serene communication but also it is necessary to cope with the cultural and pragmatic dimensions of the inter-group communication in language teaching. Language teaching is not a procedure in which the knowledge is transmitted unilaterally and vertically from the teacher to the learner, but it is an activity in which interferes the cultural, social, psychological integrity of the learner and the teacher. Therefore, Intercultural

Communicative Competence plays a central role in gaining an insight to cope with all sorts of marginalization, alienation and assimilation problems. It is a positioning not only for the language teachers but also for learners to be adapted in order to minimize any attempt of stereotyping which leads directly to a both internal and external conflict on conscious and subconscious of the society. The position to be adapted should be respect, tolerance, and acceptance of the other as its all characteristics no matter they are culturally, socially, psychologically or personally inscribed. Consequently, it is demonstrated that a better achievement is possible by a better-developed Intercultural Communicative Competence and language skills away from all sort of marginalization, alienation and ethnocentrism.

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CHAPTER IV

A RESEARCH ON ENTREPRENEURSHIP TENDENCIES: A STUDY ON A PRIVATE UNIVERSITY STUDENTS

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1. Introduction

Entrepreneurship has been an open door especially for individuals in developing countries who have discovered target market focus in global trade. Realizing this, developing countries support entrepreneurial individuals with some incentives and attitudes towards education policies. At this stage, the current situation of entrepreneurial individuals is important. Universities and some private-public enterprises have incentives for this process. Here, it was desired to measure the entrepreneurial tendency of the participants by determining a narrow sample. In the study, the opinions of 49 people were evaluated. Content analysis was carried out by performing a qualitative study sample. As a result of the evaluation, a number of determinations were made.

2. Entrepreneurship

Concept of entrepreneur is derived from the French word “entreprendre » and passed into English as “entrepreneur ”. The concept of entrepreneur is defined as a person’s dedication to time and effort, taking action and creating something different through innovation (Dinçel, 2014). In another definition, the concept of entrepreneur is explained as a person who brings together all factors of production and produces a good that is thought to be valuable and takes risks for the profit to be obtained (Apak et al., 2010). Entrepreneur is also

defined as a person who seizes and brings together the factors of production in order to produce or market economic goods and services, who seeks profit, and who undertakes the responsibility that may arise as a result of his initiatives (Marangoz, 2013). Entrepreneurship, on the other hand, can be defined as the process of creating a new value by allocating sufficient effort and time, bearing financial, physical and social risks, and obtaining financial rewards, personal satisfaction and independence (Güney & Nurmakhamatuly, 2007). In another definition, entrepreneurship; It is defined as the whole of activities that have ideas about the business, are aware of the opportunities in front of them, and bring together production functions such as capital and natural resources for the production of products and services (Patır and Karahan, 2010). The most comprehensive definition of entrepreneurship; It is all of the activities carried out by individuals who see what society needs before others, who can make plans and put them into practice, continue production under all conditions, do not avoid taking risks, take responsibility, are aware of the need for change and can keep up with change (Soyşekerçi, 2013).). It is also seen that the initiative is sometimes used for small organizations and sometimes to express new companies. Since the essence of entrepreneurship is based on innovations, it is normal to have such a use. Entrepreneurs, who put new organizational forms into practice instead of old methods and always seek innovation, are able to both gain the appreciation of individuals and benefit the society economically. Entrepreneurs who do not hesitate to do such activities, in other words, who have positive results after the risks they take, are defined as dynamic entrepreneurs (Dinçel, 2019). Although there are many features required for entrepreneurs and entrepreneurial activities, it does not seem possible to create a set of qualities that everyone agrees with (Dinçel, 2023). The point that gains importance at this point is that the results of the initiatives made by the entrepreneurs are positive. It should not be forgotten that the characteristics that should be in entrepreneurs will be shaped in parallel with the social and economic expectations of the society (Kızılgöl and İşgüder, 2008). Entrepreneurship is important in order to provide social welfare after determining the needs of the society. It will be possible to increase the employment and income level of the people in parallel with the investments made after the entrepreneurial activities. This means ensuring the welfare of individuals and therefore society. In addition, entrepreneurship is also needed to provide competitive advantage. Considering that the level of competition in today's world is increasing day by day, it will be understood that businesses need entrepreneurship in order to ensure their sustainability. Businesses that reach a certain level in entrepreneurship will

have a more advantageous position compared to their competitors (Naktiyok and Kök, 2006).

The activities of entrepreneurs are so important are as follows; (Mute and Slavery, 2005)

- Decrease in hidden and open unemployment rates,
- Preventing the imbalance in income balances,
- An increase in the level of national income,
- The use of domestic raw materials in production activities,
- The development can reach wider masses,
- Payments made abroad.

Entrepreneurial people need to have a different perspective than ordinary individuals. Just as there are some qualities that distinguish managers from their subordinates in a business, entrepreneurs should have some features that distinguish them from the general human profile. Creativity, the ability to take risks and determination can be counted among these characteristics. Although these features stand out as the common features of entrepreneurs, they will not be enough for entrepreneurs (Dinçel, 2019). It is necessary to go through a process in order to put the investment projects planned in entrepreneurship into practice. These processes, which are needed for entrepreneurial individuals to continue their activities in a healthy way; motivation can be expressed as the process of identifying opportunities, providing the necessary resources, preparing business plans, and constructing the organizational structure. At the same time, there are many factors that affect entrepreneurship. These factors can be organizational factors within the personal or social structure (Stam & Stel, 2011).

Entrepreneurship also includes some qualitative skills. These; (Schultz, 1980)

- Commitment and determination
- Need for success
- Being aware of opportunities
- Taking risks
- Being innovative and creative
- Tolerant of ambiguities
- Be optimistic
- It is the characteristics such as having leadership qualities.

There are certain problems that entrepreneurs face in the support they want to provide for economic development. Some of these problems are as follows: (Carpenter, 2013).

- Young and dynamic population
- Institutionalization and family business,
- Transition from first generation to second generation,
- The technical background of business managers,
- Insufficient studies,
- Lack of market research
- Investment problems,
- Concept of imitation,
- Problems without obtaining finance,
- Problems arising from partnerships,
- Difficulties in taking risks
- Not having easy access to information
- Problems with taxes
- Problems such as quota application in tenders.

Importance both for individuals seeking employment, for society, and for small and large companies. These projects are important for individuals who have unemployment problems because they offer job opportunities, society members who are waiting for these innovations because they offer new products and services, and for small or large-scale businesses as there are situations such as subcontracting and dealership. Considering these situations, it is seen how important entrepreneurship is for economic development.

3. Finding

Investigate scope of Haliç University students it is forming. Among 150 participants who applied to the workshop, those with entrepreneurial inclination 49 students working by choice your sample it is forming. Investigate purpose, students to entrepreneurship look job angles evaluation and determination of entrepreneur characteristics. Selected students should study individuals who have encouraged entrepreneurship. your specific creates its value. Focus group interview technique, one of the qualitative data collection methods within the scope of the research it has been used. The focus group interview is based on a predetermined topic, selected the participants of the group

detailed information and your ideas to determine with the purpose structured it is a special group interview technique. In groups of up to 10 or 12 people determined subject about the participants his views gather up see you, Asking questions, discussing and making a difference in people 's thoughts and experiences summarizing techniques by using One expert by the y is cleared. in research seven student, One watcher and One from reporter the moment 8 person, seven different focus groups created and This seven from the group get made data also One top group by the it is evaluated. research as long as 45's per minute in sessions every 15 minutes focus between groups student change it is done. 4 in total from session the resulting work tayda, respectively ; "In your opinion, what is the place of entrepreneurship in our culture ? ", "What are your entrepreneurial experiences ? ", "What are the barriers to entrepreneurship? and "Entrepreneurship in the fore to obstacles against solution your suggestions what are they?" questions to the participants oriented the participants to the questions he gave answers group inside place area expert by the with care gathered and it is summarized. In the research, it is necessary to consider 7 different groups separately and to ensure that the transitions between groups it is aimed to expand and disseminate the information by providing it. change between groups an individual who cannot express himself comfortably in a group thanks to by being more comfortable in their environment, by avoiding data loss, everyone who participated in the research individual about healthy obtain data to be made has been provided. Separately ca focus group while the ideal number of questions in the interviews is 4-5 narrows the data width, the applied the method is based on four main questions, but the subjects at each table are different. Considering it from different perspectives has increased data diversity. At the same time, this method thanks to the changes between the tables, every new participant who joins the group can get a new perspective. by bringing your talk crisscross from the d ng the exit it is solid. research before to the participants entrepreneurship its features A questionnaire was distributed in order to determine considering the data answers to the questionnaire take it collected data through the intermediary students demographic features it has been measured. Second on the part of whereas; on the tables found watcher and reporters through, with the participants focus group see me done and beforehand determined questions by refining the participants entrepreneurship with relating to his views has been collected. research within the scope focus group from your sights get made data is qualitative It was evaluated using content analysis, one of the research methods. Content analysis is a systematic

analysis of data, usually within predetermined categories. It is a method that provides shape formation. The main purpose of content analysis is to collect the collected data. It is to reach the concepts and relations that will explain. In this respect, the process performed in content analysis is to categorize similar data in the light of certain themes by coding and interpret it in a way that the reader can understand. One of the focus groups in the study each report text obtained was read by 3 experts on the subject and a meaningful code was obtained units detected. This in context data detailed coding the truth has been added. Qualitative in research data coding to 3 separate: These; more code generation according to pre-determined concepts, according to concepts extracted from the data coding And end aspect in general One three home in do it not coded. do it at work more before determined to concepts see code creation method has been used. This method ; research the foundation forming of the subject clear One theory either in conceptual of the house it happened cases by using, data without gathering before One code list it is taken out. do not work chin, literature product place area Cansız (2007) And Abdullaeva (2007) based on the entrepreneurship scales used by in three houses created draft to themes see determined codes and lower by categorizing the codes it is arranged. do it your coding after sketch themes As a result of the controls made on it, the themes were finalized and the participants entrepreneurship features detection been made. Read more later determined codes on categorical analysis and frequency analyses has been applied.

Investigate this in part work taya join in students he filled question forms and focus group your meeting their evaluations it is done. Investigate first your part forming questionnaire from the app get made according to the data; Of the 49 participants, who showed a balanced distribution, 20 (51 %) men and 29 (49 %) women, Haliç University it was seen that he was a student.

Table 1. Status of Taking Entrepreneurship Course

	F	%
Yes	32	65%
No	17	35%
Total	49	%100

While 32 (65 %) of the students participating in the study had taken an entrepreneurship - related course before, 17 (35 %) stated that they had not taken such a course. In this context, the majority of the participants feel like a potential entrepreneur even though they have not taken any entrepreneurship course

before and have an entrepreneurial idea. It is remarkable to have. According to the results of the focus group interviews, it was determined that students out of 32 students who took entrepreneurship courses before, 15 students and 17 students who did not take the course. Your identity It has been seen that 15 of them think that it is necessary to give entrepreneurship courses in universities. In this context, they think that the students who have taken entrepreneurship courses before are not satisfied with this education and that they need a field of application within the sector, and that it is theoretically sufficient. they are specified.

Table 2. Own Business of the Family

	F	%
Mom-Father	4	8%
Father	21	43%
Mom	7	14%
Non of	17	35%
Total	49	%100

21 (43 %) of the participants of his father, 4 (8 %) of his mother and father, 7 (14 %) of of his mother own do your job owner it happened, 17 (35 %) of whereas mom and It has been determined that his father did not own his own business. The general view is that entrepreneurship inherits from the family. It is possible to say that it is an encouraging situation for the family to be an entrepreneur. Majority of the students have the view of “Being the boss of your own business ”.

Table 3. Answers to the Question “Describe Yourself With One Word ”

Personal Characteristics	F	%
High self - confidence	12	24.4%
Leader	8	16.3%
Hard working	7	14.3%
Honest	6	12.3%
Brave	5	10.2%
Intelligent	4	8.2%
Anxious	4	8.2%
Shy	2	4.1%
Passive	1	%2
Total	49	%100

To research join in from students, themselves One word with definitions were asked and 12 (24.4%) had “High Confidence”, 8 (16.3%) were a “Leader”, 7 (14.3 %) “Worked”, 6 (12.2 %) “Honest”, 5 (10.2 %) “Brave” and 4 (8.2 %) “Intelligent” while describing; 4 (8.2%) “Anxious”, 2 (4.1 %) “Shy” and 1 (2.0 %) “Passive” Aspect has been identified. Do it focus group in your meetings also students big most of the flour in particular, that he said he was successful in evaluating the opportunities that came his way, brave, intelligent, leader, work blood and self-confident aspect recognizable students big It has been determined that the majority of them agree on this issue. Similarly to the future they stated that they came out with their foresight and that they made plans accordingly and that they were confident that they could carry out their plans. In addition, the majority of students who describe themselves as brave, self - confident, leader, hard-working and intelligent cases choose creation about themselves trust it has been seen.

Investigate second on the part of expert by the with care by gathering outlined “Do you think in our culture of entrepreneurship location why?”, “You live entrepreneurship what are their experiences?”, “What are the barriers to entrepreneurship?” and “What are your suggestions for solutions against the obstacles in front of entrepreneurship ? Content analysis of the answers to the questions “Has been applied”. Exhibitors four session along share it expressions meaningful to units separately, entrepreneurship its features emerge putting parts coded and do it codings are gathered under certain categories. Categorical analysis of entrepreneurial characteristics of the participants according to the categories created as a result of the analysis the results Table at 4 is given.

Table 4. Categorical Analysis of University Students’ Entrepreneurial Characteristics

Leadership	F
I wear to your soul owner being	40
Plans I executing skill	39
With the future relating to decision to receive / visionary	35
With the fore plan don’t do that	32
Leadership hand from receiving do not hesitate	31
Total	177
Self Confidence	
Opportunities in evaluation yourself distrust	45
Choice creation and in solving yourself	40
Effective decision in receiving yourself distrust	39
To your abilities suitable area in forming yourself	36
Total	160
Novelty button	
Change work projects ability to present / creative	40
New One thing to try liking	38
To innovations adapt in being problem what about me	34
Total	112
Risk Taking	
From taking risks do not hesitate	38
To intuition trustingly work don’t do that	35
Total	73
Sociability	
Social activity/ to the fun time do n’t bear	36
Flexible do not work hours preference don’t	32
Total	68
To education importance giving	
Entrepreneurship education at university should be given	35
Entrepreneurship experience requires	31
Total	66
Snow focused not being	
Idea from money it is important	38
Material earnings second in the background hold	28
Total	66
Idealism	
Own do your job owner to be don’t ask	39
From the deal give up three breasts	26
Total	65
Motivation	45

The features of “Having a team spirit”, “The ability to carry out plans”, “Making decisions about the future/visionary”, “Planning with foresight” and “Not afraid to take the lead”, which were coded from the statements of the students participating in the research, were categorized under the theme of “Leadership”. “Self-confidence in evaluating opportunities”, “Self-confidence in creating options and producing solutions”, “Self-confidence in making effective decisions” and “Self-confidence in creating a suitable space for one’s abilities” were categorized and coded under the theme of “Self-confidence”. The participants’ high scores on the characteristics coded under the “Self-Confidence” category were supported by the fact that they were reckless and still open to new experiences, even if they had failed in their previous entrepreneurial experiences. The fact that they received high scores in the “Innovation” category, which combines the features of “presenting different business projects/creativity”, “liking to try something new” and “not having problems adapting to innovations”, was also supported by the fact that the majority of them had new ideas. In addition, the fact that the majority of the participants did not experience adaptation problems in intergroup exchanges coincides with these characteristics. On the other hand, while the codes of “Do not hesitate to take risks” and “Do business by relying on intuition”, which are defined by the statements of the participants, are categorized under the title of “Taking Risks”; Codes of “Spending time for social activities/entertainment” and “Preferring flexible working hours” were collected in the “Socialism” category. While the category of “Emphasis on Education” includes the codes “Entrepreneurship education should be given at the university” and “Entrepreneurship requires experience”; The “Not Profit-Oriented” category also consists of the codes “Idea is more important than money” and “Don’t keep material gains in the background”. Finally, the features of “wanting to own one’s own business” and “not giving up on one’s ideal” were collected in the category of “Idealism” and the “Motivation” code was evaluated as a separate heading. According to the categories created, the results of the frequency analysis on the entrepreneurial characteristics of the participants are as follows:

Table 5. University Of Students Entrepreneurship of Your Features Frequency Analysis

Exhibitors Owner Happened Entrepreneurship	F	%
Leadership	177	21.3%
Self confidence	160	19.2%
Novelty button	112	13.5%
Risk Taking	73	8.8%
Sociability	68	8.2%
To education importance giving	66	7.9%
Profit Focused inability to be	66	7.9%
Idealism	65	7.8%
Motivation	45	5.4%
Total	832	100.0%

As a result of the study, “Leadership” (21.3%) got the highest score, “Self-confidence” (19.2%) and “Innovation” (13.5%) among the entrepreneurial characteristics of university students participating in the workshop from different universities and departments. ranked third. In the first part of the research with the findings obtained, “How would you describe yourself in one word?” was asked to the participants. It was determined that the answers given to the question were similar to each other. From this point of view, it can be said that the participants are conscious and self-aware individuals about entrepreneurship.

4. Conclusion and Recommendations

Entrepreneurship process includes an area that includes some disciplines and needs to be managed in a chain with sub-disciplines. Knowledge control involves a series of processes such as knowledge evaluation, foresight, time control, principledness, or self-evaluation. After the industrial revolution that developed over time, the emergence of the need for diversity, especially in consumption, brought along some creative and innovative tendencies. The demand for knowledgeable and creative people who interpret information has increased, and this has created a new generation of entrepreneurs. It is possible to say that entrepreneurship education and programs that encourage entrepreneurial individuals have increased especially in the 1980s with the introduction of the new global partner China. In the 2000s, the process was supported by adding entrepreneurship courses to the common curricula and establishing Technology

Transfer Offices or Incubation Centers in most universities, which are also managed by the Bologna process. At this point, it is possible to present the idea that it is important to understand the entrepreneurial tendencies of the students. This study was designed and implemented by referring to the opinions of university students on entrepreneurial tendencies with a qualitative study technique. The pre-interview of the students selected for the study was determined to have an entrepreneurial tendency potential, and interviews were conducted in that way.

The results obtained as a result of the study are as follows.

- There is no gender discrimination in entrepreneurship.
- University students with entrepreneurial tendencies want to get information.
- Individuals with entrepreneurial tendencies prefer being self-confident, a leader and a hard worker to most other factors.
- Entrepreneurial tendency is important in terms of leadership, self-confidence, innovation and risk taking.
- Entrepreneurship sees being creative as an art. This means that entrepreneurship also gives the feeling of an art form.
- Students think that entrepreneurship courses are beneficial.

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CHAPTER V

MUNICIPAL ADMINISTRATIONS AT THE POVERTY ALLEVIATION IN TURKEY: THE CASE OF MUĞLA METROPOLITAN MUNICIPALITY*

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1. Introduction

Poverty is more comprehensive than insufficient productive resources and income to reach sustainable livelihoods; it also includes hunger, limited access to education and other services, malnutrition, lack of participation in decision-making processes, social exclusion and discrimination (UN, 2023). The urbanization of poor have been faster than the whole people, and between the years of 1993 and 2002, 50 million people were added to the individuals inhabiting in urban areas with an income of less than 1 dollar a day (Ravallion, 2007: 16). The problem of poverty and urban poverty has been on the agenda of political makers and academic circles recently; organizations at international and national levels are developing policy proposals to reduce the negative impacts of poverty on communities (Şengül and Ersoy, 2003: 6).

According to the Turkish Statistical Institute (2022a) “Income and Living Conditions Statistics” Newsletter, when the general level of the society is

* This study is produced from my PhD Thesis having the title of “A Critical Evaluation of Local Poverty Alleviation Policies: The Case Of Three Provinces In Turkey”, Submitted to The Graduate School Of Natural And Applied Sciences of Middle East Technical University

taken into consideration, individuals whose income is below a certain limit are expressed as relatively poor, and this rate is explained as 14,4%. In this context, at the same Newsletter; 2,6% of higher education graduates and 27,7% of illiterate ones are indicated as poor, the rate of material and social deprivation is pointed out as 16,6%, permanent poverty is demonstrated as 14,0%, and those at risk poverty and social exclusion are expressed as 32,6% (Turkish Statistical Institute, 2022a). Additionally, Gini coefficient, was expressed as 0,415 with an augmentation of 0.014 points in comparison to the previous year; which is explained as “*the income distribution inequality criteria expresses equality in income distribution as it approaches zero and deteriorates in income distribution as it approaches to one*” (Turkish Statistical Institute, 2022b). The lowest income realization is pointed out at the TRB2 region that covering Muş, Hakkari, Bitlis and Van provinces (Turkish Statistical Institute, 2021). Material and social deprivation rate has the highest rate in the year 2021 among the years covering 2018 and 2022 in Turkey (Turkish Statistical Institute, 2022a). In Turkey, besides the central government, local governments and especially municipal administrations have important initiatives and practices to alleviate poverty.

The first objective of the study is to put forth the municipal administrations’ significance at poverty alleviation. Secondly, the study is tried to examine Muğla Metropolitan Municipal Administration’s initiatives and practices towards the poverty alleviation. At the last part, a survey study applied in Muğla province, Turkey concerning the Muğla Metropolitan Municipal administrations’ initiatives towards poverty alleviation. The findings of the survey study will be discussed in detail with considering the recent poverty alleviation initiatives of Muğla Metropolitan Municipality.

2. Municipal Administrations and Poverty Alleviation

Local governments have many opportunities to provide poverty-related initiatives; these initiatives are pointed out as involving the poor in decision-making through the creation of participatory urban processes, enabling their access to infrastructure, land and urban services, cooperation on community-based initiatives, launching integrated programs to develop the urban environment, promoting social inclusion and citizenship, promoting the advancement of micro and small businesses, setting partnership on social projects, developing programs to attain vulnerable groups, reducing the

problems of marginalized and poor populations (Serageldin, Solloso and Valenzuela, 2006).

Poverty alleviation/ reduction is explained as a situation in which certain manifestation of poverty are alleviated, and municipal level poverty alleviation comprising development of basic services and housing (sanitation, transportation, health and day care etc.), legal representation, raising assets and income (micro-enterprise, employment generation) (Vanderschueren, Wegelin and Wekwete, 1996: 5). The municipal administrations' policy intervention areas towards poverty alleviation are counted as creation of employment, integration and coordination, reaching to services of municipality, regulatory frameworks, security and preserving from disasters and crime (Rogerson, 1999: 514). The municipal administrations are critical actors as to their responsibility areas at the implementation of municipal services related issuing construction permits and licenses for transportation and commercial activities, easing community initiatives (Wegelin and Borgman, 1995:132). Municipal administrations' success concerning their performing responsibilities also depend on some factors such as institutional based responsibilities should be clearly designated which also necessitates a clear communication with the central government; resources mobilization should be augmented comprising own resources of municipalities, borrowing and intergovernmental transfers; the necessity of capacity building initiative, urban services' effective delivery (Vanderschueren, Wegelin and Wekwete, 1996: 6).

3. Muğla Metropolitan Municipal Administration and Poverty Alleviation

3.1. Muğla Metropolitan Municipality Social Assistances

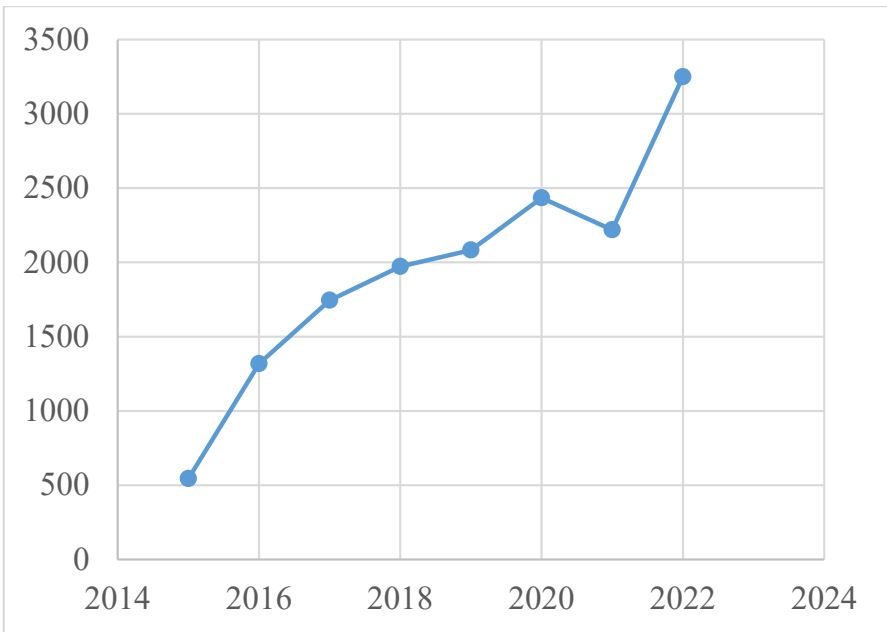
Muğla Metropolitan Municipality provided aid to 2978 families with 15 million 572 thousand 010 TL via the application of the People's Card, which was initiated to support citizens in social and economic terms. In addition, Muğla Metropolitan Municipality provided 2014 families in kind, 1900 families cash, 5078 families winter, 3306 families stationery and education assistances. Muğla Metropolitan Municipality emphasizes that it has provided support to 11.775 families with 27 million 296 thousand 493 TL since its establishment (Muğla Metropolitan Municipality, 2023a). Muğla Metropolitan Municipality established Short Break Centers for the first time in Turkey in order to provide services to disabled individuals, and 363 families received 6317 services from the

relevant centers (Muğla Metropolitan Municipality, 2023b). A Toy Library was established by Muğla Metropolitan Municipality in order to ensure that every child has access to toys and to benefit their psychological, cognitive and social development (Muğla Metropolitan Municipality, 2023c). Muğla Metropolitan Municipality opened the 100 Age House in order to enable citizens over the age of 60 to maintain their productivity and to actively participate in social life (Muğla Metropolitan Municipality, 2018a). For the first time in Turkey, the Purple Life Project was implemented by Muğla Metropolitan Municipality to support women and children in prison, and the purpose of the project is distributing personal care and hygiene materials to women and children in prison (Muğla Metropolitan Municipality, 2019a). Muğla Metropolitan Municipality carries out the My Sister Project in partnership with Habitat Association to provide communication and financial literacy trainings to women (Muğla Metropolitan Municipality, 2018b). Muğla Metropolitan Municipality through “Enjoy by Sharing” Project, the goods such as household goods, clothes and toys are ensured to the citizens in need by the benevolent citizens (Muğla Metropolitan Municipality, 2017a).

In the 2022 Activity Report of Muğla Metropolitan Municipality, in related to Social Services Branch Directorate’s social assistances; it emphasized that by July 2014 onwards, in-kind and cash assistance are provided to the poor, needy, orphans and disabled citizens with low income, who have problems in maintaining their lives even at the lowest level, and have difficulty in meeting their basic needs. The categories of aid are explained as stationery aids, disaster aids, public card, cash aids, in-kind aids and health expenses aid (Muğla Metropolitan Municipality, 2022: 146). Some of the Social Services Branch Directorate’s aids other than social aids include wood, barrier-free beaches, handicapped transportation service, 100-year-old house, cold to hot, purple life, women’s counseling center, family counseling center, social service workshops, Bağyaka day nursery home, mobile, and soup catering vehicle, social service camp, toy library (Muğla Metropolitan Municipality, 2022: 147-150). In the 2021 Activity Report of Muğla Metropolitan Municipality, in related to Social Services Branch Directorate’s social assistances, it is pointed out that public card for 1201 families, aid in-kind to 90 families, cash aid for 315 families, stationery aid for 596 families, exam fee assistance for 17 families, and total 2.701.243 TL was provided for 2219 families (Muğla Metropolitan Municipality, 2021: 155). In the 2020 Activity Report of

Muğla Metropolitan Municipality, concerning the aid provided by Social Services Branch Directorate, it is elucidated that the municipality provided public cards to 1698 families, stationery aid to 148 families, cash aid to 169 families, tablet aid to 78 families, internet aid to 1 family, in-kind aid to 86 families, and wood aid to 254 families (Muğla Metropolitan Municipality, 2020: 143).

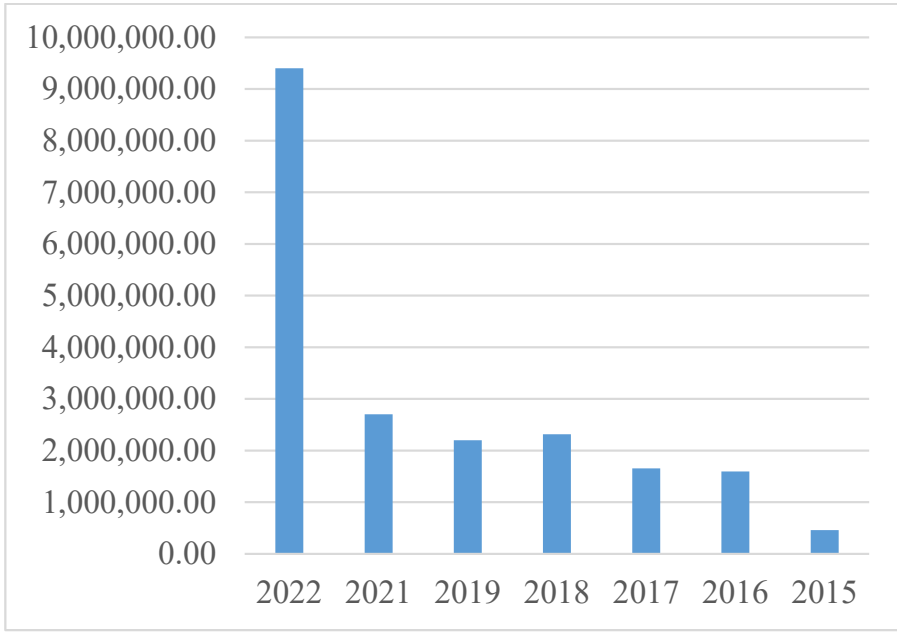
Table 1: Total Family Facilitated from Social Assistance Provided by Muğla Metropolitan Municipality



Source: This table was created by the author by examining the activity reports of Muğla Metropolitan Municipality between 2015-2022.

As it is seen from the table, the number of family facilitated from social assistance provided through Muğla Metropolitan Municipality's Social Services Branch Directorate rise up to 2020, only in the year 2021 the number falls in comparison to 2020 and it again reaches to its top ratio in the year 2022.

Table 2: Total Amount of Aid (TL) Provided by Muğla Metropolitan Municipality



Source: This table was created by the author by examining the activity reports of Muğla Metropolitan Municipality between 2015-2022.

As can be seen in the graph, the aid provided through the Muğla Metropolitan Municipality Social Services Branch Directorate in 2015-2018 tends to increase, but experienced a slight decrease in 2019 and reached the highest rate in 2022.

When the Activity Reports of Muğla Metropolitan Municipality between 2015 and 2022 are examined, the social aids were realized within the framework of the following categories: People's card, cash aid, Ramadan support package, winter aid, in-kind aid, stationery aid, school uniform aid, exam fee aid, tablet and internet aid, wood aid, disaster aid, support card assistances. Other social aids and projects carried out by Muğla Municipality between 2015-2022 are listed as follows: Wood, disabled transport, short break for disabled families, accessible beaches, come also accessible cafe, accessible scouts, disabled desk, from cold to hot (for the homeless), 100 age house, sycamores in the countryside (for the elderly), purple life, women's counseling center, family counseling

center, psychological counseling line, social work workshops, Bağyaka day nursery (for children), horticultural walnut nursery, social work camp, soup catering vehicle, mobile catering vehicle, toy library, ramadan support, tradesmen, ramadan food package, my sister project, enjoy by sharing, disability rights booklet (Muğla Metropolitan Municipality; 2015, 2016, 2017b, 2018c, 2019b, 2020, 2021, 2022).

3.2. Muğla Case Study1

Tablo 3: Survey Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Head	30	61,2	62,5	62,5
	Wife	8	16,3	16,7	79,2
	Daughter/ Son	7	14,3	14,6	93,8
	Father/ Mother	3	6,1	6,3	100,0
	Total	48	98,0	100,0	
Missing	System	1	2,0		
Total		49	100,0		

At Muğla case, questionnaire is applied to 48 households' residents at Orta, Şeyh, Hacı Rüstem, and Kiramettin neighborhoods. Within the context of the study, it is tired to apply the study mostly to the head of the households, but when the survey participant is not the head of the family, head's occupational, educational background, his/ her monthly wage and social security condition have been asked to the other members of the household who responded to the survey questions. As it is seen from the table above, the survey questions mostly asked to the head with 62,5 percent which is the highest ratio in the total sum. Surveyed households are composed of more than 5 people at the rate of %29,2; and %54,7 of the households have children in educational training, critically %4,2 of them have more than four children in education. This ratio paves the way for lots of disadvantages; crowded families having low income are more vulnerable to risks than the other households in bringing up a child and at their educational trainings.

1 For Details, see, Önez Çetin, Zuhul. (2012). "A Critical Evaluation of Local Poverty Alleviation Policies: The Case Of Three Provinces In Turkey, A Thesis Submitted to The Graduate School Of Natural And Applied Sciences of Middle East Technical University

Table 4: Head Educational Background

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Illiterate	7	14,3	14,6	14,6
	Literate	11	22,4	22,9	37,5
	Primary School	25	51,0	52,1	89,6
	Middle School	2	4,1	4,2	93,8
	High School	3	6,1	6,3	100,0
	Total	48	98,0	100,0	
Missing	System	1	2,0		
Total		49	100,0		

As it is illustrated at the above table, %52,1 head of the poor households are mostly primary school graduates; primary school's total ratio is also a high degree in comparison with middle and high school graduates. Moreover, other participants applied survey apart from head members, have mostly primary school (%44,4) and secondary education degrees (%22,2). From this finding, it can be argued that head members of the households have low educational backgrounds that limit their integration to the labor market. In this context, %52 of the head members who are unemployed have primary school degrees.

Table 5: Head Employment Condition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed	10	20,4	20,8	20,8
	Look For A Job/ Unemployed	10	20,4	20,8	41,7
	Not Look for a Job/ Unemployed	7	14,3	14,6	56,3
	House wife	9	18,4	18,8	75,0
	Retired	6	12,2	12,5	87,5
	Handicapped	3	6,1	6,3	93,8
	Seasonal Worker	3	6,1	6,3	100,0
	Total	48	98,0	100,0	
Missing	System	1	2,0		
Total		49	100,0		

According to table shown above, %35,4 of the head of the households are unemployed, and while %20,8 of them search for integrating to labor market, %14,6 of them have no effort to find a job. In this regard, women head households have 18,8 percent which is also a high percentage in the survey study in Muğla case. Besides, survey participants' %42,9 of them are wage earners and %33,3 of them have daily-wages. In the survey analysis concerning the participants other than head of the household, it has been found that only one of them is a wage earner and %5,6 of them are retired. Lastly, participants aside from head members' %16,7 of them are unemployed and %55,6 of them are housewives.

Table 6: Head Social Security Condition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not under Social Security	18	36,7	37,5	37,5
	Social Security Institution	7	14,3	14,6	52,1
	Pension Fund	4	8,2	8,3	60,4
	SSI for Artisans and Self Employed	3	6,1	6,3	66,7
	Green Card	16	32,7	33,3	100,0
	Total	48	98,0	100,0	
Missing	System	1	2,0		
Total		49	100,0		

According to the results shown in the table, it is observed that 37,5 percent of the head members are not under social security, and critically, %33,3 of them use green-card. As indicated by the data, %29,2 of survey participants are under social security and %44 of the participants other than the head of the households are also not under social security. Briefly, it is seen that half of the participants are not under social security and they are vulnerable to the risks of poverty.

3.3. Muğla Metropolitan Municipal Administration Poverty Alleviation Initiatives and Practices

At the study, Muğla Metropolitan Municipal Administration categorized social services such as cash, kind and capacity generation or training services

have been searched by the examination of social assistance beneficiaries' numbers, their usage periods, and their opinions about those services sufficiency.

Survey participants %20,4 of them have benefited from Municipal Social Directorate's social assistances in cash and in kind. %6,1 of them have benefited from Women Solidarity House under Muğla municipal administration. In this context, %10,2 of them have been benefiting from municipal cash aid assistance and %80 of the households have started to facilitate from this service for one year term. Besides, all participants used that service with three month intervals. Briefly, %80 of the beneficiaries have a negative belief related to cash aid sufficiency provided by the municipal administration.

In addition to cash assistances, municipal kind assistances can be listed as nourishment, heating, and educational assistances. In this sense, half of the survey participants using municipal aid are the beneficiaries of the nourishment and heating assistance and one applicant is the user of the educational assistance. %60 of nourishment beneficiaries have used that service for one year and %49,2 of them have been facilitating from heating assistance for more than 3 years. Education aid user has been using that assistance for one year. Municipal social service nourishment users' %83,3 of them stated that nourishment services are insufficient; heating users' %75 of them also evaluated that service as insufficient. Critically, none of the household has used the employment creation activities of the municipal administration such as capacity generating and training courses.

Table 7: Do you find municipal administration kind or cash assistance sufficient?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	8,2	11,8	11,8
	No	30	61,2	88,2	100,0
	Total	34	69,4	100,0	
Missing	System	15	30,6		
		49	100,0		

This question is influential in demonstrating the general view about cash and kind services of the municipal administration. By the help of that question participants who are not beneficiaries of municipal administration also declare

their opinions about the social assistances of municipal administration. At the illustrated table, %88,2 of the participants give negative answer to this question as they find the municipal services of cash and kind assistances insufficient; only %11,8 of the participants have the opinion that those social based services are sufficient to handle with poverty in their daily lives. The reasons of that insufficiency is explained by the participants with those clarifications; “municipality gives us 25 packets of coal aid, but we have also other necessities in addition to heating assistance”, “the assistances are in small amounts that cannot meet our needs, especially cash, nourishment, heating and educational assistances amounts are inadequate”, “the timing of the assistance also creates problem, heating assistance should be distributed before the winter term”. The participants hope to take heating, nourishment, and hot meal assistances in short time intervals. “Municipal administration generally gives heating assistance with coal; there is no variation in services towards the children, the disabled and the elderly citizens”. Most of the survey participants have the idea that municipal administration cannot make the needed home-investigations at the poor assistances. At this context, some of the participants stated that ‘we are in need of everything, any assistance can improve our daily conditions’.

Table 8: Municipal Administration Social Assistance Knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	34,7	35,4	35,4
	No	31	63,3	64,6	100,0
	Total	48	98,0	100,0	
Missing	System	1	2,0		
Total		49	100,0		

As it is observed from the table above; 64,6 percent of the survey participants gave negative answer to this question. It is critical that people who have been facilitating from cash and kind aids of the municipal administration such as the beneficiaries of nourishment and heating services also respond to that question negatively. It can be stated that even municipal social service beneficiaries do not have adequate knowledge concerning the social services of the municipal administration at combating poverty.

Table 9: Reasons at Having No Knowledge concerning Municipal Administration Social Assistances

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Insufficient Enlightenment Process	33	67,3	67,3	67,3
	Applied to Municipality but not Approved	9	18,4	18,4	85,7
	Take Whatever Municipality Gives	2	4,1	4,1	89,8
	Shame to Apply for Municipal Assistance	4	8,2	8,2	100,0
	Total	49	100,0	100,0	

It is seen that %67,3 of survey participants have the opinion that municipal administration cannot make the required enlightenment process concerning poverty related social assistances. In that context, %18,4 of the participants declared that they apply to the municipal department but their applications are not approved by municipal officials. Moreover, %8,2 of the participants claimed that “they do not apply for social assistance because they feel shame in demanding cash and kind assistances”. Lastly, at the table demonstrated below, it is observed that survey participants gained social assistance knowledge mostly from mukhtars, other beneficiaries and neighbours/ relatives.

Table 10: Social Assistance Knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Newspapers-Magazines	2	4,1	5,9	5,9
	Local Tv and Radio	2	4,1	5,9	11,8
	Neighbours and Relatives	9	18,4	26,5	38,2
	Mukhtar	12	24,5	35,3	73,5
	Other Social Assistance Beneficiaries	9	18,4	26,5	100,0
	Total	34	69,4	100,0	
Missing	System	15	30,6		
Total		49	100,0		

Table 11: Does the municipal administration provide services according to requirements?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	14,3	15,9	15,9
	No	37	75,5	84,1	100,0
	Total	44	89,8	100,0	
Missing	System	5	10,2		
Total		49	100,0		

As it is seen from the table, people have the belief that municipal administration does not provide services according to the requirements of the impoverished households. At that point, %15,9 of the participants give positive response to that social service based question. Some of the participants also claimed that social commission staff come for search at households, but after the scrutiny no one comes for explaining whether their application has been approved or not. It is seen that the feedback mechanism is not activated after home investigations. In this respect, reasons behind that drawback are explained by participants as follows; “only when we make application, municipal officials come for the poor examination and sometimes applications are not approved that we cannot take any assistance”, “mukhtar has more interest at the distribution of social assistance than the representatives of municipal administration”.

Table 12: Do you think that municipality is successful at the alleviation of poverty?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	10,2	12,8	12,8
	No	34	69,4	87,2	100,0
	Total	39	79,6	100,0	
Missing	System	10	20,4		
Total		49	100,0		

It is seen that %87,2 of the survey participants have the opinion that municipality is not successful at poverty alleviation.

After all of those detailed analysis, it is seen that survey participants have been living at crowded families, and the head of the households have low

educational backgrounds that limit their opportunity to integrate to the labor market (%35,4 of the head members are unemployed). The last indicator about the household profile is about social security and it is seen that 37,5 percent of the head members are not under social security, and %33,3 of them use green-card. At the examination of Muğla Metropolitan Municipal Administrations' poverty related assistances, municipal administration provides heating and nourishment assistance aside from cash aid. In this respect, survey participants also evaluated those social assistances as insufficient. In regard to the drawbacks of municipal administration at the alleviation of poverty; it can be stated that municipal social service beneficiaries do not have sufficient knowledge related to the social services of municipal administration at struggling poverty. Survey participants tied that problem to the insufficiency at the enlightenment process of local administration.

4. Conclusion

At the Muğla Metropolitan Municipal Administrations' survey study results, the survey participant declared their opinions concerning the poverty alleviation initiatives and practices of municipal administration. Muğla case study survey participants have some negative concerns such as insufficiency in cash and in-kind aid, inadequate knowledge about the municipal administration's social assistance, insufficient enlightenment process concerning poverty related services, not providing the services according to the requirements, not successful at poverty alleviation. However, at the recent period covering the 2015 to 2022 period, it is seen that Muğla Metropolitan Municipality through Social Services Branch Directorate has been dealing with significant efforts at the alleviation of poverty such as the raise at the number of family facilitated from social assistances, the provision of the public card, cash and in-kind aid, disabled based services (disabled transport, accessible beaches, a short break for families with disabilities), from cold to hot, family, women and psychological counseling centers, elderly based services (100 age house, sycamores in the countryside), day nursery services, poverty-related project (enjoy by sharing project). Besides, the total amount of aid in TL have a raising trend in comparison to the year 2015 and this ratio gains its highest rate in 2022. Considering the practices and initiatives of Muğla Metropolitan Municipality in recent years, it is observed that progress has been made at the efforts in reducing poverty. At the poverty alleviation, the municipal administrations in Turkey should increase and

diversify their practices and initiatives for the groups most likely to be affected by poverty.

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CHAPTER VI

AIRSPACE MANAGEMENT: AWACS & VIA SENSOR INTEGRATIONS

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1. Introduction

Airspace management refers to the process of organizing and regulating the use of airspace in a particular region or country. This includes the establishment of rules and procedures for the safe and efficient movement of aircraft, as well as the allocation of airspace resources such as air traffic control services, navigation aids, and communication systems. Airspace management is a critical aspect of aviation operations that is essential for maintaining the safety and efficiency of air travel (Prandini et.al, 2011). Airspace management helps to ensure that aircraft are separated from each other and are guided through safe flight paths (Guan et.al, 2020). This minimizes the risk of mid-air collisions and other accidents. Effective airspace management optimizes air traffic flow, reducing delays and congestion, and minimizing fuel consumption, which in turn helps airlines save on costs (Lee et.al, 2011). Airspace management is crucial to national security, as it allows for the monitoring and control of aircraft movements in and out of a country's airspace (Shrestra et.al, 2021). Proper airspace management can help reduce the environmental impact of aviation by optimizing routes and reducing fuel consumption, which in turn

reduces greenhouse gas emissions and noise pollution (Reynolds, 2014). The efficient use of airspace can lead to economic benefits, such as increased tourism and trade, as well as job creation in the aviation industry (Fu, et.al, 2010).

AWACS plays a critical role in airspace management by providing valuable information and control capabilities that can help to ensure the safety and security of the airspace. The remote sensing and warning systems are getting more importance and use interoperability during last decades. One of the best examples of this interoperability is Airborne warning and Control Systems (AWACS). In this platforms, the remote sensing theories are used by different subsystems of AWACS in perfect harmony. Lots of information about Area of Interest (AOI) can be collected, interpreted and transmitted with securely or insecurely to the authorities. Because of these properties, AWACS platforms uses not only military purposes but also civilian purposes as if search and rescue, fighting against smuggling, etc.

In this paper, firstly we will focus on remote sensing theory and then AWACS theory. There are lots of different type of AWACS in use however we will study just only 2 types of them.

2. Methods

In military science, a warning system is a method utilized to detect the situation or intention of an enemy so that appropriate action can be taken. Surprise has always been a significant factor in military tactics, and defenders have attempted to develop warning systems to cope with these tactics by detecting the timing, location, route, and weaponry of an attacker. Various types of warning systems are present, including long-term, medium-term, and short-term warning systems. Long-term warning systems use political, economic, technological, and diplomatic indicators to forecast hostilities and help defenders to prepare themselves accordingly. Medium-term warning systems, which usually span a few days or weeks, provide notification that hostilities may be imminent. Short-term warning systems, on the other hand, offer a notification that the enemy has initiated hostilities and usually occur just hours or minutes before the attack. The detection devices or sensors perceive the attack, the likelihood of an attack, the proximity of the enemy, their location, size, activity, weaponry, or any changes in their posture. Warning systems include not only detection devices but also judgments, decisions, and actions that follow the information provided by sensors. The output of these sensors is complex and voluminous and requires computers to condense and summarize the data for decision-makers.

The communication and evaluation systems are often the weakest link in the warning system and require technology of all types to be effective in modern times.

1.1. Electromagnetic Sensors Uses In Warning Systems

2.1.1. The Visible Region

Binoculars and telescopes have changed very little. Where vibration and motion create interference, gyroscopically stabilized optics are used in surface vehicles, ships, and aircraft.

Newer in character are the image intensifiers used for nighttime detection. These devices receive the moonlight or starlight reflected from targets on a sensitive screen, amplify the image electronically, and present it at much higher light level on a small cathode-ray tube similar to that used in a television receiver. Typical of these devices is the starlight scope, resembling an oversized telescopic sight, with which riflemen can aim at night at 1,000–1,300 feet range. Artillery, tanks, helicopters, and aircraft use similar, larger devices having longer range. In aircraft the direct-viewing device is replaced by a cathode-ray tube in the instrument panel; this version is called low-light-level television.

Ordinary searchlights can often be used at night even in combat situations; but, to avoid drawing fire, invisible light, in the ultraviolet or near infrared range, can be used with appropriate viewing devices. Conventional photography, used in aerial reconnaissance and essential to long-term warning, must have high resolution despite temperature and vibration interference. To cover wide areas, panoramic cameras, scanning from side to side, record high-quality images. Frame cameras are also used, especially for mapping. At night, flares or flashing lights on aircraft are used.

2.1.2. Infrared

Infrared sensors on the ground, or in aircraft or spacecraft, can detect such hot spots as motor-vehicle engines, hot jet engines, missile exhausts, even campfires (Popa & Udrea, 2019). They have good location accuracy and high sensitivity to signals, without registering such false targets as sun reflections.

In the very near infrared region, infrared imaging detectors use specially sensitized photographic film to reveal forms hidden by camouflage. More important are the detectors used in the far infrared region; objects at room temperature radiate sufficient energy for detection at ranges of several miles. Infrared imagery can have longer range than image intensifiers and can operate

without starlight. When the humidity is high, the effective range is reduced. The sniper scope, an early device that used infrared illumination and an infrared viewer, has been largely replaced by the image intensifier and by laser illuminators (Davis, 2019)

2.1.3. Radar

Radar is used by ground forces for many purposes: in portable sizes, for infiltration detection; in intermediate sizes, for mortar and artillery shell tracking; and in large sizes, for early warning, search, and control of air-defense weapons (interceptors and surface-to-air missiles).

Radar is used in fighter aircraft for finding enemy aircraft and controlling air-to-air missiles, rockets, and guns. It is used in bombers to find surface targets, fixed or moving, and to navigate and avoid obstacles. It is used in large aircraft as an airborne warning and control system, searching the skies over great distances for enemy aircraft, tracking them, and controlling interceptors. It also is used to search the seas for surface vessels or surfaced submarines. Radar also can be used in spacecraft to locate patterns of activity.

In all applications of radar, clutter in the form of reflections from surface objects or the terrain, or the disturbed sea, competes with reflection from the targets and must be cancelled by appropriate circuitry. Side-looking radars are used to obtain higher resolution than conventional radar, improving the ability to recognize surface targets.

Conventional radar operates at microwave and ultrahigh frequencies that propagate in straight lines like light rays; consequently, they cannot ordinarily detect objects beyond the Earth's horizon. Because high-frequency waves reflect from the ionosphere, over-the-horizon radars have been built to operate in this region (Rihaczek, & Hershkowitz, 1996).

2.1.4. Radio Sensors and Detectors

Radio receivers can be used to detect and locate enemy radio. Enemy radars can be located in much the same way. Messages can be intercepted. This form of warning has been combated by radio silence and by spoofing, the transmission of signals intended to deceive. In 1967 the Israelis transmitted voluminous radio messages from empty airfields to hide the fact that aircraft had been moved to other locations.

Radio direction finders can be used to locate nuclear bursts, because the explosion generates a large amount of energy in the radio frequency region (Joshi et.al, 2013)

Acoustic Techniques: While electromagnetic waves do not propagate well under water, acoustic waves do and can be used to detect submerged submarines. These detection systems, called sonar, may intercept propeller or other noise generated by the submarine or may send out sounds and receive echoes from the submarine hull. Sonar devices can be operated aboard surface ships, aboard submarines, on floating sonobuoys, or suspended by cables from helicopters and dunked in the ocean (Davis, 2019). Sonar systems are limited in range by attenuation (weakening) of the sound energy in water, bending caused by temperature differences in water layers, and extraneous noises, including reflections from the sea bottom. Acoustic receivers are also used on land in sensors deployed near trails to detect the presence of personnel or vehicles along roads. The sounds are sent by radio to listening posts. Acoustic sensors are also used in monitoring nuclear explosions.

Seismic Detectors: Seismic detectors as well as underground acoustic detectors called geophones are used in sensors for infiltration and vehicle detection. Both types must be used, since either alone can yield false signals caused by the movement of animals (Wang & Teng, 1995)

Magnetic Detectors: Sensitive magnetic detectors (magnetometers), flown in aircraft over the sea, are used to detect submarines because the large metallic mass of the submarine hull disturbs the earth's magnetic field. Buried on land, magnetometers are used to detect the passage of vehicles (Davis, 2019).

Nuclear Detectors: Underground nuclear explosions are detected by sensitive seismometers. To increase the sensitivity and reject natural earth tremors, seismometers are often used in large arrays extending for hundreds of miles. For atmospheric or space explosions, radio-pulse receivers and light flash and acoustic detectors are used, as well as devices to measure fallout. Aircraft and rockets can be used to collect radioactive debris, while high-altitude satellites carry detectors for gamma rays and other emissions (Davis, 2019)

Chemical Sensors: Concealed chemical sensors, sensitive to minute amounts of body products, are capable of detecting personnel from short distances (Janata, 1992).

1.2. Future Developments

Certain trends can be seen in sensor development for future warning systems. Infrared detectors of higher sensitivity and resolution are being developed. Higher-powered and smaller lasers will aid night warning systems. These and other lines of research, centered on lighter weight and more efficient optics and on more efficient detectors, should result in much cheaper

systems with resolution approaching visual sensors. Perhaps most important are improvements in the resolution and brightness of the display—the chief limitation of most night viewing systems.

Photography has already reached an advanced state of technology, yet improvements in resolution are being actively pursued. Lightweight optics, more sensitive and fine-grained film, film that can be developed quickly by heat, and better compensation for the motion of the aircraft are some of the areas where photography can be improved.

Developments in large ground radars center around the phased array radar having electronically steered beams. The beams must be computer controlled. Moving target discrimination and Doppler processing are built out of digital circuitry as used in digital computers. This permits sensitive discrimination and rapid response.

The advent of the transistor and solid-state microcircuits is making small radars for infantrymen and tank operators possible. The miniature components and high reliability of these devices makes extremely complex and sophisticated circuitry possible.

Airborne radar is in its early stages of development. Side-looking Doppler-processing radar has already yielded high resolution, but not quite as good as conventional photography. Developments in progress indicate that soon images comparable to photographic images will be obtained from airborne radar. Imperfections now common in radar imagery should be removed as a result of present research.

A great deal of effort in several countries has reduced the vulnerability of radars to electronic countermeasures; at the same time, however, similar improvements in electronic jamming and deception have taken place.

Nuclear propulsion enables submarines to remain submerged and escape detection by radar. This, plus its increased speed, makes the nuclear submarine a formidable threat. To combat this, sonar sensors for detection of submarines are now being formed into arrays. This increases the sensitivity and rejects extraneous noise, especially important in regions of turbulence.

The search for more sensitive systems of detection will go on. Measurement of the temperature change in the water in which a submarine lies and the magnetic anomaly observable when it is under the water are two directions in which study is being pursued. A range of such measurements may become possible. Testing of laser beams for underwater recognition capability has been proceeding for some time. The problem is extremely difficult, water being a medium quite different from air, and much work will be needed to overcome the obstacles.

The subject is closely linked with the study of undersea conditions generally; that is, oceanography. American efforts dwarf those of any other Western nation, though France, a pioneer in undersea exploration, is active. Underwater acoustic navigation enables ships to be used for missile or satellite tracking. Underwater communication over very long distances is essential for the control of nuclear submarines, to make the most of their almost unlimited radius of operation (Britannica, 2023).

2. AWACS Concepts

AWACS, abbreviation of Airborne Warning And Control System, a mobile, long-range radar surveillance and control center for air defense. The system, as developed by the U.S. Air Force, is mounted in a specially modified Boeing 707 aircraft See table.1 for specification of E3 component. Its main radar antenna is mounted on a turntable housed in a circular rotodome 9 m (30 feet) in diameter, elliptical in cross-section, and 1.8 m deep at its center. The radar system can detect, track, and identify low-flying aircraft at a distance of 370 km (200 nautical miles) and high-level targets at much greater distances. It also can track maritime traffic, and it operates in any weather over any terrain. An airborne computer can assess enemy action and keep track of the location and availability of any aircraft within range. The communications system, enabling the control of friendly aircraft in pursuit of enemy planes, operates over a single channel, secure from enemy interception, that is also relatively immune to jamming because of its high speed (Department of Defence, 2016).

Table 1 Technical Specifications

Source: Department of Defence, 2016

E-3 Airborne Warning and Control System	
First Flight	May25, 1976(E-3A withfullmissionavionics)
Model Number	707 airframe(E-3)
Classification	Airborne Warning and Control System
Span	145 feet 9 inches
Length	152 feet 11 inches
Grossweight	325,000 pounds
Top Speed	530 mph
Endurance	6 hours at 1,000 miles from base
Ceiling	More than 29,000 feet
Power	Four 21,000-pound-thrust turbofan P&WTF-33 engines
Accommodation	4 crew, 13 to 18 AWACS specialists

The first production-model AWACS entered service in 1977. The U.S. Air Force uses the AWACS, which it designates as E-3, as a command-and-control center for units of its Tactical Air Command and for command-and-control activity in its North American Air Defence Command (NORAD). NATO also uses the system (Department of Defence, 2016). There are several kinds of AWACS in use all over the world however we will focus 2 kind of AWACS systems especially US property (Davis, 2019).

- E3- Sentry
- E7- Peace Eagle

2.1. E3 Sentry

The E-3A Sentry is an Airborne Warning and Control System (AWACS) (see Figure 1); aircraft that provides all-weather surveillance, Command, Control and Communications needed by commanders of air tactical forces. Proven in not only wartime operations such as Desert Storm, Sea Guardian etc., also peacetime operations such against for illegal refugee transportation. AWACS is the premier air battle command and control aircraft in the world today.



Figure 1 E3-A Sentry

Northrop Grumman Electronic Systems (ES) has a long heritage in the development and production of Airborne Early Warning (AEW) radars. As the supplier to Boeing for the AN/APY-1 and AN/APY-2 radar systems used on the E-3, and the AN/APY-2 radar system used on the E-767, ES has continued as a leader in the development of radar technology for airborne applications. Mounted atop the aircraft fuselage in a rotating dome, the AWACS S-band (E-F band) surveillance radar is able to survey, in 10-second intervals, a volume of airspace covering more than 200,000 square miles (500,000 square km)

around the AWACS, or greater than 250 miles (400 km) in all directions. The radar uses a high Pulse Repetition Frequency (PRF) pulse Doppler waveform to distinguish aircraft targets from clutter returns. The ultra-low sidelobe antenna is an important element of technology used to obtain performance over all terrains including urban and mountainous areas. The mechanical rotation of the rotodome scans the antenna beam through 360 degrees of azimuth to cover targets in all directions (See Figure 2). Electronic scanning of the antenna beam in elevation is used for measuring target altitude and for stabilization of the beam for proper spatial coverage as the aircraft maneuvers (Department of Defence, 2016).

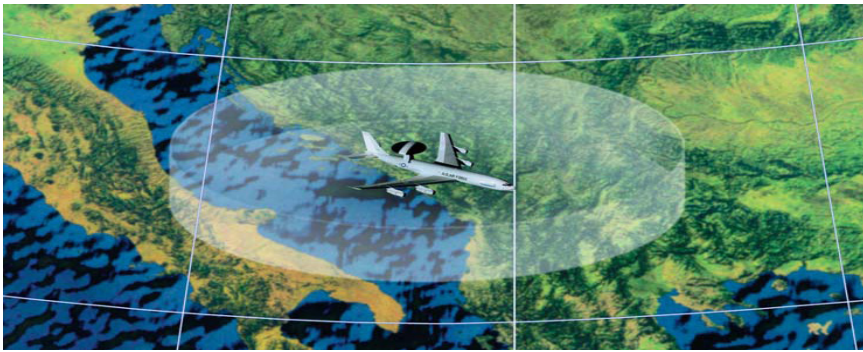


Figure 2 E3-A coverage design.

3.1.1. Pulse Doppler Elevation Scan (PDES)

Radar operation in the PDES mode is similar to PDNES, but target elevation is derived by an electronic vertical scan of the beam (See Figure 3).

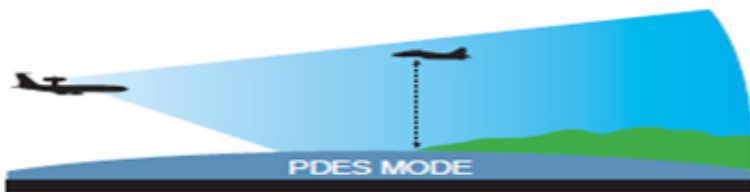


Figure 3 Pulse Doppler Elevation Scan (PDES) detection.

3.1.2. Beyond the Horizon (BTH)

The BTH mode uses pulse radar – without Doppler – for extended range surveillance where ground clutter is in the horizon shadow (See Figure 4).

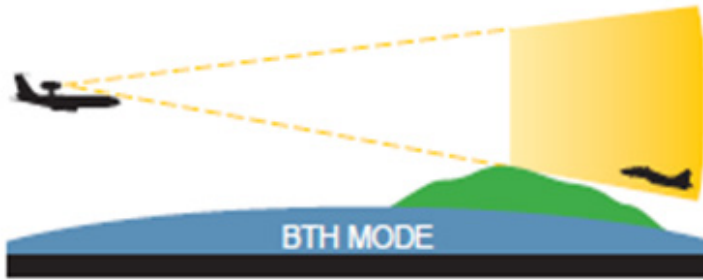


Figure 4 Beyond the Horizon (BTH) detection

3.1.3. Interleaved

PDES and BTH can be used simultaneously with either portion active or passive. PDNES can be used simultaneously with maritime. (See Figure 5)



Figure 5 Interleaved detection

3.1.4. Maritime

Radar operation in the PDES mode is similar to PDNES, but target elevation is derived by an electronic vertical scan of the beam (See Figure 6).



Figure 6 Maritime detection.

3.1.5. Passive

The radar transmitter can be shut down in selected subsectors while the receivers continue to receive and process data. This is an effective feature in a

jammed (ECM) environment. A single accurate line (strobe) passing through the location of each jammer is generated on the display console (See Figure 7).

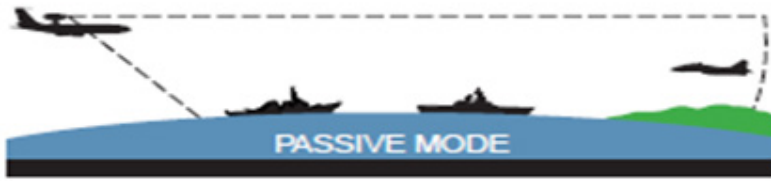


Figure 7 Passive detection.

3.2. E7 Peace Eagle

E7 is the new generation AWACS which have phase array antenna that can use electromagnetic waves with flexibility. (See Figure 8) Variant of the 737-700 Increased Gross Weight (IGW) commercial aircraft coupled with a mission suite and with other configuration elements as if, addition of dorsal radar antenna (MESA radar and IFF), addition of ventral fins, addition of auxiliary fuel tanks, addition of Air-to-Air refueling & Fuel Jettison capability, installation of 737 AEW&C mission equipment in lower lobes and on main deck, installation of antennas for communications and navigation, interior configuration to allow for mission, equipment and crew accommodation.



Figure 8 E7-T Peace Eagle.

Pulse-Doppler is a radar system capable of not only detecting target location (bearing, range, and altitude), but also measuring its velocity (range-rate).

It is a common misconception that pulse-”doppler” radars utilize the doppler effect to calculate velocities, since it is considered impossible to measure the tiny frequency shift originated from targets moving at sub-sonic speeds when excited by very brief radar pulses.

Velocity measurements are instead made possible by transmitting many radar pulses towards each target over a very short period of time and measuring relative target movement between each pulse. The number of pulses used are usually referred to as packet size or a “look,” and the frequency in which they are emitted as pulse repetition frequency (PRF).

Pulse-Doppler radars involved in aircraft surveillance typically use medium to high PRF's (Bleiholder & Naumann, 2009).

Side Arrays: Cover 120 degrees each (total of 240 degrees of coverage), + - 15 deg in elevation.

Top Hat: Covers 60 degrees fore and 60 degrees aft (total of 120 degrees)

3.2.3. System Overview

Locates and tracks airborne and surface targets. Radar & IFF operate simultaneously but in different aperture pairs. Full 360° coverage achieved in 10 seconds.

Modes:

- Pulse Doppler Airborne (PDA) ‘ground clutter’
- PDA/single pulse surface (SPS) ‘sea clutter’

3. Findings

The AWACS theory is, detect the object in the air or over the sea with radar at high altitude. Thus, the range is also increase according with “the Line of Sight Theory”.

The AWACS can communicate the participant with secure or unsecure voice communication within a long range. She can manage all operation area with her air and sea radar capacity.

4.1. Sensor Integration

Data fusion is “a formal framework in which are expressed the means and tools for the alliance of data originating from different sources. It aims at obtaining information of greater quality; the exact definition of ‘greater quality’ will depend upon the application” (Waltz & Llinas, 1990).

AWACS can also detect ships, planes or missiles with “Passive Detection”(Waltz & Buede, 1986) . They can monitor electromagnetic spectrum and detect and identify the objects via Electronic Support Measures (ESM) components. The informations which detect different sensors, integrate

according with the contributions percentage via mission computer. All the coordinate systems adapt on the Area of Interest map which can choose the different projections. It is a Great Circle Problem, and the solution is tangential plane.

For every track or plot, the Mission Computer has got to provide quick access to all the regions (circles, polygons or corridors) where that track or plot is located. That raises two issues:

1. Firstly, how do we check whether a point is inside or outside a polygon region?

2. How can we do this quickly? It is far too time consuming to check a track/plot position against all regions, so we've got to somehow come up with a way of pre-selecting regions. It's time-consuming because of the Great Circle problem - when checking whether a point is inside or outside a polygon region, the major difficulty we face is that the polygon edges are defined as segments of great circles on the surface of the earth – the processing power and speeds required to compute a track's position in relation to a number of these polygon edges is simply too great – so we try to pre-select the regions, and this we can do by projecting the point and the region outline into a tangential plane. Then the projection of the point is checked against the projected polygon.

The simplification occurs because the polygon edges that were defined as segments of great circles (on the surface of the earth) have been transformed into straight lines (in the plane), So time consuming trigonometric calculations are reduced to linear operations. Tracker is going to process tracks, is projected into this tangential plane and its image is covered by a grid. The projections of all regions are then overlaid onto that grid. Now any new tracks have their position tagged with reference to the grid, and so have to be checked only against the projected regions that overlap that particular grid cell.

The Mission computer transfer the raw radar echoes to plots via using sampling methods. Movements continuity of this plots and the other sensors information's give a chance to create vector based tracking symbols which is global acceptance symbology due to transferring air picture to international components. The point is, the picture which is monitored, not understandable for untrained people. The AWACS operators are well trained and educated for understanding and creative air and sea picture.

It is transformed Raw Radar Data to Radar Plots that are be more meaning about the velocity, direction and identification via AWACS platform's multisensor integration. The tracks and plots have meaning about the sensor integrations which un-correlated or correlated.

4.2. Identification Methods

Multi-sensor data fusion is “about the synergistic use of sensory data from multiple sensors to extract the greatest amount of information possible about the sensed environment” (Waltz & Llinas, 1990).

This definition is clearly putting more of an emphasis on the framework and on the fundamentals in remote sensing underlying data fusion instead of on the tools and means themselves, as is done usually sought to answer the fundamental question – given the data available, what inferences can be drawn to determine **“what the is target trying to do?”**

Level 0 is not actually included as one of the levels of data refinement because it occurs prior to entry into the Data Fusion domain. This level covers the initial signal processing and allocates data to appropriate processes.

Level 1 aligns all sensor information to a common reference frame, and then fuses the information to achieve a refined representation of an individual entity. This is where Tracking and ID take place.

Level 2 attempts to extend the situation description produced at Level 1 to develop a description of relations between entities – perhaps how each track relates to its neighbours. Results from this level are generally designed to indicate hostile behaviour patterns.

At level 3, Threat Refinement, the current situation is analysed and projected into the future to draw inferences about possible outcomes. It identifies potential enemy intent and friendly force vulnerabilities. This level focuses on intent, lethality, and opportunity.

Level 4 Processing - Process Refinement is a process that aims to optimize the overall performance of the fusion system; it interacts with each of the other levels.

About Identification, the new method use which depends on the “decision making tree” that called “ Automatic Identification”. The AWACS surveillance operators specify the contributions of “track characterize” and “mean of information which go through the mission computer from different sensors.” The Mission Computer decide the identification automatically determine according to percentage of contributions which were specified before by AWACS operators.

Also, the crew of the AWACS can make change the Identification anytime which determine automatically by mission computer in advance.

4. Conclusion

Management is crucial in aviation as it helps ensure the smooth and safe operation of airlines and airports. Management in aviation is responsible for ensuring the safety of passengers, crew, and aircraft (Sundu et.al., 2022). Effective management practices help to prevent accidents, incidents, and other safety-related issues (Sağbaşı & Erdoğan, 2022). Management in aviation is responsible for ensuring that airlines and airports operate efficiently. This includes managing the use of resources, such as fuel and staff, and optimizing processes to reduce delays and improve the customer experience. Management in aviation must ensure that airlines and airports comply with local and international regulations. This includes safety standards, security requirements, and environmental regulations. Airspace management is an essential aspect of aviation safety. It involves the effective coordination and management of the use of airspace to ensure the safe and efficient operation of aircraft. The management of airspace is critical to preventing collisions between aircraft and ensuring the safe separation of aircraft during flight.

In the context of airspace management, AWACS can provide valuable information about air traffic, including the location and status of aircraft in the airspace, which can be used to facilitate the safe and efficient flow of air traffic. AWACS can also be used to identify and track potential threats, such as unauthorized or hostile aircraft, which can help to improve airspace security. The AWACS theory is the detect and identify the object with using Doppler radar effect. It can be also a remote sensing system. The only thing is, the monitoring. The Air picture and Sea Picture is determined by the well trained and educated operator. It will be integrated with the other remote sensing systems. The AWACS technologies are in use different areas. Not only military purposes but also Search and Rescue, Fighting against Smuggling, illegal refugee transportation in sea, etc.

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CHAPTER VII

DISASTER FIELD KITCHENS: FIRST NUTRITION AID OF EMERGENCIES

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1. Introduction

In order to prevent hunger and malnutrition of victims, nutrition management (NM) is a very critical and urgent part of disaster management (DM). Field kitchens play pivotal roles in NM by producing and serving hot meals at various places where the victims are. The fact of their impact on human health with their production roles under unpredictable conditions, disaster field kitchens (DFK) necessitate and deserve special attention. Apart from some limited and undetailed mentions, there are barely any academic explanations about these kitchens with a holistic approach. This descriptive and explanatory study aimed to understand the properties of DFKs by reviewing related books, researches, reports about DM, NM and mobile kitchens. In addition to these, web sharings of chefs were also used to understand outdoor food production conditions. With this study, disaster field kitchen was described and explained with operational dimensions and planning considerations. These can help upcoming modelling and standardizing efforts.

Disaster field kitchens are a component of nutrition management in scope of disaster management. In order to understand the specific properties of DFK, breaking it down could be more helpful.

DM > NM > DFK

1.1. Disasters and Disaster Management

Disasters are natural or manmade actions that can cause a wider scope of environmental catastrophes and social crises (Wang, Zhao, & Liu, 2020) which

results in great damage, loss of lives. The worst element of it is surprise makes coping with it overwhelming (Sawalha, 2020). Disaster management (DM) or emergency management (EM) involves efforts to prepare for, respond to, and recover from disasters. It can be challenging due to a lack of clarity and confusion within the discipline (Vermiglio, et.al, 2022) and requires multidisciplinary approaches and multi-scale decisions (Wang, Zhao, & Liu, 2020) that consider the needs of affected communities and available resources (Baxter, Lagerman, & Keskinocak, 2020). Coordination among participating organizations can increase interoperability and prevent conflicts (Shareef, et.al, 2019).

DM can be divided into four phases: mitigation, preparedness, response, and recovery. The *mitigation phase* involves efforts to lessen or minimize the adverse impacts of disasters through foresight and experience (Vermiglio, et.al, 2022). The *preparedness phase* involves activities such as stocking disaster kits, developing mutual aid agreements, training personnel (including volunteers), and constructing physical infrastructure. In the *response phase*, DM performs activities such as rescuing, damage assessment, first aid, sheltering (Sun, Bocchini, & Davison, 2020), and providing food support and nutritional services. The *recovery phase* involves efforts to help victims return to their normal lives by minimizing the impact of the disaster (Mishra, Kumar, & Hassini, 2018). Recovery activities may include debris removal, damage assessment, reconstruction, restoring livelihoods, and community development (Sun, Bocchini, & Davison, 2020). All phases of DM requires a shared-responsibility of public institutions (Atkinson & Curnin, 2020) and taking long-term health threats into account (Vermiglio, et.al, 2022). NM is very first and vital factor of DM for the sake of public health.

1.2. Food and Nutrition Management in Disasters

Food is a critical need during disasters, and nutrition management (NM) is essential to prevent hunger and malnutrition among affected populations (Prastia et al., 2023; Baxter et al., 2020; Geale, 2012). Proper NM can help prevent decreased nutritional status, macro- and micronutrient deficiencies, and infectious diseases (Hayudanti et al., 2022). Adequate and balanced nourishment is pivotal for victims to overcome the physical and psychological impacts of disasters (Öztürk & Koçak, 2017). To sustain people's health, adequate meal intake with energy and protein requirements should be provided according to World Food Program recommendations: 2100 Kcal and of 50 g protein per person per day (Laili et al., 2022). A diet should include 450 g of grains, 25 g of fat, and 50 g

of legumes. In addition to these foods, tea, sugar, iodized salt, spices, and fresh vegetables and fruits can be provided depending on the individual's cultural and dietary habits. Special or vulnerable groups such as pregnant women, infants, children under five years old, chronically ill individuals, and elderly individuals need special consideration in NM planning (Badem, 2023; Prastia et al., 2023; Hayudanti et al., 2022; Öztürk & Koçak, 2017; ATMK, 2006; Aycan et al., 2002). Nutrition cards can be prepared for vulnerable groups in the field to plan and monitor resources and production (Güden & Borlu, 2023).

Food-related problems can arise during disaster situations, including improper food *distribution* (98,9%), lack of food *variety* (80%), and low *quality* of food materials (77,8%). These problems can be caused by factors such as insufficient management (91%), late provision of food materials (85,7%), lack of nutrition experts in food distribution (79,7%), and insufficient food preservation equipment (60,2%) (Tavakoli H. R., 2008). These problems can be detailed as follows: a shortage of facilities for the supply chain, lack of empowerment of downstream execution-level administration, cost management, longer lead times in estimation, procurement, storage, carrying, and distribution, difficulties in targeting and segmenting proper areas and people, lack of interoperability in coordination and communication among relevant government bodies, improper estimation and selection of items, shortage of human resources and weak organogram, relatively unstable information management, and vertical management and top-down bureaucracy (Shareef et al., 2019).

NM can be divided into several phases, including immediate, sustained, and long-term (Marincioni et al., 2019), early and long, or short and long. In the *early stage*, immediate needs such as water and high-energy foods that do not require preparation are supplied. In the *second phase*, hot meals and snacks are served via mobile field kitchens. In the *long term*, the aim is for victims to prepare their own meals in their shelters with support from central kitchens staffed by professional teams (Öztürk & Koçak, 2017). DFKs have an important role especially at the early stage and the second phase of NM.

2. Disaster Field Kitchens

Food production in the field, originally, was used to enhance the morale of soldiers by providing hot food (Hanjie, 2014; Kirejczyk & Schleper, 2004) during war by the Department of Defense (Will, 1993). As in many cases, wars have taught civilian life about producing meals in the field under harsh circumstances.

Major food shortages can be a primary feature of an emergency, as in droughts or floods that lead to famine, or they may be a consequence of war, economic disaster, earthquake, or population displacement. The often serious protein-energy malnutrition and micronutrient deficiencies that inevitably result from such situations can be prevented or alleviated by the provision of adequate food (WHO, 2002). Disaster field kitchens can be defined as a first nutrition aid of emergencies which consist of mobilized and demounted food production setup. Different types of field kitchens plays a key role in that kinds of need with their abilities.

2.1. Types of Disaster Field Kitchens

There are different types of field kitchens and they vary in size, mobility, capacity, and functionality (Wikipedia) to produce hot meals, soup, tea, and bread for large groups of people. They can be powered by different sources such as LPG cylinders, mains electricity or generators and are designed to be portable and easy to set up in different locations.

Mobile catering vehicles are used to distribute soup, tea, and ready-to-eat meals during disasters. They are equipped with a small oven (operated with an LPG cylinder), two soup cooking pots, a hot food transport container (thermobox), and a tea machine with a capacity of 250 cups. A single vehicle can produce an average of 50 liters of soup and 80 liters of tea per batch using 4 kg of ready-made soup and 1 kg of tea, respectively. The vehicle can be powered by either a 220-volt mains electricity or a 2 KVA generator. In this group, ***Mobile kitchens*** consist of two pressure cookers mounted on a single-axle trailer. They are operated with LPG cylinders and can produce food for an average of 500 people per batch in each cooker (Öztürk & Koçak, 2017).

The other classification can be made about the kitchen in portable covered containers like, from the smallest to bigger; caravan type, container and trailer kitchens. ***Caravan-type mobile kitchens*** are equipped with kitchen equipment installed inside a caravan. When operated at full capacity, they can provide two types of meals for 1,000 people or up to 2,000 people if only one type of meal is prepared (Öztürk & Koçak, 2017). ***Container kitchens*** (CKs) are housed in a trailer-mounted expandable container and are designed to be pulled by a Medium Tactical Vehicle (MTV). They can provide up to 800 meals per meal period and are equipped with 7 burners to support food cooking/preparation activities, 2 commercial refrigerators, an environmental control unit, and a self-contained 10 KW generator for power. Other cooking equipment includes an oven, tray

ration heater, cook stands/pot cradles, griddle, and steam tables (Kirejczyk & Schleper, 2004). **Mobile kitchen trailers** (MKTs) can be taken anywhere to cater to large parties or functions. They are equipped with standard features such as a lowered central floor for more ergonomic worktops and a serving hatch that doubles as a serving counter and weather protection. The trailer's roof is insulated to combat condensation on cold days and its internal surfaces are made of food-grade brushed stainless steel or gloss white GRP combined with tough non-slip flooring for easy cleaning and sanitation. The trailer is equipped with durable LED lighting for a bright and safe working environment and can be stabilized using optional corner steadies. It can be powered by either a 12V on-board power supply or a 230V socket for connecting to an external main source. A roof light can be inserted to provide extra lighting in the trailer and reduce electricity usage (IWT, 2017).

Modular tent kitchens (MTKs) or **Field kitchen kits** are similar to mobile kitchen trailers (MKTs) in terms of cooking equipment but differ in that they are set up on the ground and housed in an extendable frame-supported tent while MKTs are trailer-mounted (Kirejczyk & Schleper, 2004). They are designed to provide hot meals for at least 5,000 people per meal period or up to 15,000 people if only one type of meal is prepared. They include all necessary kitchen equipment and units (such as food preparation units, washing units, cooking units etc.) and are housed in a tent measuring either 63 m² or 105 m² (Öztürk & Koçak, 2017). In addition to these, there is also only-bread production units.

A **mobile bread oven** is a semi-trailer that can be towed to any location by a tractor. It can produce 5,000 200-gram loaves of bread in 8 hours using 22 sacks (50 kg each) of flour, 14 packets (500 grams each) of bread yeast, 11 kg of salt, and 735 liters of water. The oven is operated by 7 personnel (1 in the dough kneading section, 1 in the cut-start machine, 1 in the resting machine, 2 in the dough placement section, 1 in the oven loading section, and 1 in the basketing section). The bread is allowed to rest in a 20-foot container with glass ventilation and is distributed using suitable baskets. The oven runs on electricity and diesel fuel and consumes approximately 120 liters of diesel fuel in 8 hours (Öztürk & Koçak, 2017).

All these kitchens mentioned above are producing meals outdoor under unpredictable conditions. They are all thought or equipped to handle similar operational dimensions. In order to set properties of DFKs, it would be beneficial to detail these dimensions as much as possible.

2.2. Dimentions of DFK Operations

Operations of DFKs can be classified under the topics such as; settling, supply and store, production (preparing, cooking/baking, serving), hygiene (food, equipment, staff, media), waste/refuse management, and transportation.

2.2.1. Settling

Various measures should be taken in a food service setting with regards to equipment, layout, and site management (Will, 1993). General considerations for the site and vicinity should include scoping and impact assessment of factors such as power supply, water, drainage, toilet accommodation, showers, access and egress (also for emergency services), refuse disposal (especially fats, oils and grease), impact on neighborhood (noise, people, traffic, litter) and size of pitches (LCCC, 2019). Adequate space should be provided for all equipment, food, and activities conducted on site, and careful consideration should be given to the layout of the site. The site should ideally be level and dry underfoot, and in an area where wind cannot blow dust or other contaminants onto food or food contact surfaces. A floor plan or layout must be included with a food production application to council of DM, showing all benches, cooking equipment, storage and washing facilities (EHO, 2021). Vehicles and trailers should be easily accessible. Any safety hazards should be checked for (Archibald et al., 2010). Adequate lighting should be provided and fire safety measures should be taken. Good ventilation is important for thermal air movements and odors. Floor drains should be installed to prevent dirt buildup and facilitate cleaning (Öztürk & Koçak, 2017). These details can be referred to as a feasibility study of the area. The feasibility study can be prepared as a report including the intended production level and related hygiene needs such as environmental protection and pollution treatment, specific safety equipment, and environment compensations to the nearby affected residents (Wang et al., 2020). Accommodation facility and personal needs of staff should also be considered when settling in order not to create additional victimhoods. Covered places like tents and containers are very important not only for equipment, food, and activities but also for staff welfare.

Table 1: *Settling dimation of DFK operations*

Dimention	Title	Object	Point/ Need/ Efect
Settling	Ground	Level	Slope
			Flat
		Size	Width
			Shape
	Mains	Electric	Lightning
			Heating
		Water	Food preparing
			Stewarding
			Personnal hygiene
		Drainage	Leakage
			Accumulation
		Way	Vehicles
	People		
	Shelter	Storing	Food
			Equipment
		Working	Sections
	Accommodating	Staff	
	Environment	Pollution	Contamination
			Epidemic
		Neighbourhood	Noise
Odor			
Wind		Dust	
		Blow up	
Ventilation			

2.2.2. Supply and Store

The kitchen supply workload is estimated at 0,5 work hours per 100 meals (Kirejczyk & Schleper, 2004). When supplying food, the topics of the duration of the event, the practicality of restocking, and on-site storage capacity should be considered. Food should be sourced from reliable suppliers and close to the event as much as possible to avoid the need for storage and reduce transportation times (EHO, 2021). There must be an adequate supply of potable water. If mains supply is not available, containers of water can be used (LCCC, 2019). In summary, it is important to have an adequate supply of potable water and supply food from reliable sources, and store it properly in order to ensure food safety.

To manage food resources in disaster areas, conditions should be implemented to control the storage of food in specific regions, monitor the circulation of supplies in warehouses, and control the use of mobile kitchens during disasters (Badem, 2023). Additionally, several factors should be considered when storing food, including providing adequate space for vehicles to maneuver, protecting against pests, ensuring adequate lighting and protection from external factors, and using slip-resistant and easy-to-clean flooring materials. Food should be stored at appropriate temperatures (if possible) to prevent spoilage, and cross-contamination between raw and cooked foods should be avoided (Öztürk & Koçak, 2017). Food should not be stored directly on the ground and should be kept in enclosed containers or on shelves (EHO, 2021). Herbs, spices, and dried leftovers should be stored in a place where they will not be eaten by rats or slugs (ATMK, 2006). The tent for storage can be equipped with racks to uphold food from ground, and can also have a ground side and entrance with zippered door to prevent pests and sand. In addition to the supplies, some supports are needed during operation in order to maintain production. These support can be maintenance (electricity, water installments, mechanic problems), equipment (in cases of lacking, inadequacy or breaking), and health issues (illness, injuries, disinfection).

Table 2: *Supply-Store-Support dimentions of DFK operations*

Dimention	Title	Object / Subject		
Supply	Energy	Gas bottle	Generator	Fuel
	Food	Quality	Quantity	Timing
	Water	Potable	Washing	Backup
Store	Food	Organise	Isolate	Control
	Equipment			
	Chemicals			
	Medicals			
Support	Maintenance	Electricity	Installment	Mechanic
	Equipment	Lack	Inadequate	Broken
	Health	Illness	Injuries	Disinfection

2.2.3. Production

Food production mainly consists of preparation, cooking and serving processes. For the disaster field kitchens, menu (work description) is shaped

by possibilities/facilities and demand/need. And the menu effects the ingredients, processes, equipment and staff with its requirements. So, *menu* should be planned in accordance with need, accesibility, protectability and producibility.

Food *preparation* is the largest work activity in a field kitchen and accounts for about 32% of overall kitchen workload. Its work hours averaged 2,5 work hours per 100 meals (up to the number of staff) (Kirejczyk & Schleper, 2004). Visibility, food and human safety issues need special considerations for field kitchen production. Light-color coated media, clean water (washing, soaking, adding), lidded pans (holding, keeping), separation (raw-cooked, dirt-clean), hand washing, and potentially hazardous foods (meat, milk, eggs) are the points that should be presented when preparing. When cooking the temperature level should be high enough to kill bacteria (65°C or higher), and consuming time should be considered in order not to await cooked meal too long (Öztürk & Koçak, 2017; Archibald et al., 2010; ATMK, 2006) for the name of safety.

Serving should be organized to avoid chaos and violence. Self-service can not be an option at that psychological environment. Serving people directly can be quicker, too. Providing enough food for everyone with equal portions is important to manage crowd. Refilling the food being served can prevent the queue to linger (ATMK, 2006). A kitchen's hot serving line is typically staffed with 2-3 cooks and can maintain an extended sustainable serving rate of about 4,0-4,5 people per minute (Kirejczyk & Schleper, 2004). Crowd management is an important part of serving, as queueing and establishing movement corridors (Archibald et al., 2010). Serving meals can also be made by transferring to the places where victims are gathered at specific place or can't come. Transferring contains some challenges like contamination, temperature management and spilling. In order to lessen these risks lockable lidded pans can be important beside keeping clean transport before and after use (EHO, 2021). On-site or out-site, sometimes there can be need to pack the meals for the special menu diets or for special conditions. When serving food to groups of people with special dietary needs, such as severely ill or elderly individuals who cannot consume certain foods such as sugar or salt, it is important to plan special menus. A color-coded distribution system that everyone agrees on is necessary to manage such situations (Badem, 2023).

Table 3: *Production dimation of DFK operations*

Dimension	>>> Dependence >>>						
Production	Possibility	Energy			Menu	Process	Equipment Staff
		Supply	Ingredient Diversity	Workload			
		Storing					
	Need	Dietary	On-site		Setup		
		Service	Out-site				
		Volume	Daily				
			Batches				
		Hygiene					
	Occupational safe						

2.2.4. Hygiene

For disaster field kitchens, hygiene efforts can be handled under the titles of food, equipment, staff and media. *Food Hygiene* involves keeping the kitchen environment clean and protecting food from contamination, and controlling the temperature of food, and to prevent the growth of food poisoning organisms (Badem, 2023) (LCCC, 2019). Food hygiene efforts straight along with the supplying, storage, preparation, cooking, and serving processes (Öztürk & Koçak, 2017). Food handlers must be supervised and instructed and/or trained in food hygiene matters appropriate to their work activity. To avoid contamination, disposable gloves or clean utensils should be used to serve ready-to-eat food (EHO, 2021). In order to establish and apply these efforts conforming to *Food Safety Management* systems could ne helpful. They are not only a legal requirement but are vitally important in protecting public health and operating an effective operation. The regulations require all food businesses to identify food safety hazards, establish critical control points for food safety, establish critical limits at critical control points, establish and implement effective monitoring procedures at critical control points and corrective action plans if it is not under control (LCCC, 2019; Archibald et al., 2010).

For *Equipment Hygiene*, tables, working surfaces, shelves, counters, equipment utensils, and containers must be able to be wipe-clean (ATMK, 2006) and in good repair. Separate (and color coded) cloths should be used for cleaning raw and ready-to-eat areas, utensils, and equipment (LCCC, 2019). Weighing scales must be wiped down with a detergent-soaked cloth at the end of each workday, and it is important to cover the weighing platform with disposable cloth or protective sheeting when weighing raw meats to reduce contamination risk. Color-coded cutting boards should be used to prevent cross-contamination.

Bain-maries must be cleaned daily, stoves should be cleaned while still warm (Öztürk & Koçak, 2017).

Staff Hygiene efforts include washing hands before handling food and avoiding unhygienic behavior such as picking nose or sneezing into hands (ATMK, 2006). LCCC (2019) provides guidance on personal hygiene: Working areas must have access to a lavabo for the hygienic cleaning and drying of hands, which must be separate from any facilities provided for the washing of equipment or food. Hot and cold water (if possible), liquid anti-bacterial soap and disposable paper towels are recommended. Gloves can be used if utensils are used for handling food or if the food is fully wrapped.

Media Hygiene: In the process of ensuring food safety in field kitchens, various threats such as terrorist attacks, microbiological threats from sewage and toilets, chemical threats, epidemics, rodents, and pests should be taken into consideration (Badem, 2023). The area must be large enough for the operation carried out, with sufficient working surfaces for the separate preparation of raw and cooked products to prevent cross-contamination. Personal belongings must not be kept in food preparation areas, and lockers or cupboards should be provided. Adequate lighting and ventilation must be available to all parts of the unit to facilitate safe food handling, cleaning, and inspection (LCCC, 2019).

In summary, it is important to follow good food hygiene practices in DFKs to keep the kitchen environment clean and free from contamination by identifying food safety hazards, establishing critical control points for food safety, monitoring critical control points and taking corrective action if necessary.

Table 4: *Hygiene dimention of DFK operations*

Dimention	Title	Application	Avoidance
Hygiene	Food	Temperature control	Cross contamination
		Sectioning (raw-cooked)	
		Covering (tent, lids)	
	Equipment	Keeping in good repair	
		Color coding	
		Surface sheeting/ caring	
	Staff	Hand washing	
		Gloves wearing	
		Personal (bath, toilet)	
	Media	Chemicals (seperation)	
Refuse disposing			
Ground caring			

2.2.5. Occupational Safe

Safety measures should be taken in a food service setting in order to prevent problems from occurring. These efforts include preventing slips and trips, scalds and burns, and back problems, as well as ensuring the safe use and storage of chemicals and equipment, providing a suitably stocked first aid kit, and having fire safety measures in place. Additionally, when using liquid petroleum gas (LPG), several measures should be taken. These include keeping pipework short and avoiding contact with high temperatures, protecting pipework against abrasion, and keeping lengths of flexible rubber hose to a minimum. Appliances should be secured and fitted with flame failure devices. All LPG pipes should be terminated with a shut off valve or tap immediately before the appliance. A master on/off gas valve should be positioned inside the cooking area and adequate ventilation should be provided. Flue outlets should be made of non-combustible material and positioned at a high level. Daily checks of containers, pipework, and vents should be carried out. A complete check of the whole system should be carried out annually by a competent gas engineer. Flexible rubber hoses should be renewed if they become damaged or worn. Leakages should be checked for using soapy water and naked flames should never be used to check for leaks. Staff should be trained on the dangers of LPG and emergency procedures, as well as safe methods of changing cylinders. A 'No Smoking' sign should be displayed in a prominent position at the entrance to the unit (LCCC, 2019; Archibald et al., 2010).

Table 5: Occupational safe dimation of DFK operations

Dimension	Subject	Reason	Danger	
Occupational safe	Floor Untidiness	Uneven	Trips	
	Utensils	Wet hands	Cuts	
	Crowd	Inadequate space	Crush	
	Leakage	Water	Deformed hospie	Slips
			Deformed waterpipe	
		Electric	Deformed cable	Shock
		Gas	Deformed pipework	Flame
Temperature contact				

2.2.6. Waste and Refuse Management

The waste management measures include having an adequately sized refuse container with a fitted and foot operated lid, and bin liner for the disposal of waste, and storing waste oil in a container labelled “Waste Oil”, and collecting and disposing of wastewater in a container clearly labelled ‘Wastewater Only’. Additionally, reusing pre-used water to cook vegetables in sauces or soups if possible, having a drain that can handle large amounts of water splashing through it all at once, and digging a hole in the ground to empty dirty water into if necessary. Recycling and composting are important measures. Food remains should not be left in the kitchen overnight to avoid attracting rats. Waste and litter should be cleared regularly from stalls and surrounding areas. Responsible environmental awareness should be encouraged when transporting waste off-site to prevent contamination of other foodstuffs. The external refuse collection area should be kept clean and well-maintained. Internal and external surfaces of non-disposable waste containers must be washable and kept in good repair and condition (Badem, 2023; EHO, 2021; Wang et al., 2020; LCCC, 2019; Öztürk & Koçak, 2017; Archibald et al., 2010; ATMK, 2006; Kirejczyk & Schleper, 2004). Waste and refuse management can be seen also as media hygiene, and source management.

Table 6: *Waste management dimension of DFK operations*

Dimension	Item	Contain for
Waste Management	Oil	Collection service
	Food	Animals
	Water	Plants, trees

2.2.7. Transportation

When it comes to outdoor food production at the disaster area, one of the main issues is transportation. It can be for both to access of equipment, food and staff to disaster area and the transportation needs (supply, serve, health) over there. A container can be planned for both to transfer the food, equipment to the area, and as an accommodation shelter of staff at the area. The *container* can be transported by attaching ropes or locking devices to its four corners. It should be suitable for use in environments with temperatures ranging from -35°C to $+60^{\circ}\text{C}$, and insulated on its outer walls, ceiling, and floor chassis. The floor’s outer surface should be coated with a material that does not harbor bacteria or

pests and does not produce odors. The container's doors can only be locked from the outside but can be opened from the inside using an emergency exit door handle (panic bar) even when locked. Movable, adjustable stair steps can be placed in front of the doors. The container should be equipped with a grounding and lightning protection system and can be powered by either mains electricity or a generator (Öztiryakiler, 2021). With the stable cupboard and rack systems, some tools, equipment or chemicals can be organised, carried and stored safely. The container can also have a bathroom and toilet. This also provides isolating staff diseasterial infections. Because, safety and welfare of staff is an important issue at disaster area not only for themselves but also for the victims who eats what they produce. A van for 15 people with the moveable back seats, and with back baggage, and isolated and washable baggage ground shelter can be planned. A van can be planned for both to transfer staff to the area, and to distribute meals and the transfer needs such as illness, fatal injuries or reach supply channels at the area.

2.2.8. Equipment

Kitchen equipment is among key factors for capability of field kitchen (Will, 1993). Using equipment, fixtures, and fittings that are in good condition, constructed of smooth and impervious material, and appropriately designed for easy and effective cleaning is recommended (EHO, 2021). Different from stable kitchens like in restaurants or hotels, equipment planning of field kitchen requires special considerations for settling, supply, store, produce, serve and manage.

Covered place is pivotal for equipment, food and staff safety and security. Tents (marquees) can cover the work surfaces half or entirely. Light colors (white, or cream) are better to cook in than dark ones because it gets hot and steamy inside from the burners (ATMK, 2006). For every working section (store, prepare, cook, serve, steward) different tents can be planned. Accessibility and work flow should be considered when placing them. Ventilation is an important issue in order to minimise steam and prevent gas accumulation. When the cookers are used in tent; there should be two permanent open sides or should have one open side equal to 25% of the total wall area, with 30% of the remaining total wall area open and unrestricted (EHO, 2021). As mentioned before, a *container* with bath, toilet, vests, beds, heat, etc., can be planned as an accommodation for staff after transporting equipment to the area.

Energy is necessary for heat and light. For heating energy *gas bottles* should be suitable with the burners (ATMK, 2006). They should have enough kits with backups. Because they can be dangerous, and handling them requires some technical knowledge; some standards for warning signs has to be to follow. As an electric energy source, *generator* is an alternative to the mains. A diesel generator with sufficient capacity (at least 280 KVA) should be planned in order to operate in case of non-electricity situation (Öztiryakiler, 2021). The switches of the electrical fuses can be connected both to electricity mains and to a generator (Öztürk & Koçak, 2017). Especially for the directors of the operations, uninterrupted communication is very important. So *powerbanks* can be very helpful in order to charge phones with mobility.

For *non-stable equipment*, non-electrical alternatives should be considered as much as possible. Being versatile, stackable, color-coded and nonbreakable are another important features to consider (ATMK, 2006). Gastro Norm (GN) pans and liquid containers with lockable lids could be useful to transfer meals. Some lidded and color-coded disposable cups can be planned for serving differentiated dietary needs. As for *stable and semi-stable*, cooking or heating equipment are needed for prearrangement, cooking, serving and hot water. Boiled water is very important for preparing and hygiene in field kitchens. Choosing *boiler* instead of boiling water in saucepan over stove can be more beneficial, because it is produced for this purpose by saving energy and minimizing risks. It can be electrical or gas powered, and manually or automatically filled (IWT, 2017). Volume of it can vary up to the production capacity. For *ground stoves*, propane powered models with lots of little holes can be very useful. They should have enough and balanced legs, not sit too close to the ground. The ground the legs step on should be hard and level. They need to be kept on a non-flammable surface that can withstand the heat. A *wire brush* can be useful to wipe the rust from the surface of stove (ATMK, 2006). *Tea makers* can also be planned for victims of disaster (Ayca, et.al, 2002). The gas powered ones with enough pot holes can be planned. *Bain Marie* with both gas and electrical griddles can be useful for service (IWT, 2017) especially, if the service isn't limited in specified time. The feature and quantity of equipment can be an important issue for transferring them to the disaster area from long distances, and storing and saving them at the operation field. So, they should be planned as less as possible by choosing functional ones. To decide this it could be helpful to make equipment *justifying analyses* (object-function-volume-subject) (Sever, 2021b).

Beside these lightweight, demountable and washable equipment models can help safety and transferring.

In addition to the equipment mentioned above, there may be a need for other items: electrical appliances like long extension lead, hosepipe with fittings (spray, run-around tool), adjustable spanner to connect gas bottles, string, strong bin-bags, plastic gloves, washing sponges and brush, drying cloths, washing liquid and antibacterial surface cleaner (ATMK, 2006), digging, shovel, adze, hand axe, hoe, pliers, screwdriver, packing tape, electric tape, pinboard, notebook, plastic chair, foldable table, stepladder, stretchfilm, brush floor, broom, dustpan.

Kitchen design requires systematic consideration of many dimensions such as objectives, work, the quality and quantity of production, equipment, workflow, relationships between spaces, ergonomics, hygiene, and safety. Information about the operation, and imagination (workflow, inside view, simulation) are combined to create a picture when designing it (Sever, 2021a). Depending on the site specifications, the field kitchens can be planned and designed suitable with the work flow, accessibility, hygiene and safety.

2.2.9. Management

Each actor of DFK operation is supposed to act within shared responsibility and coherence (Atkinson & Curnin, 2020). DFK operation has four teams: Operation Team Leadership, Logistics Team, Production Team and Distribution Team. *The Operation Team Leadership* is responsible for ensuring that nutrition services are provided without interruption in the field, managing production, distribution, and logistics teams, and reporting nutrition service activities to the DM center. *The Logistics Team* is responsible for carrying out procurement tasks, ensuring transportation and accommodation for field teams, receiving and storing materials and equipment, setting up communication systems in the disaster area, monitoring service vehicles used by field teams, and periodically reporting to the Operation Team Leadership. *The Production Team* is responsible for setting up production facilities in the area, making hot food production activities in existing facilities in the field, delivering daily hot food production to distribution teams according to planning, identifying needs for production and reporting them to the Operation Team Leadership, and returning equipment and personnel back after nutrition activities have completed. *The Distribution Team* is responsible for distributing supplies such as ready-to-eat meals, tea, soup, water, bread etc. during operation. They are also responsible for carrying

out hot food distribution activities at designated points according to planning and periodically reporting distribution activities to the logistics team (Öztürk & Koçak, 2017). Field kitchens should be staffed by trained professionals such as food engineers or chefs who can prepare and distribute meals safely and effectively (Badem, 2023). In order to ensure that all necessary tasks and procedures are completed and followed in a consistent and timely manner an *operational checklist* can be used. With common items it may be included (Archibald et al., 2010):

- Checking equipment and supplies to ensure they are in good working order and properly stocked
- Verifying that all necessary permits, licenses, and certifications are up to date
- Reviewing safety procedures and ensuring that all staff are properly trained
- Conducting regular maintenance and cleaning tasks
- Monitoring and reordering supplies as needed
- Reviewing financial records and ensuring that all transactions are properly recorded
- Evaluating victims' feedback and addressing any concerns or complaints.

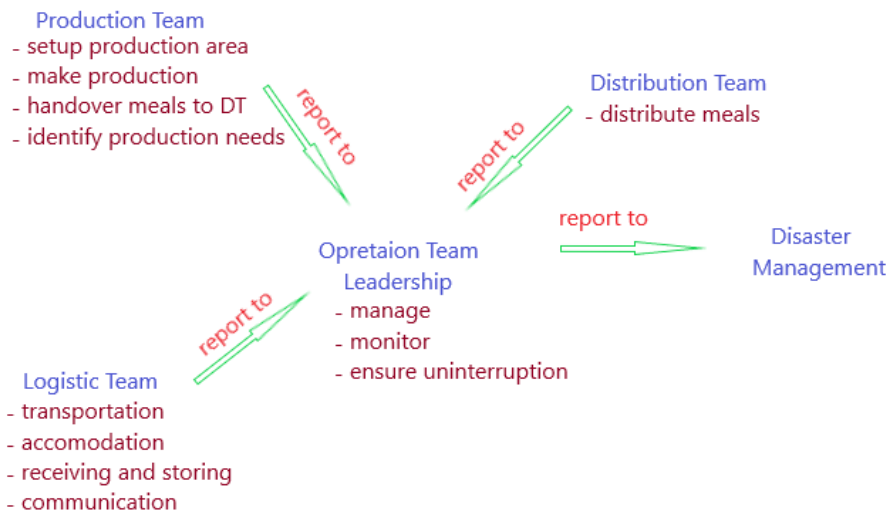


Figure 1: Management of DFKs

3. Conclusion

In this study, it is aimed to draw a frame for disaster field kitchens (DFKs) within a descriptive and explanatory point of view. Because it couldn't have been reached as an academic literature about DFKs, different anecdotes from different kinds of sources on outdoor food production and disaster nutrition management were gathered in order to explain that description.

Disaster field kitchens can be defined as a first nutrition aid of emergencies which consist of mobilized and demounted food production setup. It differs from a stable kitchen in its requirement for adjustability to unpredictable conditions such as facilities or needs. So, planning disaster field kitchens necessitates flexible considerations, professional approaches and strong precautions feeding from recorded past experiences. Because of their vital role in DM, they should be handled with special care. Planning DFKs can be made under action and equipment titles, and settling, supply, support, store, production, hygiene, occupational safe and waste/refuse management dimensions.

Setting of DFK should be handled like a feasibility evaluation of site properties for the health of afterward action. The feasibility can be prepared like a report or checklist including the production, hygiene, safety and accessibility needs. These needs are mostly shaped by menu that consist of ingredients, storing, preparing, cooking and serving details. On the other hand, the ingredients in order to produce the menu are limited in disaster conditions. So, a menu consist of accessible, savable and workable ingredients can be a good start point to plan action, equipment and staff of disaster field kitchen. Hygiene and safe of food, work and staff should be managed and supported with suitable equipment in the scope of special conditions of operation.

A value-based disaster management approach necessitates innovation, entrepreneurship, leadership, situation awareness, resilience and learning. Disasters and their management are dynamic, that is, it is more appropriate to deal each incident with innovative, entrepreneurial and leadership mentality (Sawalha, 2020). As for anything else, equipment dimension of mobile field kitchens has to be improvised (Gudmundsson, 2007). The ability to respond to disasters depend primarily on the pre-disaster settings and circumstances (Farabollini, Luger, & Mugnano, 2019). Mobilised kitchens should be kept ready by public institutions for big disasters (Badem, 2023). Their operatives must be knowledgeable and respectful of the rules, and should have all the necessary training and certifications (Marincioni, et.al, 2019). Standardisation

about norms, rules, roles, and responsibilities should be completed for success (Atkinson & Curnin, 2020). So, in order to be more ready, future studies can focus on DFKs for the name of NM. There is a need for an action and equipment plan for DFKs in order to put forth a developable model. These kind of models can help enriching training and pre-simulation plans. Also, some disaster field kitchen quality scales can be developed in order to measure the operation with decisions and action.

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CHAPTER VIII

TIME SERIES ANALYSIS FOR STREAMFLOW DATA OF RIVER DELİÇAY FROM 2002 TO 2015

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1. Introduction

Accurate prediction of flow discharge is crucial for effectively managing floods, droughts, and water resources. The province of Van involves a multitude of streams, varying in size and geographic destinations, eventually reaching the Persian Gulf. As temperatures rise during the spring and summer months, torrential rains become more frequent. Unfortunately, these heavy rainfall events often lead to devastating floods, causing significant damage to both the infrastructure and superstructure of settlements.

When assessing the impact of flood-related disasters across, Van Province ranks among the most affected regions in Turkey. Over the past 80 years, statistical studies have documented a total of 180 flooding incidents occurring in Van Province and its surrounding areas (Van İRAP,2020). Several factors contribute to this situation, including excessive precipitation during autumn and spring, saturated ground conditions due to the proximity of groundwater levels to the surface, particularly when the snow melts, the limited permeability of residential areas, and inadequate infrastructure. This study focuses on analyzing the monthly flood discharge data obtained from the River Deliçay in Van, Turkey. The Deliçay holds significant importance due to its susceptibility to flood disasters, which can have severe consequences for both human settlements and the local ecosystem.

One notable aspect of the Deliçay is its association with the *Alburnus tarichi*, commonly known as the tarek, pearl mullet, or Van fish. This unique

species of cyprinid fish is found exclusively in Turkey, particularly in Lake Van, making it endemic to the Lake Van basin. Deliçay River is a part of the tarek fish's migration route. Deliçay is also known as one of the best places to observe the pearl mullet's migration to freshwater habitats, as it showcases the remarkable behavior of these fish swimming against the current. This unique spectacle attracts the attention of tourists and nature enthusiasts alike. When the flow rate of the river decreases, adversely affecting the fish migration, the delicate ecological balance of the area is disrupted.

Precipitation, which plays a significant role in shaping the flow characteristics within a specific catchment area, occurs periodically. As a result of periodicity, river discharge also becomes periodical in most cases (Livina et al. 2003). Consequently, due to the periodical behavior of river discharge data, many studies have been conducted to model and forecast streamflow using stochastic methods (Fashae et al. 2019). In time series analysis, different approaches are present. Traditionally, classical statistical methods have been employed in the analysis of time series data. However, recent advancements in machine learning techniques have also paved the way for their application in ecological variables. In the context of time series forecasting, machine learning methods offer promising prospects. Nevertheless, it is worth noting that various studies (e.g., Makridakis et al., 2017; Maleki et al., 2018) have emphasized the superiority of classical methods over machine learning techniques in cases of univariate time series. In the related literature, there are several studies (Aghelpour and Varshavian 2020; Arora and Keshari 2021; Başakin and Özger 2020; Khatibi et al. 2012) using classical time series analysis methods, machine learning methods, or a combination of them to improve the prediction performance for river discharge data. For example, in a study conducted by Kurunç, Yürekli, and Çevik (2005) a monthly time series data spanning 13 years (1984-1996) are used to identify the best models using an autoregressive integrated moving average (ARIMA) and Thomas-Fiering approaches and according to their results, Thomas-Fiering model provides more reliable forecasting of water quality constituents and streamflow for the Yeşilirmak River compared to the ARIMA model. Şengül and Can (2011) focused on constructing a stochastic model for mean monthly streamflows for the Karasu River in Turkey. The autoregressive (AR) (1) model was found to be the most suitable based on their analysis. Khatibi et al. (2012) employed different nonlinear dynamic methods to analyze the presence of chaotic behavior in the river stage and discharge time series at the Sogutluhan hydrometric station in Turkey. For modeling and forecasting the daily flow of the Zilakirud River in

Iran, stochastic models and artificial intelligence (AI) models are compared for their accuracy in predicting river flow (Aghelpour and Varshavian 2020). According to their results, the AI models demonstrate higher accuracy compared to the stochastic models. Arslan, Kale, and Yavuz Sönmez (2020) conducted a study to determine the trend and estimate the streamflow of the Gökırmak River by using an ARIMA model; the results indicated a change point in 2008, revealing a decreasing trend in the streamflow from the past to the present and forecasting a continued decreasing trend in the future, which may be attributed to climate change, providing preliminary knowledge of the streamflow trend for the Gökırmak River in Turkey. Musarat et al. (2021) forecasted the water level in the Kabul River using ARIMA method. Similarly, Singh and Ray (2021) focused on synthetic stream flow generation using the ARIMA model for the Gomti River in India. In addition, a hybrid method, combined with an ARIMA model and an adaptive neuro-fuzzy inference system (ANFIS), is utilized to minimize errors and improve performance for estimating the re-aeration capacity in rivers. Fashae et al. (2019) compared the artificial neural networks (ANN) and ARIMA techniques for modeling and forecasting the streamflow of the River Opeki. Their results indicate that ARIMA outperforms ANN in terms of various criteria, and the ARIMA model is superior for modeling and forecasting the River Opeki discharge.

As mentioned, the ARIMA method has been proven to outperform machine learning algorithms in some cases. Furthermore, the ARIMA method is highly effective in modeling univariate time series. Considering this, along with the river's susceptibility to flooding and its ecological significance for pearl mullet migration and tourism potential, the water discharge of River Deliçay is modeled for the first time using the Box and Jenkins methodology, also known as the ARIMA technique following the identification, estimation, validation, and forecasting steps.

The remaining parts of the study are structured as follows. Section 2 provides a detailed explanation of the data set used, the ARIMA method, and the analysis steps. In Section 3, the results of the analysis are presented. Finally, Section 4 concludes the study with some final remarks.

2. Data and Method

2.1. Data Set

The monthly maximum flow discharge of the River Deliçay from 2002-2015 is employed in the analysis. The data set used in this study is collected

from the General Directorate of State Hydraulic Works' website and can be provided by the author upon request.

2.2. Method

Generally, ARIMA models (p, d, q) are denoted by the non-negative integer parameters p, d, and q. Here, p represents the order of the autoregressive model, d indicates the order of integration, and q signifies the order of the moving-average model. The general expression for an ARIMA (p, d, q) model is presented as follows:

$$\varphi(L)(1-L)^d Y_t = \Phi(L)\varepsilon_t$$

In the given context, $\varphi(L)$ and $\theta(L)$ are the autoregressive and moving average polynomials, respectively. The value of the flow discharge measurement is Y_t at a specific time (t) and ε_t is the uncorrelated random error term with zero mean and unit variance (white noise), and L is the lag operator.

When seasonality considered, an ARIMA (p, d, q) (P, D, Q) s model is represented as following

$$\varphi_{AR}(L)\varphi_{SAR}(L^S)(1-L)^d(1-L^S)^D Y_t = \theta_{MA}\theta_{SMA}(L^S)\varepsilon_t$$

φ_{AR} and φ_{SAR} are the ordinary autoregressive and seasonal autoregressive term respectively and θ_{MA} and θ_{SMA} are the ordinary moving average and seasonal moving average polynomial respectively, and $(1-L)^d$ is an ordinary and $1-L^S$ is the seasonal difference term, respectively (Kouassi, Wandan, and Mbow 2020).

The data set is analysed utilizing the Box and Jenkins methodology, following the steps of identification, estimation, validation, and forecasting (for more details on the Box and Jenkins methodology, see Pena, Tiao, and Tsay (2011)). Furthermore, stationarity is a crucial assumption for the ARIMA model. Initially, the stationarity of the series is assessed by employing the Augmented Dickey-Fuller (ADF) and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests.

Once the stationarity of the series has been verified, the identification step involves evaluating the potential ARIMA model(s) suitable for the data. In the subsequent step, the coefficients of the model are estimated, and corresponding Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) values are provided.

During the validation step, the predictive performance of the model is assessed through residual analysis and cross-validation. In this stage, the Kolmogorov-Smirnov (KS) is utilized to examine the normality of the residuals.

Additionally, the Ljung-Box test is employed to assess the randomness of the residuals.

The cross-validation process involves setting aside the observations until 2013 for training purposes, while the remaining portion of the dataset is reserved for testing. To evaluate the predictive performance of the cross-validated model, various forecast errors, including root mean square error (RMSE), mean absolute scaled error (MASE), mean absolute percentage error (MAPE) and mean absolute error (MAE) are employed.

3. Results

In this section, a seasonal ARIMA (SARIMA) model is utilized to analyze the monthly flow discharge time series. The evaluation of the results is based on the aforementioned criteria. The R software is employed for analyzing the data.

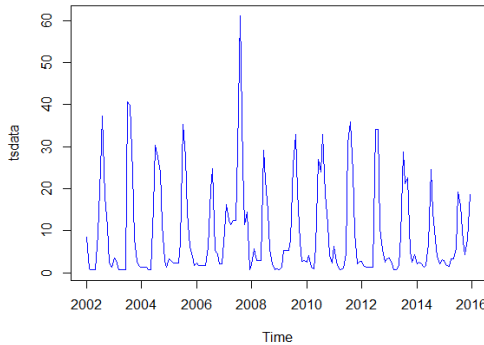


Figure 1. River Deliçay flow discharge from 2002 to 2015

Flow discharge time series is given in Figure 1. The natural logarithm of the flow discharge time series is taken to stabilize the variance. Table 1 presents the p-values and test statistics for the ADF and KPSS tests. The null hypothesis for the ADF test is the series has a unit root, namely non-stationary, and the null hypothesis for the KPSS test is the series is trend stationary. The p-values and test statistics for the ADF and KPSS tests are given in Table 1. Based on the information provided in Table 1, when no differencing is applied ($d=0$), the null hypothesis for the ADF test at a confidence level of 95% is rejected. This rejection suggests that the series is stationary rather than possessing a unit root. In addition, the null hypothesis cannot be rejected for the KPSS test, indicating that the series is likely trend stationary and there is no need for differencing.

Table 1. The stationary tests statistics and p-values

	ADF Test	KPSS Test
Difference	d=0	d=0
Test statistics	-7.36	0.060038
p-values	<0.01	>0.01

The plots of ACF and PACF against the lag values are given in Figures 2 (a) and (b) for the monthly flow discharge time series. According to Figure 2, the analysis of the autocorrelation functions revealed significant variations, supporting an autocorrelation pattern in the time series. Notably, strong correlations are observed at periodic intervals, suggesting a recurring pattern. The significant lags at 12,18 and 24 for ACF and an exponential decay in PACF is observed in Figures 2 (a) and (b). Hence, a 12-months seasonality is considered as a potential factor influencing the data. Consequently, seasonal differencing can be useful. The ACF and PACF plots for seasonal differenced (D=1) series are given in Figures 2 (c) and (d). With the help of Figure 2, orders of the non-seasonal and seasonal AR and MA components are determined. Hence, as the most suitable among many candidate models, SARIMA(2,0,1) (1,1,2)[12] model is selected. It should be noted that the ACF and PACF can be analyzed in different ways to determine other potential models.

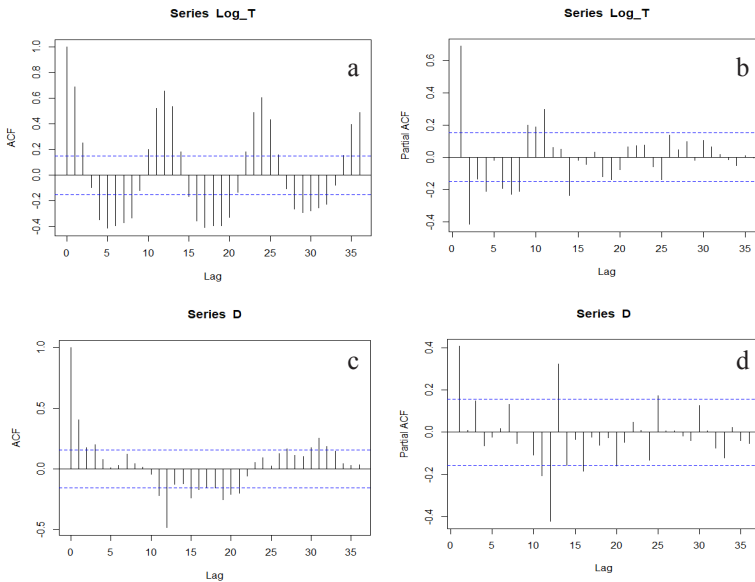


Figure 2. The autocorrelation functions for the original and seasonally differenced series.

In Table 2, coefficients for the components in the selected model are provided. Significant coefficients in the model are demonstrated with the asterisk mark in Table 2 (<0.05:*,<0.01:**,<0.001:***).

Table 2. The coefficients AICc and BIC values of the SARIMA(2,0,1)(1,1,2)[12] model

Coefficients						
	Ar1	Ar2	Ma1	Sar1	Sma1	Sma2
	-0.304 **	0.366 ***	0.938***	-0.824*	-0.02	-0.594
s.e.	0.10	0.09	0.06	0.33	0.36	0.33

s.e.: Standart Errors

Except for seasonal moving average components, all components are significant according to Table 2. It should be noted that the significance of the coefficients is not the main factor for selecting an optimal model in describing time series. AICc and BIC values are 326.15 and 346.74 ,respectively.

Table 3. Residual Analysis

Model	Ljung-Box p-value	KS p-value
SARIMA(2,0,1)(1,1,2)[12]	0.3781	0.3969

Table 3 presents p values for Ljung-Box and normality tests. According to Table 3, the residuals of the model are not distinguishable from white noise and follow a normal distribution. Finally, the model’s validity is checked with one last step before forecasting future values of the flow discharge time series. A cross-validation conducted for SARIMA(2,0,1)(1,1,2)[12] model and forecast errors are provided in Table 4. It can be said that when the forecast errors are close to each other, the model has a good predictive ability. According to the errors in Table 4, it can be said that the model’s predictive ability is good.

Table 4. Forecast errors for the model

	ME	RMSE	MAE	MAPE
Train	0.0400764	0.586987	0.43193	24.47202
Test	-0.1896967	0.51052	0.427481	31.29426

Actual and predicted values of the series demonstrated in Figure 3 showing that the model describes the data well.

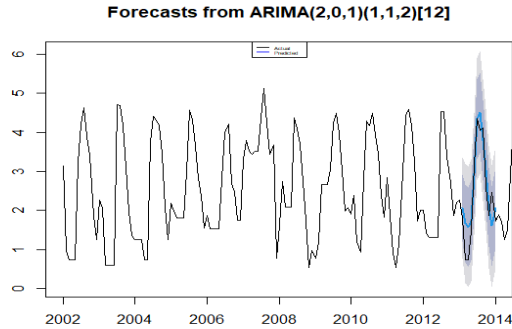


Figure 3. The actual and predicted values for the flow discharge series

The shaded areas depicted in this figure indicate that the predictions of the series fall within the 95% confidence interval. This suggests that the predicted values have a high probability of being accurate and reliable, as they align with the expected range of values based on the confidence interval. Forecasted values for the next nine months of the flow discharge series are obtained as 20.5403, 9.2414, 5.6854, 4.4780, 6.3017, 17.7055, 71.9458, 60.9725, and 31.5968.

4. Conclusion

Modeling hydrological data plays a significant role in assessing the risks associated with floods and droughts, as well as in the development and management of water resources. In this study, the flow discharge of the River Deliçay is predicted using the a seasonal ARIMA model. According to the results suggested model performs well in forecasting future values of flow discharge time series. River Deliçay, located in Van province in Turkey, has tourism potential as it is one of the points where the migration of endemic pearl mullet to freshwater habitats can be observed. In addition, the river has caused floods at various times. It is hoped that this study will make a meaningful contribution to efficiently planning socio-economic developmental activities and addressing the need to plan strategies to mitigate water-related disasters.

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