SECURE URBAN ENVIRONMENTS BY DESIGN: ANALYSIS OF KONAK SQUARE DESIGN THROUGH "CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)" PRINCIPLES

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ABSTRACT

SECURE URBAN ENVIRONMENTS BY DESIGN: ANALYSIS OF KONAK SQUARE DESIGN THROUGH CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED) PRINCIPLES

Better design can play a crucial role for reducing crime and creating secure urban environments. In this regard, planners and designers have begun to acknowledge the importance of Crime Prevention through Environmental Design (CPTED). However, unlike foreign countries, crime prevention through planning and design context has not been considered and integrated with the planning and design studies in Turkey.

This study is aimed to fill this vital gap. Therefore, the main purpose of the study is to examine the relationships between crime (as well as fear of crime) and the spatial built environment. To do that, as one of the recently redesigned public space of İzmir, Konak Square Design has been analysed through CPTED principles. In that case, a comparison of recent design of Konak Square and CPTED principles are carried out. Then, if design features of the square complies with CPTED principles or not, found out. Finally, additional recommendations are made that have not been covered by existing CPTED principles to improve security considerations of public places.

For this purpose, interviews have been conducted with the İzmir Police Department and also the official crime records of the area have been obtained from them. Besides using cross-correlation technique, systematic observations and questionnaires have been used as research methods of this study.

Consequently, this particular study did find support for the causal relationships between the occurrence of crime or feelings of insecurity and characteristics of the spatial built environments. Therefore, the study has emphasized that, planning and design issues should be considered carefully in order to create safer and livable public spaces.

ÖZET

TASARIM YOLUYLA GÜVENLİ KENT MEKANLARI YARATILMASI: ÇEVRESEL TASARIMLA SUÇUN ÖNLENMESİ (CPTED) PRENSİPLERİNİN ETKİNLİĞİNİN KONAK MEYDANI TASARIMI ÖRNEĞİNDE ÖLÇÜLMESİ

Kentlerde meydana gelen suç olaylarının azaltılmasında ve güvenli kent mekanları yaratılmasında, söz konusu bu alanların tasarım özellikleri çok önemli bir rol oynamaktadır. Bu bağlamda, plancılar ve tasarımcılar, çevresel tasarım yoluyla suçun önlenmesi (CPTED) kavramının önemini vurgulamaktadırlar. Ancak, gelişmiş ülkelerin aksine, çevresel tasarım yoluyla suç olaylarının ve suça maruz kalma korkusunun önlenmesi kavramı ülkemizde planlama ve tasarım çalışmaları ile bir arada ele alınarak yeterince bütünleştirilememiştir.

Çalışmanın temel amacı bu büyük boşluğu doldurmaktır. Bu sebeple, tezin amacı, suç, suça maruz kalma korkusu ve mekansal özellikler arasındaki temel bağlantıları ortaya koymaktır. Bu bağlamda, son yıllarda yeniden tasarlanmış bir kent mekanı olan Konak Meydanı'nın son hali CPTED ilkeleri doğrultusunda analiz edilerek ve bu mekan örneğinden yola çıkılarak, kent mekanlarında güvenliğin çevresel tasarım yoluyla arttırılmasına yönelik ilave önerilerde bulunulmaktadır.

Bu amaçla, İzmir Emniyet Müdürlüğü ve Polis Teşkilatı ile görüşmeler yapılmış ve sözkonusu alana dair resmi suç kayıtları çıkarılmıştır. Bu verilere ek olarak, yapılan anketler ve gözlem sonuçları istatistiksel olarak değerlendirilip anlamlı bulgulara ulaşılmıştır.

Sonuç olarak, bu çalışma kentsel mekanlarda meydana gelen suç olayları ve duyulan güvensizlik hissi ile bu alanların yapısal özellikleri arasında sıkı bir ilişki ve etkileşim olduğunu ortaya koymaktadır. Böylelikle, söz konusu çalışma, daha güvenli ve yaşanabilir kent mekanlarının yaratılmasında planlama ve tasarım süreçlerinin önemini vurgulamaktadır.

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CHAPTER 1

INTRODUCTION

1.1. Definition of the Problem

Crime is a daily occurrence of the contemporary urban life. Particularly in urban environments people experience crime, fear of crime and also feelings of insecurity in public places. Especially, in every major city, there are increasing rates of street crimes and violence against person. It is obvious that, particular types of crime and fear of crime can be reduced by better design and maintenance of the built environments. In this case, increasing attention is being paid to crime prevention through environmental design concept. To effectively tackle the problem of crime, it must be considered that, crime has different aspects including psychological, social, economic and spatial. At that point, there are some issues such as; types and trends of crime, the cost of crime and the fear of crime, etc.

Understanding the types and trends of crime is crucial. Unfortunately, crime levels have increased all over the world. In addition to the ordinary crime, new types of crime emerged such as; fraud or internet crimes, etc. On the other hand, risk of being a victim of crime varies across different groups of people and types of locations. For instance; women, elderly or people with disabilities are more vulnerable to crime and they experience a greater level of fear of crime in their environments than the others.

Crime and fear of crime diminishes people's quality of life. Considering the urban areas, it is possible to say that fear of crime is as much a problem as crime itself. Fear of crime depends on not only some personal features such as; age, gender, but also physical environment. It is obvious that, crime and anti-social behaviour are more likely to occur if design of the built environment is unsuccessful. This is why, in areas where opportunities for crime and fear of crime are high, environmental design can play a crucial role in reducing opportunities for crime and improving perceived safety.

In addition to these issues, crime imposes a huge cost on society. Estimates of the social and economic costs of crime can have an important role in achieving the greatest impact on crime. Briefly, economic costs can be taken to mean financial costs that can be expressed in cash terms, such as; vandalized property. However, social costs

can be taken to mean the impacts on society that cannot be readily expressed in cash terms. It is crucial that, they can increase the awareness of the public in general of the full impact of crime on society. Therefore, estimates of the costs of crime enable us to make better and more effective decisions.

Consequently, better design and maintenance of the spatial built environment can play a crucial role for reducing crime and creating secure urban places, including environmental planning, architecture and, to the design of the products. In this regard, urban planners, architects and industrial designers have begun to acknowledge the importance of Crime Prevention through Environmental Design (CPTED), as it is known in the US and Canada etc., or what in Europe is known as Designing Out Crime.

1.2. Aim of the Study

Using design to reduce opportunities for crime is known as Crime Prevention through Environmental Design, in other words "CPTED". CPTED is an approach combining psychology and behavioural theory that focuses attention on the physical environment, rather than the social environment and tackles crimes such as; street robbery, vandalism, and also fear of crime in public places. CPTED also advocates that better design and effective use of the built environment can lead to a decrease in crime and fear of crime, as well as an improvement of the quality of life.

Unlike foreign countries, crime prevention through planning and design context has not been considered and integrated with the planning and design studies in Turkey. In order to fill this vital gap, this study is aimed to examine the relationships between the occurrences of crime, as well as fear of crime, and the spatial built environments. To do this, the recent design of Konak Square has been analyzed through CPTED principles. In this case, first of all, a comparison of last design of Konak Square and CPTED principles has been carried out. Second of all, if design features of the square complies with CPTED principles or not, found out. Finally, additional recommendations and principles are developed that have not been covered by existing CPTED principles to improve safety considerations in the square.

1.3. Organization of the Study

The main purpose of Chapter 2 is to examine the every aspects of crime. In this case, different approaches to crime are explained in order to get better understanding of crime which are; definition of crime, causes of crime, types and trends of crime, the economics and costs of crime, vulnerability to crime and finally, the fear of crime.

In addition, different approaches to Crime Prevention through Design context have also been considered. It is obvious that, better design can play a crucial role for reducing crime and feelings of insecurity in public places. In this part of the study, crime prevention through design context has been explained in varied titles including; crime prevention through urban design, crime prevention through environmental design and finally, crime prevention through product design, which refer to each other in many ways.

In Chapter 3, early crime prevention initiatives are analyzed by considering the main aspects which led to crime prevention through environmental design. Although Crime Prevention through Environmental Design has been effectively used for many years to reduce crime and improve a community's quality of life, it has been criticized for its limitations and to search how it could be improved. In this case, different approaches and theories on crime are considered in many ways to find out the relations between particular types of crime (as well as fear of crime) and spatial built environment. In addition, in Chapter 3, recent researches on CPTED are explained considering the articles and dissertations on crime and crime prevention through environmental design.

Chapter 4 includes the methodology and findings of the study. Konak Square in İzmir has been a recently designed public space and this is why it has been chosen as a case study area. At the same time, the selection of Konak Square depends on its different characteristics such as being an area located in the geometrical centre of the city and also being one of the crucial intersection points of the city. In this study, design features of the area and whether they have any impacts on crime and fear of crime or not are considered in the light of the official crime data, systematic observations and user questionnaire. Official crime data has been obtained from the records of the İzmir Police Department. The data includes information about the type and number of crimes, crime time, profile of offenders, profile of victims, crime scenes, etc. that has already

occurred on the selected area. On the other hand, physical characteristics of the selected area are measured by analyzing the plan. Characteristics to be recorded are considered to affect either actual crime or the fear of crime. Besides using cross-correlation technique, user questionnaires and systematic observations have been used as research methods of this study.

Consequently, in Chapter 5, final evaluation of the study is given through discussions and recommendations.

CHAPTER 2

DIFFERENT APPROACHES TO CRIME AND CRIME PREVENTION THROUGH DESIGN

2.1. Understanding Crime and Fear of Crime

Although the question -what is crime- seems to have a simple answer, it does not have a clearly defined answer. People have differing views of what is considered as a criminal act and what is not. Anxiety and fear of crime diminishes people's quality of life. Particularly in urban environments people experience crime or fear of crime and also feelings of insecurity in public places. Unfortunately, crime and fear of crime are getting one of the most serious problems of cities and today, there are increasing rates of street crimes and violence against person.

Crime and anti-social behaviour are more likely to occur if design of the built environment is unsuccessful. It is obvious that, particular types of crime and fear of crime can be reduced by better design and maintenance of the built environment. That is why increasing attention is being paid to crime prevention through design. Although, crime is a crucial problem for each people who live in cities, risk of being a victim of crime varies across different groups of people and types of locations. For instance; women, elder people, and people with disabilities are more vulnerable than the others and they experience a greater level of fear of crime in their environments than do males. Briefly, every person who lives in cities is potential victim for any crime incidents.

2.1.1. Causes of Crime

R.J.Hernstein assumes that behaviour occurs because there is an occasion for it, and because it has some probability of earning immediate desired consequence. This can be economic gain such as; money or it can be a personal satisfaction, as well. According to Hernstein, they include a mixture of the objective risks for getting caught and the subjective penalties of conscience. Hernstein also argues that, people who commit criminal acts regularly are simply people for whom the positive aspects

sufficiently outweigh the negative ones, and who also have the opportunity to break the law (Hernstein 1995).

Theorists on crime have developed a number of complex models to explain the crime and anti-social behaviour. In this case, there are numerous causes for crime. Unrestrained emotions have the greatest effect on many of those who commit violent crimes. Another factor is that assumed to have an effect on criminal activities is the combination of high levels of economic and social aspirations on the one hand and the poverty experienced on the other. In addition to crimes motivated by this discrepancy between aspirations and opportunities, it is crucial that, a great deal of urban street crime is purely opportunistic in nature, reflecting impulsive or spontaneous reactions to opportunities that present themselves. Particularly, some types of crime are likely to be affected by spatial design and including Charles Murray, many researchers acknowledge the existence of this relationship.

> Common sense and everyday experience tell us that the physical environment is related to the risk of crime. That is why most people avoid poorly lighted streets and run-down neighborhoods, thinking that they are more vulnerable targets in such places. This calculation about the specific change of becoming a victim goes hand in hand with another common sense understanding about crime: one of our best protections against crime is to live in a community where neighboors watch out for each other and stand ready to call the police or to intervene directly when they spot a malefactor (Murray C. 1995, p.349).

2.1.2. Types and Trends of Crime

Criminal acts have usually been classified as violent crimes and crime against property. Violent crimes are crimes against person, including; murder, rape, wounding, etc. On the other hand, crimes against property include fraud, theft, burglary, forgery and vandalism. Crime prevention studies have shown that people experience crime and feelings of insecurity in urban environments. Particularly, in every major city, there are increasing rates of street crimes and feelings of insecurity in public places.

Unfortunately, crime levels have increased all over the world and today, in addition to the ordinary crime, new types of crime emerged such as; fraud or internet crimes, etc. At that point, understanding the types and trends of crime is crucial.

In addition to the types and rates of crime incidents, fear of crime and also feelings of insecurity are becoming significantly higher in many cities. Therefore, the important thing is that people who fight against crime including, governments, police

and designers, should always consider that understanding the types and trends of crime is crucial in order to get more effective and creative solutions.

2.1.3. The Economic and Social Costs of Crime

Crime imposes a huge cost on society. A cost of crime measure therefore provides a justification for resources spent on reducing crime, and provides an indication of how successful the government is at reducing the impacts of crime. In addition, estimates of the social and economic costs of crime can have an important role in achieving the greatest impact on crime for the money spent. They can increase the awareness of the public in general of the full impact of crime on society and the potential gains that could result from reductions in crime.

At that point, estimates of the costs of individual crimes enable us to make better decisions about which policy measures are the most effective, by allowing meaningful comparisons to be made of the costs and benefits offered by alternative crime reduction measures. The economic or social cost of crime is essentially a measure of the impact of crime on society and it gives us a way of measuring the impact of policies aimed at reducing crime and fear of crime.

In this case, it is possible to use the terms economic cost and social cost to mean the full impact of crime on society or to individuals. Economic costs are taken to mean financial costs that can be readily expressed in cash terms, such as; stolen property, etc. However, social costs are taken to mean the impacts on society that cannot be readily expressed in cash terms.

It is crucial that, it would be misleading and incomplete to measure the economic cost of crime in terms only of those costs that are already expressed in cash terms as this would omit important impacts of crime and so would tell only part of the story. For instance; crimes such as robbery or violence against person, which have significant intangible costs, would appear much less serious than they actually are, while other crimes would appear relatively more serious. Therefore, it is crucial to try and quantify all the impacts of crime in common terms as far as possible.

2.1.4. Vulnerability to Crime

Risk of being a victim of crime varies considerably across different groups, types of buildings and locations, as well as different public places. Particularly, in urban areas, vulnerability to crime keeps people off the streets, plazas, and public transit, particularly at night. In other words, it can be expressed as a substantial barrier to participation in the public life of cities.

It is obvious that, level of the fear of crime is unequally distributed. For instance, women, elder people and people with disabilities are more vulnerable to crime than the other users of the cities. That is why, they usually feel insecure in urban public spaces and they often limit their activities because of the fear of crime. In this case, it must be considered that, fear of crime not only limits people's access to opportunities and facilities, but also affects the livability of the city.

Women are very specific about the places that make them feel unsafe, such as; poorly-lit areas and places that are isolated and deserted. Considering the previous researches in the literature on crime and fear of crime, the most fearful areas in cities can be identified such as; parks, public transit areas, parking places, and deserted streets. Therefore, people who live in cities do not prefer using these dangerous places in order to avoid being a victim of any crime incident. In addition, places which allow some specific groups to live such as; homeless people, strays, drug addictives, etc. also increase the risks, particularly for people who are more vulnerable to crime. At the same time, vulnerability to crime can be influenced by a variety of factors including the demographic and psychological profile of the individual, and the physical and social characteristics of the environment.

2.1.5. Fear of Crime

In urban areas, fear of crime constitutes as much a problem as crime itself. Fear of crime is often associated with fear for one's personal safety, particularly, safety from violent crimes and physical or sexual harassment in public when alone, especially after dark. Thus, the fear of crime and feelings of insecurity keeps people off the public places where crime or anti-social behaviour are likely to occur including, public transit areas, subways, bus stops, poorly-lit and managed areas, etc. In other words, it creates a barrier to participation in the public life and consequently it also reduces the livability of the city.

It is obvious that, level of the fear of crime is unequally distributed considering the varied user profiles and places of cities. For instance; women and people with disabilities are more vulnerable to crime than the others. Therefore, they are more fearful in public spaces and they often limit their activities in order to protect themselves from any types of crime or fear of crime. Additionally, fear of crime also limits people's behaviour to access to opportunities and facilities in their public environment. For example; fewer people use streets; or city services may not be used by the people who really need them.

People, who live in cities, identify "highly-risky crime areas and dangerous places" as dark or deserted streets and public areas, parks, public transit areas, parking places, as well as places which allows some specific groups to live such as; homeless, strays, drug addictives, etc. Particularly women are very specific about the places that make them feel unsafe such as; poorly-lit areas and places that are isolated or deserted.

A variety of environmental and social features have been correlated with fear of crime. Characteristics that contribute to fear of crime do not always match those that contribute to crime. Areas that are feared are not always areas of high crime (Kirk 1988), and people often have an exaggerated perception of the level of crime in specific areas (Pyle 1980). In addition, individuals who are, because of their demographics, statistically less likely to be victimized often show the highest levels of fear of crime.

As mentioned, fear of crime is influenced by a variety of factors including the actual crime rate, the demographic and psychological profile of the individual, and the physical and social characteristics of the environment. Many studies suggest that fear of crime is not necessarily related to actual victimization, and crime affects more than its

direct victims. Feelings of personal safety may be more closely correlated with individual demographics. For instance; some ethnic minorities or people with disability also experience higher levels of fear than the others. Studies also find that women and the elderly are more fearful (Riger and Gordon 1981, Nasar 1982 and Warr 1984). Perceptions of safety and vulnerability to crime differ significantly between men and women (Riger and Gordon 1981, Westover 1986, Kirk 1988, Loewen 1993).

On the other hand, lower-income groups tend to experience higher levels of fear than upper-income groups. While many members of these groups may actually experience higher levels of victimization because they either tend to live in higher crime areas or more often targeted by hate-crimes, some more fearful groups do not experience higher victimization rates. Studies also find that women and the elderly are more fearful (Riger and Gordon 1981, Nasar 1982, Warr 1984). Some statistics report that women have lower victimization rates for many types of crimes, yet women report a higher level of fear of crime.

Perceptions of safety differ significantly between men and women (Riger and Gordon 1981, Westover 1986, Kirk 1988, Loewen 1993). As a specific group, the elderly also have a greater fear of crime, although they have the lower rate of victimization. Similarly, fear of crime may be affected by many factors including changes brought about by experiences.

Considering women's reactions to crime Riger and Gordon (1981) have also explained that most female respondents felt themselves to be weaker than the average person of their gender. Women are more likely to use avoidance tactics such as restricting their nigh-time activities. In other words, women's greater fear limits their use and enjoyment of the public environment.

Herzog and Smith (1988) have examined that characteristics of the built environment contribute to fear of crime in public areas and these features can be both physical and social. Physical features include maintenance, potential hiding places for potential offenders or criminals, poor lighting, isolation, vegetation, potential escape routes, etc. that have a great impact on increased fear of crime of potential users of the area.

2.2. Different Approaches to Crime Prevention through Design

2.2.1. Crime Prevention through Urban Planning

According to ODPM, crime prevention through design concept uses planning, design and place management strategies to reduce the likelihood of necessary crime ingredients from intersecting in time and space. Community ownership of public space sends positive signals to the community. On the other hand, effective planning, design and space management helps to stimulate natural community policing. ODPM has explained that, this drawing together of disciplines is crucial, as the delivery of livable communities requires a sound appreciation of both crime prevention and urban design. It also requires planners, designers and crime prevention practitioners to work closely together on the ground. In this case, the attributes of safer places can be explained as below;

Access and movement: places with welldefined routes, spaces and entrances that provide for convenient movement without compromising security

Structure: places that are structured so that different uses do not cause conflict

Surveillance: places where all publicly accessible spaces are overlooked

Ownership: places that promote a sense of ownership, respect, territorial responsibility and community

Physical protection: places that include necessary, well-designed security features

Activity: places where the level of human activity is appropriate to the location and creates a reduced risk of crime and a sense of safety at all times

Management and maintenance: places that are designed with management and maintenance in mind, to discourage crime in the present and the future (ODPM 2004).

It is crucial that, planning's contribution to crime prevention must be based upon analysis of the local situation. This means that similar problems lead to different responses in different places. In this case, thinking carefully about how each of the attributes relate to the specific local context will help to reach the appropriate responses. Therefore, planning decisions must be made in full consultation with all partners and be based on policies for planning and crime prevention which reflect the local situation and the views of those who will manage and live with the outcome of those decisions. The

important thing is to find out how planning decisions have been made in a range of local situations and in response to particular local needs.

One way to estimate how the particular configurations of existing and planned features in a location might affect crime is to think how criminals or potential offenders might react to the use and development of land and also, how the environment might affect the criminals' assessment of risk and thus their decision to offend.

Local planning authorities must therefore consider the likely effect on crime and disorder in their area when drawing up their planning policies, determining planning applications and discharging other planning responsibilities. Planners need to be aware of the crime risks of a location and understand the effect of potential changes to the built environment before deciding on possible solutions and appropriate policy responses (ODPM 2004).

It is important that crime reduction-based planning measures must be based on a clear understanding of the local situation, avoiding making assumptions about the problems and their causes. In this case, gathering and analysing information on some particular cases is crucial, such as;

- What kind of crime incidents or anti-social behaviours are taking place and how often?
- Where and when?
- Why and who are the offenders?
- What properties or victims are involved? etc.

Working closely with the police, planners need to be able to identify the crime risks present in specific locations in addition to identify likely consequences of those crimes for the community and for individuals. On the other hand, the likely causes of crime in a given area need to be established and work out how they can be reduced through changes to the built environment through the planning process.

At that point, the different stages of the planning application process should be managed effectively to deliver safer development:

In the pre-application stage, planners, environmental designers and local governments should closely work together before the application is submitted. Pre-application process should expose any potential conflicts in meeting any crime and urban design objectives arising from a proposal, the resolution of which should result in

higher quality planning applications. In addition, they should also be encouraged to talk through aspects of their proposals with the local community, the planning authority and the police.

Recommendations should be sought from the police on all aspects of crime prevention, including possible local causes of crime, the desirability of certain facilities and detailed design considerations. Police advice should also be considered along with wider planning objectives, and should be an important factor in discussions between design professionnals and the local authority.

During the planning application stage, all planning applications should demonstrate how crime prevention measures need to be considered. This stage also should be part of the design statement, and could usefully reflect each of the attributes of safe and sustainable places.

At the beginning of the planning decision process, it must be considered that, crime prevention can be a material consideration in the determination of planning applications. Local planning authorities should consider whether proposed development could be amended or planning conditions imposed that would contribute to the prevention of crime and fear of crime.

Where proposed development would undermine crime prevention or the promotion of community safety and the concerns are relevant to land use planning, the application could be refused planning permission where refusal is consistent with the development plan. On the other hand, crime prevention considerations should be given weight where the potential crime risk is expected to be high or the consequences for the community or vulnerable groups (ODPM 2004).

2.2.2. Crime Prevention through Environmental Design

Crime Prevention through Environmental Design, in other words, CPTED fosters positive community interaction and influences offender decision-making. It uses planning, design and place management strategies to reduce the likelihood of necessary crime ingredients from intersecting in time and space. CPTED reduces crime opportunities by increasing the risk to offenders, increasing the effort required to commit crime, reducing opportunities for excuse making and reducing the likely rewards of criminal behaviour (Clarke and Homel 1997).

The concept of CPTED was originated with Jane Jacobs (1961)'s book, "The Death and Life of Great American Cities". Jacobs observes the physical environment in order to gain a perspective on crime and the interconnection of the planned city. She also investigates how people occupy and behave in the space and determines that in order for a city street to be successful it must have three main qualities which are demarcation, ownership of public space and constant users.

On the other hand, Oscar Newman published "Defensible Space" in 1972. Unlike Jacobs, who focused on the greater city, Newman focused on the architectural layout of individual buildings and the unhealthy effect it was creating for the residents. In addition, he also examined that how the design of public housing units can have an impact on residents' ability and willingness to maintain and control the security and use of areas near their homes. In addition, Newman argued that certain environments and designs can generate fear in residents.

As already mentioned CPTED advocates that the proper design and effective use of the built environment can lead to a decrease in crime and the fear of crime, as well as an improvement of the quality of life.

The term "Crime Prevention through Environmental Design" was coined by the criminologist, C. Ray Jeffery and has had a profound influence on the intellectual development of CPTED. His book focused on criminal psychology and behaviorism rather than the built environment. Jeffery separates CPTED from defensible space by arguing that crime prevention is either; physical design effecting the physical environment or social control effecting social surveillance (Jeffery 1990).

According to Jeffery, there have been three models of crime control; retribution, deterrence and treatment. He contended that both the retribution and deterrence models had been resounding failures, and that treatment had failed because of lack of scientific knowledge about behavioral change and treatment methods. He advocated that a model of prevention that included not only architectural design, but also human behavior and learning theory. In that case, crime prevention involved any activity that would reduce or eliminate a crime before it is committed such as; physical design measures for streets, parks, buildings etc. as well as, changing the behavior of potential victims and criminals. Therefore, Jeffery has explained that the criminal act was a product of the offender's personal psycho-biology and the active process of assessing the environment, not structural inequity (Jeffery 1971).

Jeffery has been followed by many researchers and academicians, mainly Sally Engle Merry, Timothy Crowe, Al Zelinka, Tom McKay, Bill Hillier, James Q. Wilson, George Kelling, Larry Cohen and Marcus Felson, etc. whose researches have been widely explained in chapter III. In the light of these studies, CPTED strategies fall into four broad categories by McCamley, including; territorial reinforcement, surveillance, access control and space management.

Territorial Reinforcement: Community ownership of public space sends positive signals to the community. Places that feel owned and cared for are likely to be used, enjoyed and revisited. People are also more likely to be protective of places with which they feel some connection. Effective design, planning and space management helps to stimulate natural community policing.

Surveillance: People feel safe in public areas when they can see and interact with others, particularly people connected with that space, such as shopkeepers and adjoining residents. Criminals are often deterred from committing crime in places that are well supervised. Natural surveillance can be achieved by creating effective sightlines between public and private space; strategically positioning buildings, accessways and meeting places; matching lighting types with crime risk and by using attractive landscaping.

Access Control: Physical and symbolic barriers can be used to attract, channel or restrict pedestrian and vehicle movement. They minimise opportunities for crime and increase the effort required to commit crime. By making it clear where people can and cannot go, it becomes difficult for criminals to reach potential victims and targets. Effective access control can be achieved by creating landscapes and physical locations that channel and group pedestrians into areas.

Space Management: Space Management is linked to the principle of territorial reinforcement. It ensures that space is well used and maintained. Strategies include activity coordination, site cleanliness, rapid repair of vandalism and graffiti and the refurbishment of decayed physical elements (McCamley 2001).

Although, Crime Prevention through Environmental Design has been effectively used for many years to reduce crime and improve a community's quality of life, it has been criticized for its limitations and to search how it could be improved.

2.2.3. Crime Prevention through Product Design

Crime prevention through product design offers a new way of thinking about crime and design. It is obvious that, technological developments will enhance the capacity of protective designs to act as successful crime reduction tools in the future.

> If designers can prevent an object or place being targeted by manipulating opportunities via design planning and details, it is possible to prevent the crime occuring. Crime Reduction through Product Design (CRPD) involves integrating protective features into products in order to reduce their potential to become targets of criminal activity, as well as preventing their use as instruments of crime. In either case, CRPD emphasises integration between a product and its protective features, which is a more effective and efficient approach than later relying on standard target-hardening measures for security (Clarke 1999, p. 35).

According to Clarke, depending on the particular product and its design features, crime reduction through product design (CRPD) is instrumental in either or both of the following; prevention of offences and facilitation of an effective and efficient response following an offence.

> Product designs for graffiti and vandalism protection primarily involve physical measures, such as graffiti-resistant substances, which are continually being improved. Paints and film coatings for walls, signs and other public surfaces are now available which require minimal effort and no abrasive chemicals for removal of graffiti from a range of marking materials (Eccotech, Inc 1997).

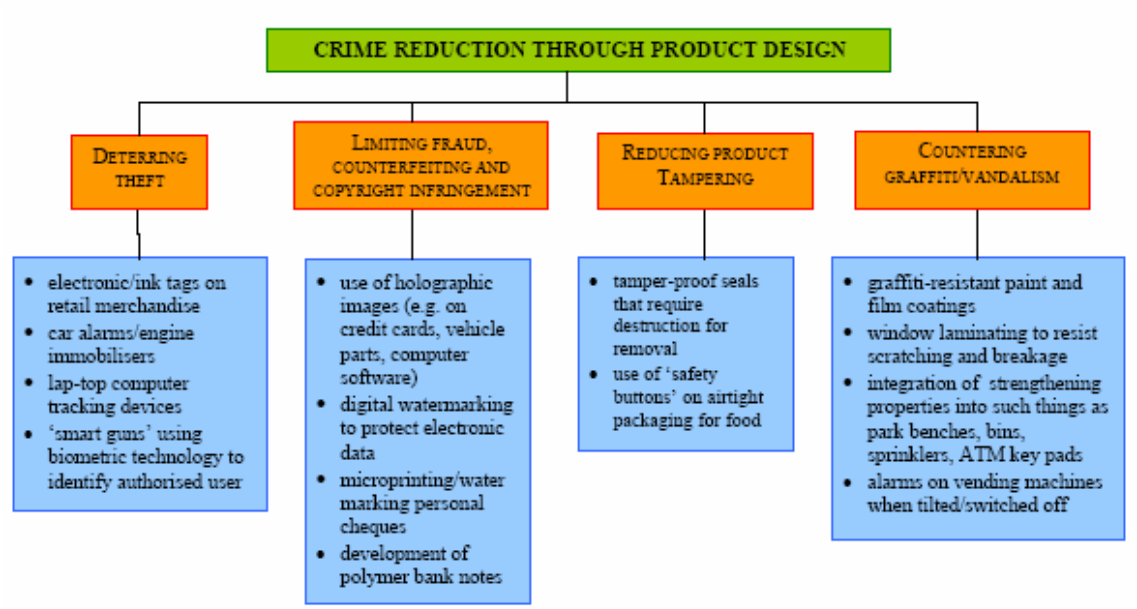


Figure 2.1. Crime Reduction through Product Design
(Source: Lester 2001)

Crime prevention through design approach includes many aspects that are closely related to eachother. Gamman and Pascoe (2004) present the differences and similarities between design against crime (DAC) and crime prevention through environmental design models, in order to clarify how these concepts relate and interact with each other.

> DAC and CPTED have different understandings of the word 'design', and the notion that the artefact is central to communication of the research process is perhaps more typical of design-focused research. CPTED tends to favour the theoretical approach, as well as an engineering definition of design (Gamman and Pascoe 2004, pp. 9-18).

According to Gamman and Pascoe, CPTED has produced from the viewpoint of the design profession that are workable but aesthetically poor designs. It focuses more on social space and models relating to spatial design. On the other hand, DAC is not only linked to crime reduction, it also covers user-centred and socially responsive solutions, as well as successful design, to achieve market-based success (Gamman and Pascoe 2004).

In order to explain how product design reduces crime, several examples are given below;

Figure 2.2. "Seet" public seating system
(Source: WEB_1 2003)

Seet is a public seating system that encourages natural surveillance by transforming the seat into a form of disaply. Seet also hinders bag theft by providing a secure place for your belongings in a public area (WEB_1 2003).

Figure 2.3. Public Smoking Space
(Source: WEB_1 2003)

Smokers are being banned from indoor places everywhere. This has led to a growing number of designated smoking spaces. This design explores what a smoking space would look like if it was designed by the anti-smoking lobby while balancing the needs of the smoker at the new Millbank site for the Chelsea College of Art and Design (WEB_1 2003).

Figure 2.4. Birkenhead Bus Station
(Source: ODPM 2004)

High standards of design give the impression of a place where crime and anti–social behaviour is not tolerated. Birkenhead bus station design encompasses crime reduction features allowing surveillance from one stand to another, from buses into the waiting areas and from passers-by. These are also assisted by vandal-proof material, good quality lighting and CCTV (ODPM 2004).

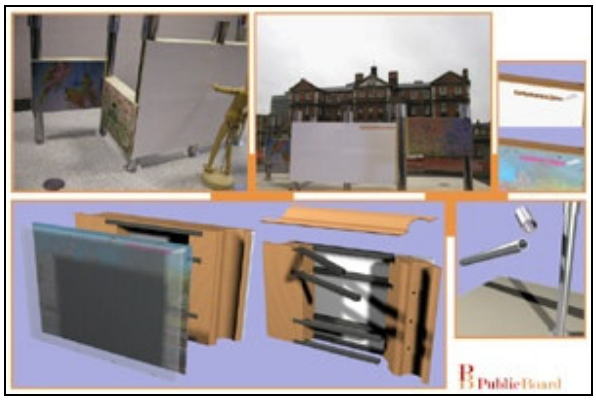


Figure 2.5. Public Board
(Source: WEB_1 2003)

In order to reduce crime in art oriented area, Public Board will create sense of ownership in public. It is a modular system where one module is A0 size board that can be placed to create a space in different sizes and shapes for people to draw unleash their creativity. It also discourages the potential offenders and reduces the fear of crime by creating a sense of ownership (WEB_1 2003).

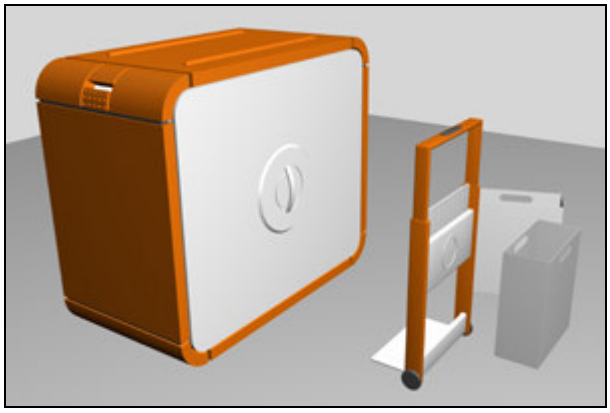


Figure 2.6. Mobile Cabinet : Millbank
(Source: WEB_1 2003)

Situational crime prevention which has its basic premise that the physical environment can be changed or managed to produce behavioural effects that will reduce the incidence of crime. Cabinet is design to purchase and assemble by students, shifting ownership of cabinet to student make prevention of trashing school property. Cabinet is more close to user by making it mobile also personalised trolley will prevent loosing and stealing (WEB_1 2003).

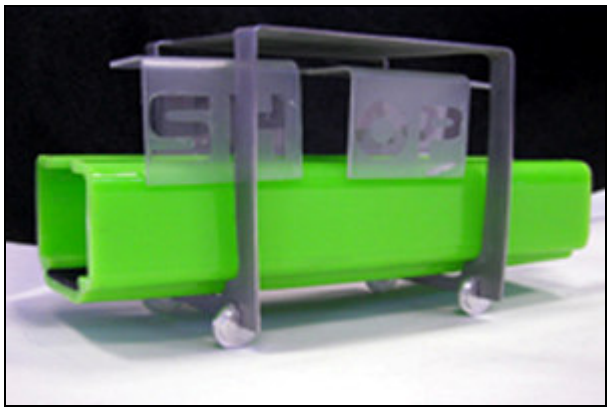


Figure 2.7. Simple Café and Newspaper Shop
(Source: WEB_1 2003)

Simple café and newspaper shop on tracks moving with events in area to open up an old military area to the public and prevent crime by having real people and not only CCTV in area. Constructed by glass fibre and steel only, with the possibility to have 6 passengers on each side as well as having disk on both sides for expedition of customers (WEB_1 2003).

Figure 2.8. Re-cycle Seating
(Source: WEB_1 2003)

Re-cycle uses victims of one crime to help prevent another. Taking stolen and abandoned bicycle and motorcycle parts it creates seating where users can attach bags to components, eg. handlebars, making it difficult for would be thiefs to rob them while the user is sitting (WEB_1 2003).

CHAPTER 3

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

3.1. Early Crime Prevention Initiatives

3.1.1. Eyes on the Street

Jane Jacobs (1961)'s book "The Death and Life of Great American Cities" originated the concept of Crime Prevention through Environmental Design. In her book, Jacobs observes the physical environment in order to gain a perspective on crime and the interconnection of the planned city. She also investigates how people occupy and behave in the space. Although Jacobs has not used the exact phrase Crime Prevention through Environmental Design, she sets out the basic concepts that others later refined. Jane Jacobs particularly focuses on sidewalks and city streets, human activity and human watchfulness.

In addition, she explained why many of the characteristics of the typical urban city encourage crime. Coining the term "eyes on the street", Jacobs argues that there is far less informal surveillance in these declining inner city neighborhoods, partly because neighbors do not get to know each other, and this causes a breakdown of social control. Jacobs initiates the discussion among city planners, sociologists, and criminologists about the ways in which a city's environment can encourage or discourage social deterioration and the crime that accompanies it. From her observations, Jacobs determines that in order for a city street to be successful it must have three main qualities:

- Demarcation: In order to create safer places, first of all, there must be a clear demarcation between what public space is and what private space is. Public and private domains should be clearly distinguished and should not mix to each other.

- Ownership of Public Space: Second of all, building heights should be minimized and buildings should be oriented toward the street to encourage “eyes on the street”.
- Constant Users: And third, sidewalks must have users on it fairly continuously, both to add to the number of effective eyes on the street and to induce the people in buildings along the street to watch the sidewalks in sufficient numbers (Jacobs 1961).

Jacobs recognized that the sidewalks needed to be lively not only during the day, but also in the evening and at night. According to her, mix of uses gives both residents and strangers’ concrete reasons for using the sidewalks. She also added that good lighting also encourages people to go out onto the street at night.

3.1.2. Defensible Space

Unlike Jacobs, Oscar Newman who published “Defensible Space” in 1972, focused on the architectural layout of individual buildings and the unhealthy effect it was creating for the residents. He examined that how the design of public housing units can have an impact on residents’ ability and willingness to maintain and control the security and use of areas near their homes. He also argued that certain environments and designs can generate fear in residents.

Newman put much of the blame for the high crime rates of public housing projects on their layout and design. Newman studied public housing projects and found that much of the crime occuring there was amplified by the design of projects, which did not allow residents to exercise any control over their environments. In particular, he criticized the huge, inhuman scale of the developments, their location in high crime neighbourhoods and the large buildings that made it difficult for residents to know who other residents were and who were not. Newman put forward a wide range of detailed design suggestions to change these conditions and make housing safer.

Newman’s findings support Jacobs’s “eyes upon street” concept thinking that when people take ownership of the public space and are able to observe their surroundings, a safer environment is created. Newman developed a set of design

principles aimed at reducing urban crime. His notion of defensible space included four principles;

- Territoriality (a sense of belonging and ownership): The capacity of the physical environment to create perceived zones of territorial influences.
- Natural Surveillance (surveillance opportunities for residents): The capacity of physical design to provide natural surveillance opportunities for residents and their agents, such as lighting and windows and the positioning of public areas should allow residents to see the common areas.
- Image: The avoidance of negative images produced by projects that are isolated in terms of location relative to other buildings, parks, and streets.
- Mixed Uses of Areas: Juxtaposition of the residential areas with other "safe" functional facilities, such as commercial, institutional, entertainment, and industrial (Newman 1972, p.51).

As mentioned, Newman agreed with Jacobs that it is important to have clear demarcation between public and private space and the ability for residents to naturally survey their surroundings. In addition to these crime prevention elements, Newman furthered the idea that physical design could affect behavior and the human perception. Applying these components to the design of housing projects, Newman argues that it is possible to design environments to help residents to protect themselves from crime.

3.2. Theories about Crime Prevention

3.2.1. The Broken Windows Theory

One of the crucial crime theory is called "The Broken Windows Theory" was advanced by James Q. Wilson and George Kelling in 1982. Wilson and Kellling argue that rates of crime can be reduced if police officers and citizens make an effort to reduce signs of low level disorder and decay in urban environments.

According to the theory; vandalism, graffiti, and other types of crime are to be tended to promptly before a "no one cares" attitude takes hold and eventually leads to more serious forms of criminal activity (Wilson and Kelling 1982). For instance; one un-repaired broken window is a signal that no one cares, and thus, all the rest of the windows will soon be broken.

In their model, it appears that disorder temporally precedes ineffective informal social control. Because of CPTED's emphasis on the importance of maintaining both the image and functionality of individual buildings and neighbourhoods, it is no wonder that the broken windows approach has been so easily appropriated. As a result, Broken

Windows theory stresses the vital importance of maintaining the environment as a physical indicator for levels of social cohesion and informal social control.

3.2.2. Routine Activities and Crime Pattern Theory

Routine Activities Theory (RAT) was proposed by Larry Cohen and Marcus Felson in 1979. Routine Activities Theory focuses on the characteristics of crime rather than on the characteristics of the offender. Cohen and Felson argue that there will always be a vast supply of crime motivation and that such motivation and supply of offenders remains constant. RAT is called the basic crime triangle. They state that three crucial components are necessary for a predatory criminal act, that is, violent crimes against the person and crimes against property. RAT argues that when a crime occurs, three things happen at the same time and in the same space:

- an available and suitable target;
- a motivated offender; and
- no authority figure to prevent the crime from happening.

In the routine activity approach, the first condition for crime is that a suitable target must be available. In this case, there are three major categories of target. First of all, a target can be a person or it can be an object whose position in space or time puts it at risk of criminal attack. Finally, a target can be a place.

According to Felson and Cohen (1979), four things influence a target's risk of criminal attack, in other words make a target suitable to an offender. All four of these dimensions are considered from an offender's viewpoint and these use the acronym VIVA. In this context, first thing is "Value". Offenders will only be interested in targets that they value, for whatever reason. On the other hand, an offender might behave as vandal, because they get satisfaction from causing the damage. Second thing is "Inertia". They briefly explain that, the size or weight of an item can effect how suitable it is. Then, third thing is "Visibility". How visible a target is can affect its suitability. And the final thing is "Access" which means that if a target is easy to get to, this increases its suitability. Access refers to street patterns or other features of everyday life making it easy for offenders to get to targets.

For the usual predatory crime to occur, a likely offender must find a suitable target in the absence of a capable guardian. This means that crime can increase without more offenders if there are more targets, or if offenders can get to targets with no guardians present. In addition, this also means that community life can change to produce more crime opportunities without any increase in criminal motivation (Cohen and Felson 1979).

Routine Activities states that criminal offenses are related to the nature of everyday patterns of social interaction. Cohen and Felson used their approach to explain the rise in crime between the years 1960 to 1980. They were concerned with the changes occurring in society, which they believed led to social disorganization, which further led to crime opportunity. Their perspective shows that crime is not only related to biological and psychological characteristics, but also to social or economic conditions, but that it is just as important to concentrate on situational factors which give rise to criminal opportunity. Routine Activities approach is important to crime prevention and to the changing of conditions in which crime is committed.

On the other hand, local crime patterns can tell us much about how people interact with their physical environment, producing crime opportunity. In this case, "Crime Pattern Theory", a central component of environmental criminology, considers how people and things involved in crime move about in space and time. Fitting well with the routine activity approach, this theory has three main concepts: nodes, paths, and edges.

"Nodes", which is a term from transportation, refers to where people travel to and from. Such places not only can generate crime within, and nearby. Thus, the word "node" expresses a sense of movement and it carries extra meaning about crime opportunities. Each offender searches for crime targets around personal activity nodes such as home or entertainment area and the paths among them. In addition, "the paths" that people take in their everyday activities are closely related to where they fall victim to crime. In this case, "Crime Pattern Theory" pays so much attention to the geographical distribution of crime and it also generates crime maps for different hours of the day and days of the week, for different process that moves people among nodes and along paths. The third concept of crime pattern theory, "edges" refers to the boundaries of areas where people live or work. Some crimes are more likely to occur at the edges such as robberies, because people from different neighbourhoods who do not know each other usually come together at edges. Most importantly, crime pattern

theorists and other environmental criminologists have shown that the design and management of cities can produce major shifts in crime rates. For instance, it is possible to reduce crime by reducing traffic and orienting windows so people can better supervise their own streets (Felson and Clarke 1998).

3.2.3. The Rational Choice Perspective

Through Rational Choice Theory, Cornish and Clarke (1986) describe crime as an event that occurs when an offender decides to risk breaking the law after considering his/her own need for money, personal values or learning experiences and how well a target is protected, how affluent the neighbourhood is or how efficient the local police are.

The Rational Choice Perspective focuses upon the offender's decision making. Its main assumption is that offending is purposive behavior, designed to benefit the offender in some way. Offenders have goals when they commit crimes, even if these goals are short sighted and take into account only a few benefits and risks at a time. These constraints on thinking limit an offender's rationality. It is also limited by the amount of time and effort that offenders can give to the decision and by the quality of the information available to them. They rarely have a full picture of all the various costs and benefits of the crime.

Rational choice theorizes in criminology trying to see the world from the offender's perspective. It seeks to understand how the offender makes crime choices, driven by a particular motive within a specific setting, which offers the opportunities to satisfy that motive.

This theory is closely linked to "Situational Crime Prevention" which is explicitly designed to reduce crime opportunities. Situational Crime Prevention Theory, as proposed by Clarke (1995) focuses on reducing crime opportunities rather than on the characteristics of criminals or potential criminals. The strategy is to increase the associated risks and difficulties, and reduce the rewards. It also asserts that crime is often committed through the accident of a practical or attractive opportunity. Indeed, if withdrawing the opportunity causes crime to go down, it becomes impossible to deny that providing more criminal opportunity causes crime to go up.

3.2.4. Crime Prevention through Environmental Design Theory

Crime Prevention through Environmental Design (CPTED) theory has become more popular as the concern with crime and urban fear in cities escalates. According to this theory, particular types of crime and fear of crime can be reduced by better design and maintenance of the built environment. CPTED strategies are one approach used to reduce specific crime and fear of crime. Additionally, crime prevention strategies focus on all environments, not just housing environments or environments used by poor people or minority groups.

The term "Crime Prevention through Environmental Design" was coined by the criminologist, C. Ray Jeffery and has had a profound influence on the intellectual development of CPTED. Jeffery was a professor of criminology at Florida State University and his book focused on criminal psychology and behaviorism rather than the built environment. Jeffery's work, "Crime Prevention through Environmental Design", first published in 1971, and revised and reissued in 1977. It also took a highly critical view of conventional approaches to crime control.

The concept is rooted in psychological learning theory of B.F.Skinner and the role of the physical environment plays in the development of pleasurable and painful experiences for the offender. This approach to crime prevention involves taking proactive action against crime before it occurs, which stands in stark contrast to criminal justice model that waits for crime to occur. Jeffery states; "If we are to build a man-environment model, or an environment-organism-environment model, we must have a psychological model of behavior" (Jeffery 1977, p.186).

In this case, Jeffery separates CPTED from defensible space by arguing that crime prevention is either;

- physical design effecting the physical environment, or
- social control effecting social surveillance (Jeffery 1990).

Jeffery's CPTED model is based on an ecological model of the physical environment and its interaction with the physical organism. The human-made environment is critical to his model as is the characteristics of individual crime sites, such as the type of building, location of streets, parking lots, bus stops, etc. Jeffery argues that the physical environment can be used to control behavior by removing the

reinforcements for crime and unlike defensible space projects, CPTED strategies have been more succesful. Jeffery also argues that the physical environment affects levels of social control and the nonrandom nature of criminal events and the CPTED model offers a multidisciplinary analysis of urban environments and crime (Jeffery 1990).

According to Jeffery, there have been three models of crime control; these are retribution, deterrence and treatment. He contended that both the retribution and deterrence models had been resounding failures, and that treatment had failed because of lack of scientific knowledge about behavioral change and treatment methods. He advocated that a model of prevention that included not only architectural design, but also human behavior and learning theory. Crime prevention involved any activity that would reduce or eliminate a crime before it is committed. It is important to consider not only physical design measures for streets, parks, buildings etc. but also changing the behavior of potential victims and criminals. In this case; the criminal act was a product of the offender's personal psycho-biology and the active process of assessing the environment, not structural inequity (Jeffery 1971).

In Urban Danger: Life in a Neighbourhood of Strangers (1981), Sally Engle Merry, an anthropologist, writes of an eighteen month participant observation study at Dover Square Housing Project that found offenders rob or burglarize their own neighbours. Through interviews, Merry discovered residents in the low-income crime prone project, were strangers to one another. She also observed that, in order to protect them and their families from being a victim of crime, people often socialized within their own ethnic group and confined themselves to their place of residence. According to Merry, the social structure of Dover Square itself contributes to the high crime rate. This anonymity allows the offender to observe his potential victims and learn their daily habits from the comfort of his living area. As mentioned, offenders typically commit crimes against property away from their residence. But when the social makeup of a neighborhood is of strangers, it allows an offender free range to commit criminal acts. Through the effects of anonymity, the community in which he or she lives will not identify the offender (Merry 1981).

Timothy Crowe, a criminologist and author of "Crime Prevention through Environmental Design" (1991), has consulted and trained law enforcement as well as provided crime prevention guidance for urban planning, space management and architectural design. Crowe believes CPTED concept is to create positive behavioral effects by manipulating the physical environment.

Crowe has developed a comprehensive set of guidelines to reduce opportunities for crime in the built environment, intended to guide police, town planners and architects etc. Crowe has revived CPTED and to some extent has clarified the concept for application purposes. The modern application of CPTED, as defined by Crowe, differs from defensible space in that it addresses the behaviors and decision-making processes of the potential offender, not only the legitimate user, in other words the potential victim. According to Crowe, there are two ways in which CPTED is different from defensible space: its emphasis on influencing offender's perceptions and behaviors through altering the opportunity structure, and its focus on not only the design, but also the management of the environment. Crowe places strong emphasis on mixed-use environments, placing legitimate users in areas where illegitimate users are, in order to increase surveillance and deter crime.

Based on Newman's defensible space theory, Crowe has identified the principles in CPTED are access control, surveillance and territorial reinforcement. According to him, access control is a design concept that limits access of unauthorized users.

> Access control strategies are typically classified as: organized (e.g. guards), mechanical (e.g.locks), and natural (e.g. spatial definition). Surveillance is also a design concept that facilitates legitimate users to observe suspicious persons. The result is potential offenders will avoid these areas because of a perceived high risk of being seen. "Surveillance strategies are typically classified as organized (e.g. police patrol), mechanical (e.g.lighting), and natural (e.g. windows) (Crowe 1991, p.30).

On the other hand, territorial reinforcement is a physical concept that creates a sense of a territorial zone for legitimate users. Offenders perceive the territorial zone as high risk. "The combination of access control and surveillance can help to reinforce territorial response for legitimate users (e.g. more security awareness, reporting, reacting)" (Crowe 1991, p.31).

In the light of these conclusions, Crowe compiled nine major CPTED strategies as a guide to apply to many environmental settings that will reduce crime:

1. Provide clear border definition of controlled space.
2. Provide clearly marked transitional zones.
3. Relocation of gathering areas.
4. Place safe activities in unsafe locations.
5. Redesignate the use of space to provide natural barriers.
6. Improve scheduling of space.
7. Redesign or revamp space to increase the perception of natural surveillance.

8. Overcome distance and isolation (Crowe 1991, pp. 106-107).

Another critic, Al Zelinka, the coauthor of "Safe Scape" believes that the U.S should return to thoughtful, people centered design. Zelinka also believes that planners must form interdisciplinary partnerships involving designers, police, etc. Because the problems are too complex and planners must depend on others to help implement solutions. Briefly, he agrees with Jane Jacobs; mixed uses and lively streets make places safer.

McKay introduced a new proactive methodology which is called behavioral based design. According to McKay (2004), CPTED must expand beyond its three main concepts of natural surveillance, access control and territorial reinforcement. Therefore, he argues that CPTED's greatest limitation is its inability to adapt to behavioral change. He briefly explains that, Behavioral Based Design, a strategic design approach that looks at the predictable ways in which people interact with a given environment, then factors that interaction into the design when developing the most appropriate physical settings for inducing desired behavior.

McKay explains that, CPTED's limitations include an even larger problem, a lack of true analysis. He also adds that, other weaknesses are CPTED's offender-oriented bias and the marginal role of form.

In this case, Behavioral Based Design can be captured by the following proportions;

- The probability of a particular behavior manifesting itself is a function of its known rate of recurrence in a comparable and conducive setting.
- The reasons for recurring behavior are instructive and must be clearly understood.
- All behaviors may be considered desired, supportive or unwanted depending on the setting.
- Setting characteristics can be linked to desired and unwanted behaviors.
- Desired behaviors may be induced by replicating the setting characteristics that are associated with the behavior.
- Unwanted behaviors may be discouraged through the manipulation or removal of associated setting characteristics (McKay 2004).

Professor of Design Against Crime, Ekblom has produced many studies as well as innovative ideas for rebuilding CPTED conceptually and scientifically. According to him, as one of the CPTED's problems, this concept isolated empirically and

theoretically from rest of crime prevention and sometimes fails to consider whole system, not just physical aspect. However, he emphasizes that, as a process, design must cover whole system in order to achieve better solutions. In other words, it should also be seen as a process which applies to all kinds of crime prevention, imparting a design perspective and design approach. Ekblom underlines that efficacy of CPTED can be reduced or increased by demographic and socio-economic factors, as well (Ekblom 2006).

As Ekblom's own words;

> Designers - of built environments, homes, products, systems and services - need systematic training or guidance to help them incorporate crime prevention within their remit. But much of the available material is limited in scope and frequently offers no more than a string of loosely-connected ideas uninformed by theory (Ekblom 1997, p.249).

Ekblom also adds that because crime problems and their context change, CPTED needs basic principles and concepts to be "future-proofed" in light of new crime problems, new approaches to design and new priorities. In that case, he states that CPTED needs products and designs themselves to be future-proofed, flexible and upgradeable, given durability of built environment on some scales.

Ekblom asserts a new definition and scope of CPTED as below;

> Preventing crime&related problems, and enhancing quality of life through community safety, using the processes of planning&design of the environment, on a range of scales and types of place from individual buildings&interiors to wider landscapes, neighbourhoods&cities.
>
> This is done through designs that are 'fit for purpose' and contextually appropriate in all other respects, whilst achieving a balance between the efficiency of avoiding crime problems before-construction and the adaptability of tackling them through subsequent management and maintenance (WEB_3 2007).

Hillier (2004) argues that whether spatial design of our urban environment can reduce crime and also tries to find the answers to these questions -does natural policing really exist- and if it does -what is the best way to maximise its effects? Hillier also addresses the controversy about the relationship between crime and spatial design. He also identifies the hidden dangers of research into crime and its spatial distribution and warns against over-simplistic assumptions, particularly at the larger scale of analysis. The research draws out a critical lesson in space syntax crime analysis that spatial factors do not operate one at a time to increase or reduce security, they interact and both global and local factors must be right if security is to be enhanced.

“Space Syntax” is a form of computer modelling of space in built environments developed by Hillier and Hanson. Space Syntax Laboratory has some results; they have found no correlations between crime and density, they have found only a poor correlation between affluence and crime. On the other hand, they have also found very strong correlation between layout type and all kinds of crime. As a result, his research draws out a critical lesson in “space syntax crime analysis” that spatial factors do not operate one at a time to increase or reduce security, they interact and both global and local factors must be right if security is to be enhanced.

Crime prevention through environmental design studies extend to varied areas such as; housing, town centres, commercial and leisure areas, transportation and related areas including bus stops, car parks, etc. Although, crime prevention strategies are common for all, each of them also has some specific precautions in order to prevent crime via design solutions. To do this, there are increasing numbers of crime reduction organisations that have appeared in European countries, as well as U.S.A and Australia. For instance, “Crime Concern” is a national crime reduction organization of UK that works with partners to reduce crime and create safer communities.

Another national crime prevention programme from UK is called “Design against Crime” also produce many specific case studies about reducing crime by design. On the other hand, “Design Council” generates initiatives to inspire and enable the effective use of design to improve prosperity and well-being. In addition, “Designing out Crime Association” from UK also sets up to promote the concept of designing out crime in the built environment. “European Designing out Crime Association” that is called E-DOCA disseminates knowledge about designing out crime, and is based in the Netherlands. It can be increased the number of examples that work to reduce crime by planning and design studies world wide.

As an example, Office of the Deputy Prime Minister (ODPM) selected case areas in order to highlight the attributes of safer places and these areas include each of the varied public areas which have been mentioned above. The case studies have shown that it is possible to reduce crime and anti-social behaviour by paying attention to spatial built environment.

In this case, the first example is the Cromer Street area. The area had been seriously affected by drug dealing, vandalism and burglaries which produced poor street environments. The changes, reflected in reduced crime figures, have transformed the quality of the urban environment. A major feature of the transformation is the enclosure

of the courtyards between buildings. These are now dedicated to residents for play space, gardens or parking, with a concierge entrance for each block (ODPM 2004).

In this example, changing security improvements in Cromer Street can be seen as before and after;

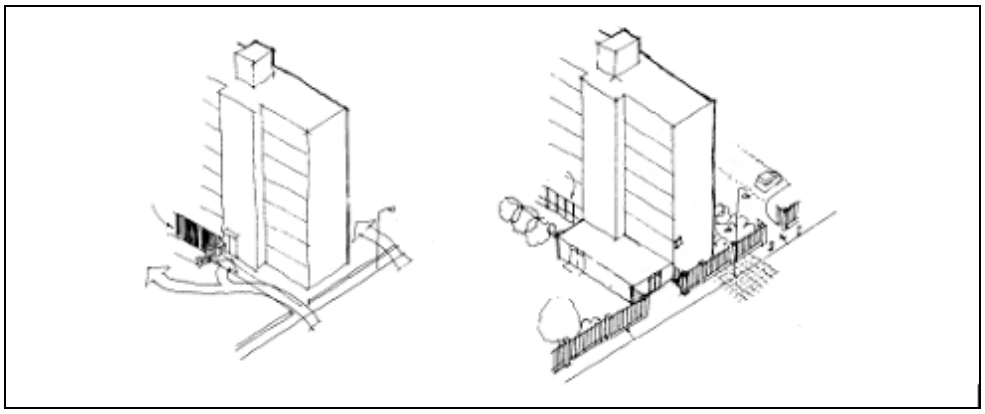


Figure 3.1. Security improvements in Cromer Street (Before and After)
(Source: ODPM 2004)

ODPM (2004) has explained that the location had played a large part in the degree of crime, because of easy access into the flat blocks provided opportunities for criminals. In addition, disused undercroft storage areas, unsupervised entrances and staircases, poor lighting and the permeability of the grounds all contributed to the problems. Despite the crime and poor conditions, the potential of the area was recognised, with housing stock capable of providing further service and generous areas of open space. ODPM has expressed that, during the evaluation process, the area backed by community involvement and guided by a master plan in addition to the physical works including:

- Renovation of housing with concierge entrances, CCTV at entries linked to each flat, lifts extended to reach basements and conversion of storage to community uses, such as nurseries and day centres for older people.

- Enclosure of the ground floor space between blocks, with railings and gates allowing views in and out but preventing uncontrolled entry. One area is a through route, open to the public during daylight to avoid isolation. Other areas are playgrounds, parking space and gardens.

- Improved paving, planting and lighting.
- Formation of gathering places with seats.
- Provision of play equipment for children. (ODPM 2004, p.54).

After all these studies, Cromer Street has become a thriving, well-functioning inner city housing area, well integrated with the mixed use and open spaces around. The park is naturally self-policing, with straight through views, and overlooking from the flats around. It is closed at dusk, as are gates into other areas between flats. The flats are well cared for. There is very little graffiti. There are meeting places and activities along Cromer Street, centred on the shops that serve a community function. Entry to flats is by way of a two-stage entry system at the gate and at the door. Briefly, the studies have proved that the improved environment has decreased the rates of crime and anti-social behaviour and thus, increased the feelings of security (ODPM 2004).

Figure 3.2.The improved Neighbourhood Park
(Source: ODPM 2004)

Figure 3.3. Four crucial elements to the success of Cromer Street
(Source: ODPM 2004)

The study by Brock (1991) also have searched some fundamental questions concerning the relationships between the social composition of housing projects and

particular design features of residences, and the behavior of residents with a view to determining those features which encourage people to control the behavior in spaces around them in a manner which reduces crime.

In addition, a major goal of this research was to uncover knowledge about various considerations additional to compositional and design ones which need to be taken into account in understanding predatory crime and its control, such as the criminal's viewpoint and how this may affect deterrability through design.

This research has added to general understanding of the notion of crime prevention through environmental design. In this case, one part provides insights into the theories of defensible space and territorial functioning while another examines and collates a body of knowledge about other considerations which need to be taken into account regarding the various forms of crime and their control, and in particular motivational patterns of potential lawbreakers (Brock 1991).

As an example to a regeneration and management of the town and city center, Gravesend has been chosen as a case area, because of growing crime and disorder problem. This case study illustrates the benefits of striving to achieve a living place. In this case, the regeneration effort is provided by good quality physical improvements and town centre management. This combination of factors has resulted in a reduction in crime and an improved environment for residents and visitors to the town centre. ODPM also has added that the regeneration programme has included: conservation and restoration of heritage buildings; development proposals for sites vulnerable to crime, such as car parks; reintroduction of housing to the riverside and town centre including “living over the shop”; creating pedestrian priority shopping streets including good quality paving and street furniture. Therefore, opportunities for illegal activities are reduced by the restoration of heritage buildings (ODPM 2004).

Figure 3.4. The restoration of heritage buildings
(Source: ODPM 2004)

The study has shown that, after the regeneration process crime reduction has resulted from active measures such as CCTV and passive measures such as the restoration of derelict buildings and good quality urban design, leading to increased local pride in the town centre. Natural surveillance has been increased and new uses for derelict premises and increased activity throughout the day. On the other hand, the absence of graffiti and litter reflects a new pride in the centre and an unwelcoming environment for criminal and disorderly conduct (ODPM 2004).

Figure 3.5. Combined shopping facilities with other places
(Source: ODPM 2004)

In addition, as can be seen in Figure 3.6, activity and surveillance are encouraged in Gravesend throughout the day and night by allowing traffic into the pedestrian area in the evenings.

Figure 3.6. Encouraged activity and surveillance
(Source: ODPM 2004)

The article by Raco (2003) also drawing on an examination of regeneration practices and processes in one of the UK's fastest-growing urban areas, Berkshire, assesses policing strategies and tactics in the wake of a major regeneration programme. It documents and discusses the discourses of regeneration that have developed in the town and the ways in which new urban spaces have been secured. The article also argues that, whilst security concerns have become embedded in institutional discources and practices, the implementation of security measures has been mediated, in part, by the local socio-political relations in and through which they have been developed (Raco 2003).

On the other hand, Mowbray Park has been sensitively restored and made safer. To do this, visibility has been improved, wardens are employed to patrol the park and CCTV cameras have been installed. The nature of crime has changed from serious incidents to juvenile disorder.

The work also involved:

- Removal of some trees and of perimeter hedges (Selective tree felling has created unobstructed views and few opportunities for concealment)
- Removal of undergrowth from a railway cutting within the park
- A new children's play area, raised to allow surveillance
- Improvement in visibility across the park by restoring lost views and reducing enclosure.
- A management and maintenance regime was introduced with wardens, CCTV and mobile contract security teams at night (ODPM 2004, p.80).

Figure 3.7. Safer landscape features
(Source: ODPM 2004)

The re-design is a successful approach to urban park restoration in a city centre location. It has deterred crime without emphasis on obtrusive exclusion devices. The result is a high quality urban park providing a place for relaxation, play space for children and an attractive pedestrian route to the city centre. For instance, as seen in Figure 3.8, the children's play area is built open to view from within and outside the park in order to increase the safety. Security measures such as CCTV and the Park Rangers office are very visible and the perimeter fencing is a deterrent to casual entry without being forbidding (ODPM 2004).

Figure 3.8. The children's play area
(Source: ODPM 2004)

Figure 3.9. Conspicuous CCTV surveillance
(Source: ODPM 2004)

ODPM has also worked on bus stations where the rates of crime are high. Birkenhead is a town centre bus station that enclosed predominantly by glass, appearing at first sight to be very vulnerable to crime and vandalism. However, the 'loop' design and transparent walls contribute to excellent visibility into, out of and through the structure. The levels of lighting both by day and night deter criminal activities. This structure indicates how design can contribute to solving the problem. The design encompasses crime reduction features allowing surveillance from one stand to another, from buses into the waiting areas and from passers-by. The location required the provision of the following security features, such as; CCTV, high intensity lighting, maximum visibility, etc. In addition, a facilities office within the bus station provides 24 hour security (ODPM 2004).

Figure 3.10. A facilities office
(Source: ODPM 2004)

Figure 3.11. Transparent bus station
(Source: ODPM 2004)

As another transportation tool, metro systems are also high potential crime areas. The study by Falanga (1988) addresses the problem of reducing transit crime through station design. The intend of this study is to investigate the influence of subway station design on crime and use this information as a basis for establishing guidelines for redesigning cost effective subway stations.

The study is a first attempt at offering some factual information to transit systems to guide the designs of their existing and new stations. Theories describing how design influences, and can reduce transit crime may apply to other built environments. Additionally the study also presents a useful and effective methodology for studying crime reduction in any environment (Falanga 1988).

In the light of these examples, it is possible to say that, crime and anti-social behaviour are likely to occur if the built environment is unsuccessful. In this case, first thing to do is to consider whole areas in cities without any exception. Because cities include all these areas from housing to town centres, as well as commercial and leisure areas, and transportation related areas including bus stops, subway stations and car parks which have potential for crime. It is crucial that, high standards of design give the impression of a place where crime and anti–social behaviour is not tolerated. Therefore, planning and design features of the built environment-including landscape and street furniture-can help to reduce crime.

Unlike foreign countries, crime prevention through planning and design context has not been considered and integrated with the planning and design studies in Turkey. Because, it is difficult to obtain data about crime and safety in developing countries, there are very few studies in Turkey compared to developed countries. In addition, the existing studies in the national literature consider the subject “crime prevention” in

general context without getting into detailed data and spatial analysis. These studies mostly focus on crime mapping issues and they usually consider the whole city or district to demonstrate the changing crime levels. However, none of them deal with design approaches that are crucial to increase safety in public places, even the whole city.

Yirmibesoglu and Ergun (2005) have emphasized that one of the needs for the sustainable development is to establish a safe environment. However, the rapid increase of the population, due to migration from rural areas affects the social and economic development in the cities in an adverse manner. In their study, socially and economically homogenous districts are determined in the Istanbul and the changes in crime in relationship to this factor. In their study, the distribution of crime in 32 districts among 2000-2004 is investigated and their location distribution in the metropolitan area is analysed. The results of the research have shown that crime rates were higher in the districts that were older and closer to the centre and lower in new districts which had mostly squatter areas and were established as a result of migration from rural areas in Istanbul (Yirmibesoglu and Ergun 2005).

Besides, in their later work, Yirmibesoglu and Ergun (2007) have brought up close relationships between physical and demographic characteristics and crime levels in cities. According to them, in physically deprived environments, the most important factors that increase urban crime are socially isolated communities, economic discrimination and lack of equality in political citizenship rights. In this study, the similarities and differences of crime ratios against property and persons in Istanbul are compared with those in other countries and the research has revealed that the crime rates in Istanbul against property and persons were in parallel with developed countries. Consequently, they have pointed out that the main reasons for the increase in urban crime and violence are the result of turmoil in the social, political and economic structures.

The study has shown that communities that are socially isolated, in poor environments and suffering under economic discrimination and lack of equality in political citizenship rights, increase urban crime. According to their analysis, the districts which have mixed use, high population increase, high number of households, high density and high land value, property and personal crime levels are high; when date of becoming a district is recent and the size of the district is large property and personal crime levels are low.

They also observed that, as a major destination of immigration, the differentiation in the social and physical structure of the city for reasons such as the division of the city by the Istanbul Straits and its multi-central status, diversity in use of land, non-homogeneity in terms of socio-economic aspects, its structure being both fragmented and intermingled, is reflected in the distribution of crime. Consequently, they emphasize that, although Istanbul displays parallelism with developed countries in the distribution of crimes against property and persons, it is observed that spatial characteristics are more effective in the distribution of crimes than social characteristics. As a result, they have concluded their study that planning decisions need to be developed for decreasing crimes in central districts and for keeping the level of crimes low in the peripheral districts (Yirmibesoglu and Ergun 2007).

Yılmaz (2006) argues that the concept of crime and its reflections are crucial and need to be explained as socio-spatial issues. Yılmaz point out that crime is a complex issue and it can be influenced by many factors including socio-cultural and economical factors. Yılmaz also advocates that, "crime" as a dynamic and geographical case has been influenced by the time, space and the opportunities, as well. Yılmaz implies that city planners and urban designers should consider that they have a great responsibility for reducing crime levels in cities and in order to do that, they have to realize their power to create safer and liveable built environments. Yılmaz explains that if planners and environmental designers can realize the relationships between crime and spatial built environment, they can use their power to create better environmental features to reduce crime, as well as fear of crime. Therefore, planning and design decisions can be used to prevent crime in cities (Yılmaz 2006).

In Erkan's words;

> As all around the world, in our country too, we observe that there are some decreases in life standards of people since the rapid increase of the population. Among the effects of the main factors of life standards are ecological problems rapid constructions, lack of social facilities and empty zones, spending too much time for transportation, parking area problems, attainment to social service and urban facilities (Erkan 2005, p.309).

In that case, she describes vandalism as the main factor of visual dirtiness and problems of attainment to social facilities. Through the study, Erkan analyses the problem of vandalism is tackled as a crime and in accordance with its effects to the public (Erkan 2005).

Aksoy, as a police officer, explaines that Bursa Police Department started using Geographical Information System effectively in Bursa for the first time among all Turkish Police Departments in 1999. It was based on BEMTAP-2000 (Technological Adaptation Project of Bursa Police Department) which was previously established in the same year.

Aksoy emphasizes that, BEMTAP-2000 enables The Bursa Police Department to create various sub-projects. One of them is "Geographic Profiling". With the help of digital city map, by applying this project, The Department was able to have development in same areas such as fast arrival to crime scene, crime databases, crime maps, crime analysis, alarm systems, car tracing-tracking with GPS equipments and emergency plans in case of natural disasters. Consequently, Aksoy points out that by combining The Bursa Metropolitian Municipality Information System and The Police Information System a significant success has been achieved in security services which are provided for the public (Aksoy 2004).

In this respect, it is obvious that none of the crime prevention studies in Turkey deal with design approaches that are crucial to increase safety in public places. At that point, crime prevention studies need to be considered through the varied scales of analysis via attracting attention of many disciplines and authorities, including local communities, planners, environmental designers, police, etc. In order to do that, not only local authorities, but also planners and designers of the built environment have to be aware of their responsibilities and the importance of cooperation on crime prevention studies.

CHAPTER 4

KONAK SQUARE CASE STUDY AND ANALYSIS

4.1. Description of Konak Square

Konak Square has been selected as a study area as being one of the most important public spaces of İzmir. In addition, the selection of Konak Square depends on its different characteristics such as being an area located in the geometrical centre as well as administrative center of the city and also being one of the crucial intersection points of the city and finally, Konak Square has been gone through several physical changes in time. On the other hand, the area is also a public transportation hub where stations of subway, public buses and ferry are located. Therefore almost every citizens of İzmir pass through Konak Square. Another words, it is the heart of the city. At the same time, Konak Square is an administrative center, shopping center, and also adjacent to financial center Pasaport and Gümrük area.

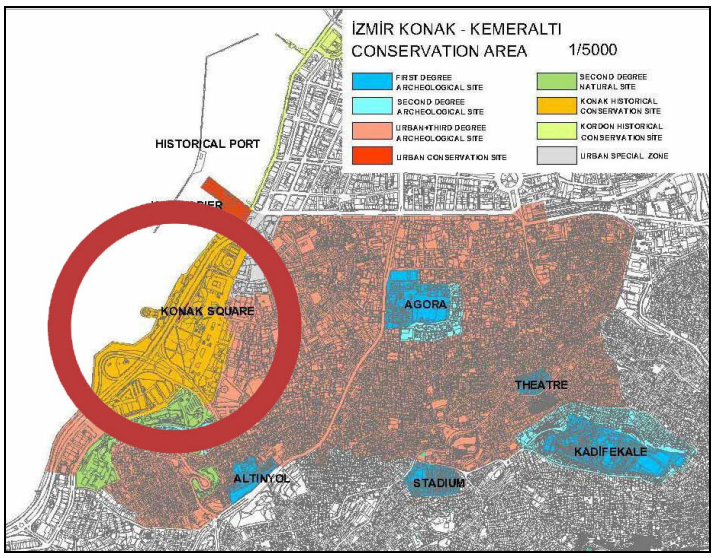


Figure 4.1. The Case Area- Konak Square

Considering these features, the borders of the study area extend with the Government House and the entrance of the Kemeraltı shopping area on the east, new quay on the west, YKM building on the south and Municipality building on the north.

Figure 4.2. General view of Konak Square
(Source: Ege Mimarlik 2004)

Konak Square has witnessed some physical transformations during its lifetime for more than a century. Finally; it has been redesigned in 2003 by the architect Ersen Gürsel.

Figure 4.3. Recent Design of Konak Square-2007

Figure 4.4. Konak Square-2004
(Source: Ege Mimarlik 2004)

The main concept of the project has been to define such an area within a fragmented composition in itself. In that case, Konak Square has been redefined and Historical Clock Tower formed the focal point of the square. The borders of the square have been emphasized through a special ground pavement. Other parts of the vacant area have been functionalized with thematic parks namely İzmir City History Park, Open Exhibition Area and Aegean Artists Park so as to enable a spatial perception throughout the square. Within the project, canopies have been placed in front of the existing buildings in order to protect from weather effects, and the necessary climatic atmosphere has been provided by the seating elements shaded by trees (Ege Mimarlik 2004).

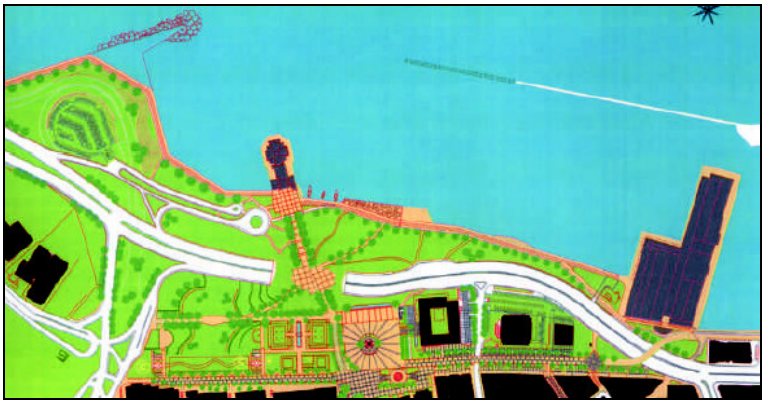


Figure 4.5. Project of Konak Square
(Source: Ege Mimarlik 2004)

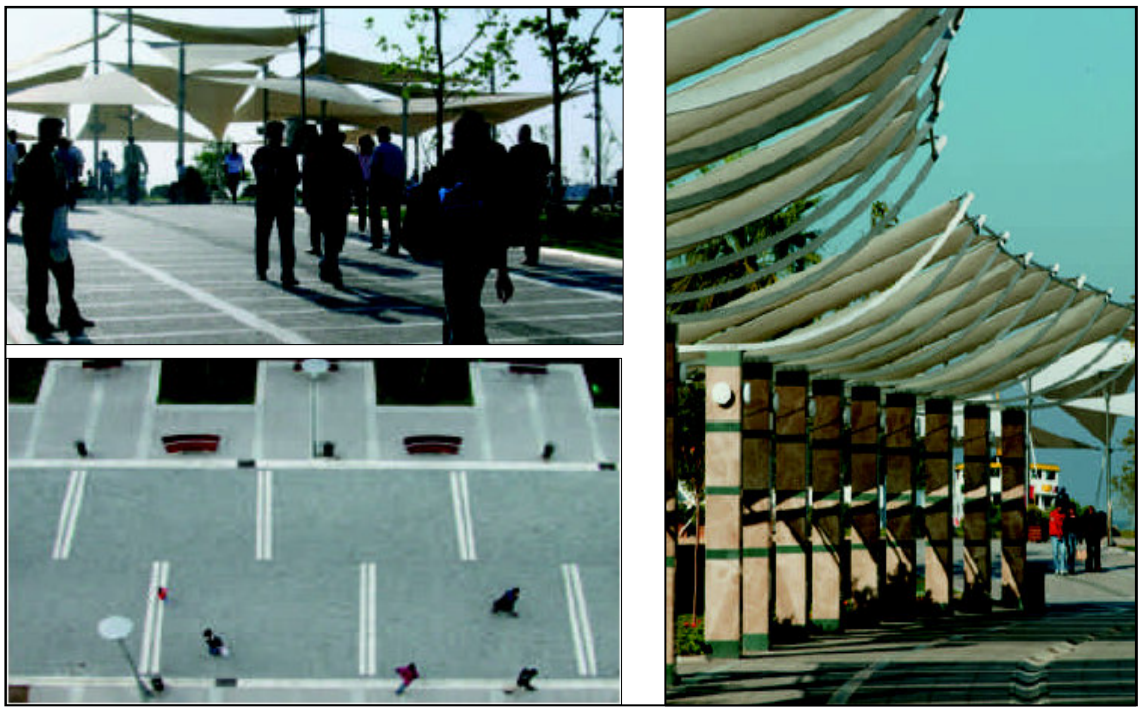


Figure 4.6. Design Features of Konak Square- 2004
(Source: Ege Mimarlik 2004)

The implementation of the project took almost one year. The opening ceremony was on 08.09.2003. During the implementation process of the project, the area was partially closed to the public from time to time. That is why, the official crime reports have been taken into consideration before and after the implementation process.

As already mentioned, Konak Square has been a recently designed public space and therefore it has been chosen as a case study area. In this study, design features of the area and whether it has any impacts on crime and fear of crime or not are to be considered in the light of the official crime data, systematic observations and the results of user questionnaire.

4.2. Research Methodology

4.2.1. Obtaining Official Crime Records of Konak Square

At the beginning of the study, official crime records have been obtained from the records of the İzmir Police Department. It was a difficult process and it took several months to select each crime incidents occurred in the study area among numerous crime records in the whole Konak District. That is why, each crime file for the years 2001-

2002 (before the implementation process) and 2004-2005 (after the implementation process) has been examined month by month in order to separate crime incidents which occurred in the case area.

The collected data includes information about the types and number of crimes etc. that has already occurred on the selected area. Considering the official crime records, these crimes include robbery, theft from the person, pickpocketing, wounding and forgery. For the study, official crime reports of 2001-2002 (two-year-period before the implementation and also 2004-2005 (two-year-period after the implementation) has been considered to clarify the crime characteristics and rates of the Konak Square. The main reason for the separation of the data month by month is to analyze -how crime and fear of crime change according to the season, daylight (daytime/night time) and related changes.

In addition to the official crime data, many police officers from İzmir Police Department have been consulted in order to analyze the general crime characteristics of Konak Square. Police officers have provided information that some crime incidents have not been recorded depending on some reasons. They briefly explain that because of the repetition of same crime events by the same offenders-even several times a day-, they usually ignore some cases and they also do not record them in order to avoid application of the long bureaucratic procedures. In this case, considering this comment, the real crime rates are expected to be higher than the recorded crime events.

On the other hand, interviews with police officers have shown that, crime rates of Konak Square demonstrate some changes depending on the seasons of the year. For instance, crime rates during the summer are higher than the winter. As we have learned from the police officers, the main reason of this is the “increased population” of visitors of the area. Especially in summer, in addition to its routine users, many tourists visit the Konak Square which are the potential victims for offenders. This is the reason why the crime rates of summer are higher than other seasons.

According to the official crime data, the profile of potential offenders also varies depending on the parts of the day. For instance, while the number of child-offenders is significantly high during day time, the night time offender profile mostly include young-man offenders. As another specific finding, although pickpocketing mostly occurs at peak hours of the day, other types of crime such as; wounding or snatching usually occur after dark and empty hours of Konak Square.

Police officers have also emphasized another crucial point that has a specific effect on fear of crime in this area. Street vendor who usually locate around Konak Square make people feel insecure. In another words, police officers explain that offenders sometimes behave like vender in order not to attract attention. This situation sometimes creates conflict in users' mind and increases their feelings of insecurity. Particularly, this feeling increases after dark, because of poor lighting.

Konak Square is also under visual control of CCTV which discourages potential offenders and thus, decreases crime and anti-social behaviour. Police officers have emphasized that since the use of the CCTV, crime rates have decreased because of this reason.

At the same time, İzmir Police Department has declared that redesign of Konak Square has caused a decrease in the number of crime incidents by discouraging potential offenders such as; drug addictives, strays etc. who used the area freely, prior to the redesign. However, they also add that, although Konak Square has become safer after redesign, there are still problem points where crime and anti-social behaviour are likely to occur. Particularly, concealment and entrapment points which come from design features of the area encourage potential offenders to commit crime, particularly combining with poor lighting of the area.

İzmir Police Department has explained that in addition to the routine security precautions of the area, they provide swat team (çevik kuvvet) and undercover cop (gizli polis) as an additional support for security, in case of special occasions such as; demonstration, meetings etc. In this case, there is no specific procedure for these kinds of additional security precautions in the area. They have also added that the number of them varies depending on circumstances and special occasions which are located in the area from time to time.

4.2.2. User Questionnaire

User questionnaire has been designed to analyse uses of the study area and its users, as well as crime and fear of crime hot spots in Konak Square. In this case, there are two types of respondents who answered the safety questionnaire:

1) Users of Konak Square

2) Professionals of the Planning and Design

The respondents of our questionnaire are the users of Konak Square. At that point, there are two types of respondents. First of them is the permanent users of the area such as the tradesmen of Konak Square. In addition, the temporary users of the area; people who use this place from time to time or who pass through the Konak Square in order to reach some other places. The respondents have been asked their professions in order to get a general idea about the users of study area. The answers are mostly; tradesman, official, housewife, student, doctor, financier, engineer, lawyer, police officer, driver, cleaner, shop assistant, driver, imam, pedlar, street vender, etc. On the other hand, some of the respondents are retired and unemployed.

Second of all, the questionnaire has been answered by design professionals such as; city planners, architects, landscape architects and industrial designers in order to see the effects of design on crime and fear of crime in different dimensions. By choosing respondents from different types of users, it has been aimed to reach average responses and to find out how responses have changed considering the general users and the professionals of design point of view.

The questionnaires are not only given to respondents but they are also answered face to face while they were in Konak Square and the respondents are asked not to write their names on the questionnaire to prevent respondents from any group effects or any other factors that may affect the answers. With a few exceptions, approximately all of the questions are answered by the respondents. This is why the analysis of the data reflects all of the pictures of respondents about asked questions.

Safety Questionnaire has been responded by 160 users of Konak Square. In order to find out the different approaches from the design professionals and ordinary users point of view, the questionnaire has been asked both group of people. In this case, in addition to the 106 ordinary users, 54 design professionals have responded the questionnaire.

“Safety Questionnaire of Konak Square” consists of five sections in order to obtain detailed data about the area and the users (Appendix I). First part of the questionnaire consists of general questions which aim to define the characteristics of users of the study area, such as; gender, age, education and professions. Considering the results, it is possible to have a general idea about the demographic characteristics of respondents, in other words the users of Konak Square. Although demographic characteristics of the respondents have not been considered as intermediary variables for the relationship between design and crime, they are important to see which kinds of

respondents answered our questions. As mentioned above; it has been tried to reach average users of the area to construct the sample of the study. Therefore, in this study, we have tried to reach the thoughts and observations of not only design professionals but also general users of the study area.

In the second part, respondents are asked to find out how they reach the area and where do they come from generally. The aims of these questions are to clarify the transportation habits of the respondents and their preferences about public transportation in order to reach the Konak Square.

Third part of the questionnaire includes five specific questions which help us to learn about the usage characteristics of the study area, such as; the aim of respondents for being in Konak Square, their usage frequency and general visit time (including from the seasons to the parts of the day), etc. In addition, respondents were asked if they usually come to the area alone or with somebody. This question is asked for two reasons; first of all, if the users of the area feel safe while they are alone in Konak Square or do they prefer visiting the area with someone. The second aim of this question is to find out whether the respondents are satisfied with the area and can they spend their spare time in there, or not.

In the fourth part, respondents are asked to what they like or dislike about Konak Square and how they describe the area generally. They are also asked if they feel any fear of crime while they are using the study area.

The last part of the questionnaire consists of eleven questions which were prepared in order to examine the feelings and thoughts of respondents about Konak Square design features and their feelings of security.

At the beginning of the study, it has been suggested that there are close relationships between crime and design features of the spatial built environment. In order to support this theory, the results of the safety questionnaire have been analysed by using cross-correlation techniques and chi-squared analysis.

The chi-square tests provide hypothesis tests for qualitative data, where you have categories instead of numbers. Qualitative data are summarized using counts and percentages. Chi-squared tests are therefore based on counts that represent the number of items in the sample falling into each category. The chi-squared statistics measures the difference between the actual counts and the expected counts as follows;

$$\text{Chi}-\text{square statistics} = \text{Sum of } \frac{(\text{Observed count} - \text{Expected count})^2}{\text{Ewpected count}} = \sum \frac{(O_i - E_i)^2}{E_i}$$

where the sum extends over all categories or combinations of categories. The definition of expected count will depend on the particular form of the null hypothesis being tested.

Based on the chi-squared statistics as a measure of how close the data set conforms to the null hypothesis, the chi-squared test can decide whether the null hypothesis is a reasonable possibility or not (Siegel 2000).

The chi-square test for equality of percentages is used to decide whether a table of observed counts or percentages could reasonably have come from a population with known percentages (the reference values).

The data: A table indicating the count for each category for a single qualitative variable.

The hypotheses are:

H_o: The population percentages are equal to a set of known, fixed reference values.

H_i: The population percentages are not equal to this set of reference values, at least one category is different.

For the chi-squared statistics, the expected count for each category is the population reference percentage multiplied by the sample size, n. The degrees of freedom equal the number of categories minus 1.

If the chi-square statistics is larger than the critical value from the chi-squared table for the appropriate number of degrees of freedom, you have evidence that the observed counts are very different from those expected for your reference percentages. You would reject the null hypothesis and accept the research hypothesis, concluding that the observed sample percentages are significantly different from the reference values.

> If the chi-squared statistics is smaller than the critical value from the chi-squared table, then the observed data are not very different from what you would expect based on the reference percentages. You would accept the null hypothesis as a reasonable possibility. The observed sample percentages are not significantly different from the reference values (Siegel 2000, p. 683).

When you have bivariate qualitative data, you may wish to test whether the two variables are associated or not. Two qualitative variables are said to be independent if knowledge about the value of one variable does not help you predict the other; that is, the probabilities for one variable are the same as the conditional probabilities of occurrence for one variable when you restrict attention to just one category of the other variable. Your sample data set provides estimates of these population percentages and conditional population percentages.

One way to summarize bivariate qualitative data is to use overall percentages, which give you the relative frequency of each combination of categories, one for each variable. Another approach is to use the percentages by one of the variables to obtain a profile of estimated conditional probabilities for the other variable given each category of the first variable. The chi-squared test for independence is used to decide whether two qualitative variables are independent or not, based on a table of observed counts from a bivariate qualitative data set. It is computed from a table that gives the counts you would expect if the two variables were independent.

The hypotheses are:

H_o: The two variables are independent of one another. That is, the probabilities for either variable are equal to the conditional probabilities given the other variable.

H_1: The two variables are associated; they are not independent of one another. There is at least one category of one variable whose probability is not equal to the conditional probability given some category for the other variable.

The expected table is constructed as follows: For each combination of categories, one for each variable, multiply the count for one category by the count for the other category, then divide by the total sample size, n:

$$\text{Expected count} = \frac{\left(\begin{array}{l}\text{Count for category}\\ \text{for one variable}\end{array}\right)\left(\begin{array}{l}\text{Count for category}\\ \text{for other variable}\end{array}\right)}{n}$$

The assumptions are:

1. The data set is a random sample from the population of interest,
2. At least five counts are expected in each combination of categories.

When calculating the chi-squared statistic in the test for independence,

$$\text{Degrees of freedom (df)} = \frac{\left(\begin{matrix}\text{Number of categories}\\ \text{for first variable}\end{matrix} - 1\right)\left(\begin{matrix}\text{Number of categories}\\ \text{for other variable}\end{matrix} - 1\right)}{n}$$

If the chi-squared statistic is larger than the critical value from the chi-squared table, you have evidence that the observed counts are very different from those that would be expected if the variables were independent. You would reject the null hypothesis of independence and accept the research hypothesis, concluding that the variables show significant association.

If the chi-squared statistic is smaller than the critical value from the chi-squared table, the observed data are not very different from what you would expect if they were independent in the population. You would accept the null hypothesis of independence (as a reasonable possibility) and conclude that the variables do not show significant association (Siegel 2000, pp. 684-685).

Considering the results of Konak Square questionnaire, cross-tabulation method and chi-squared analysis are used to analyze the relationship between fear of crime and spatial built environment. To do this, statistical hypothesis H_o and hypothesis H_1 have been asked for each case and cross-tabulation tables have been produced in order to find out the answers;

H_o: The two variables are independent of one another.

H_1: The two variables are associated; they are not independent of one another.

While analysing the chi-square tests; for the (2x2) cross-tabulation table:

- if the minimum expected count is bigger than 25, Pearson Chi-Square has to be considered,

- if the minimum expected count is between 5-25, Continuity Correction has to be considered,

- if the minimum expected count is smaller than 5, Fisher's Exact Test has to be considered.

On the other hand, if the format of the cross-tabulation table is bigger than (2x2) Pearson Chi-Square always has to be considered. In this case, if;

- Asymp. Sig. < 0,05 ; the two variables are associated; they are not independent of one another.

- Asymp. Sig. ≥ 0,05 ; the two variables are independent of one another.

4.2.3. Systematic Observations

In order to find out the relationships between design features of Konak Square and the occurrences of crime, as well as fear of crime, the area has been observed through the study. At that point, physical characteristics of the selected area have been analyzed through CPTED principles which are derived from considering the previous CPTED studies explained in the literature review chapter, including; lighting, concealment and entrapment spots, surveillance and visibility by others, land use mix, activity generators and sense of ownership.

In order to realize how these principles affect the occurrence of crime or fear of crime, brief explanations of CPTED principles are given below;

- **Lighting:** Well-designed public lighting increases the opportunity for surveillance at night and also sends out positive messages about the management of an area. Well-lit spaces are crucial in reducing the fear of crime, making places more liveable by increasing legitimate activity after dark. Therefore, public places should have adequate lighting, considering their physical features as well as activities included. In addition, lighting should be sensitive to the needs of residents and users. Doing this, it is possible to provide security and to decrease the feelings of insecurity. Lighting in public places that are vulnerable to crime can also be vulnerable to vandalism, as well. In this case, design features and placement of lighting fixtures should also be resistant to vandalism.

- **Surveillance and visibility by others:** Natural surveillance refers to the ability to see and be seen by others by maximising visibility. It not only gives people the feelings of security, but also reduces the fear of crime. This can be achieved through the maintenance of clear sight lines, the reduction of isolation, improvements to the mixture

and intensity of space use, effective lighting, elimination of concealment and entrapment spots, and the intelligent use and placement of activity generators.

- **Concealment and entrapment spots:** Considering the design features of public places, it is crucial that, existence of concealment or entrapment spots reduce the security of the area providing potential hiding places and escape routes. For instance; where footpaths are required, they should be as straight as possible and wide, avoiding potential hiding places. Additionally, keeping pedestrians and vehicles at the same level will avoid creating intimidating spaces such as subways, footbridges, underpasses, etc.

- **Land use mix:** Public places should be provided by compatible activities that keep people in the area, not only day time but also at night. This provides natural surveillance and decreases the feelings of insecurity during the day and night. At the same time, a mix of complementary land-uses and activities allows public places to be lively at any time of the day and also increases the sense of ownership, as well.

- **Activity generators:** Places where the level of human activity is appropriate to the location create a reduced risk of crime and a sense of safety at all times. Crime can be reduced through the 'eyes on the street' of people going about their everyday activities. On the other hand, too much activity may create conflict, risks anonymity and can also lead to increases in the opportunity to commit particular types of crime, such as; pick-pocketing. In this case, decisions about which levels and types of activity are appropriate needs to be made for the local context. Public places should also be overlooked by surrounding compatible activities for increasing safety of the area. Activities in public places such as; street cafes, exhibitions, etc. put eyes on the street and thus provide natural surveillance. That is why, activity generators are crucial to create safer places.

- **Sense of ownership:** Good design of public spaces including visibility, clear signage, good lighting, CCTV, as well as art and planting features creates a sense of ownership that not only encourage people to use the area, but also increase the safety of the area. Encouraging the users of public places to feel a sense of ownership and responsibility for their surroundings can make an important contribution to crime prevention. On the other hand, uncertainty of ownership can reduce responsibility and

increase the likelihood of crime and anti-social behaviour. In this case, involving users in the management and design of their area provides a real sense of ownership. This can be achieved in many ways, such as town centre management partnerships, regeneration programmes, etc. Allowing public places to express their identity can leads to feelings of ownership and thus, reduce crime. It must be considered that, proper attention to the design quality and management of the public places increases its safety and promotes greater respect towards the environment.

Through the observation process, the area is analyzed by considering these features and the twelve sub-areas have been examined in the light of these features as well as their design characteristics. At that point, characteristics to be recorded have been considered to affect either actual crime or the fear of crime.

Careful attention has been paid to observe the whole area through the different hours of the day. The observations have shown that characteristics and intensity of the users vary through the weekdays and weekend, as well. For instance; people use this area mostly because they work here or they come to the area in order to reach somewhere else by using any type of public transportation such as; ferry, subway or bus. In addition, Konak Square includes many official buildings and that is why people use the area mostly at weekdays. On the contrary, people mostly use Konak Square for shopping and to use public transportation, at weekends. They do not prefer spending their spare time there because of lack of activities that keep people in the area and increase the livability of Konak Square. At the same time, considering the results of the questionnaire, it is obvious that, users of Konak Square are mostly not satisfied with the design characteristics of the area.

4.3. Research Data:

4.3.1. Official Crime Data of the Districts of İzmir

At the beginning of the study official crime data has been obtained from the records of İzmir Police Department (Kemeraltı Police Station) in order to analyze the characteristics and rates of crime in all districts of İzmir (Konak, Buca, Balçova, Karşıyaka, Çiğli, Güzelbahçe, Gaziemir, Bornova, Narlıdere). These data include the records of 2003, 2004 and 2005 (records of the year 2005 cover from January to

August). Crime reports have been collected and analyzed for each district, and then diagrams have been prepared in order to explain the types and rates of crime events in İzmir for three-year-period.

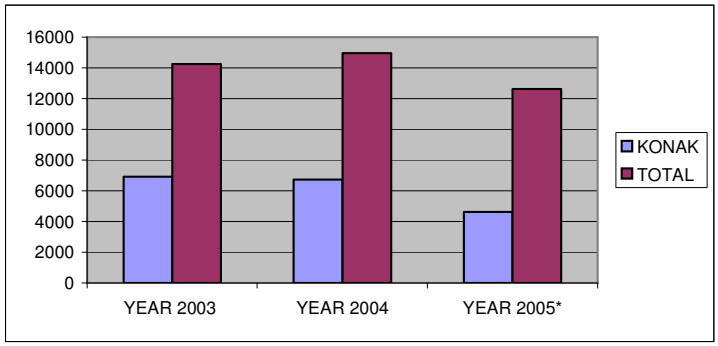
Figure 4.7. The districts of İzmir

Table.4.1. The Rates of Crime Events in 2003-2004-2005
(Source: İzmir Police Department 2006)

DISTRICTS OF İZMİR	YEAR 2003	YEAR 2004	YEAR 2005*
KONAK	**6913**	**6734**	**4630**
BORNOVA	3114	3553	2934
BUCA	1207	1417	1118
BALÇOVA	309	323	209
KARŞIYAKA	1081	1468	1643
ÇİĞLİ	647	503	1021
GAZİEMİR	725	706	717
NARLIDERE	205	188	290
GÜZELBAHÇE	51	70	59
TOTAL	**14252**	**14962**	**12621**

*records of 2005 covers from January to August.

As seen in table 4.1, considering the total crime rates of the districts of İzmir, the rates of crime increase through the years. For instance, while the total crime rates of the year 2003 is 14252, this increase to 14962 for the year 2004. In that case, although the official crime data for the year 2005 only covers from January to August and the total crime rates for the year 2005 are likely to be higher than previous year, in other words the year 2004, as well.



*records of 2005 covers from January to August.

Figure 4.8. The Rates of Crime Events in 2003-2004-2005
(Source: İzmir Police Department, 2006)

Konak is the biggest and the most crowded district of the İzmir. Konak district consists of sub-districts of Hatay, Basın sitesi, Güzelyalı, Eşrefpaşa, Yeşilyurt, Gültepe, Basmane, Alsancak, Kemeraltı, Karabağlar, Gürçeşme and Çınarlı. The Konak Square is also located in the Konak district, as well. In this case, considering official crime records, it is possible to say that, Konak district has the highest share percentage in İzmir. The rates of crime events in the years of 2003-2004-2005 have been presented above to give an idea about the comparisons of the districts of İzmir.

Table 4.2. The types and rates of crime events in Konak District
(Source: İzmir Police Department, 2006)

TYPES OF CRIME	YEAR 2003	YEAR 2004	YEAR 2005*
THEFT FROM HOUSE	1357	849	490
THEFT FROM SHOP	1090	1128	804
THEFT FROM VEHICLE	871	660	450
THEFT OF VEHICLE	954	1181	751
PICKPOCKETING & SNATCHING	827	1008	676
THEFT	430	584	376
PILLAGE	240	296	337
MURDER	58	56	53
WOUNDING	698	711	541
TRAFFIC ACCIDENT	388	261	152
TOTAL	**6913**	**6734**	**4630**

* records of the year 2005 cover from January to August.

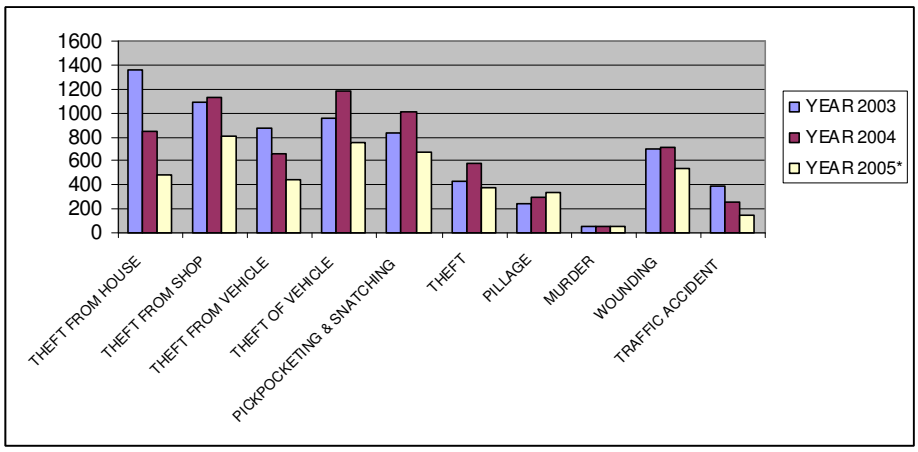


Figure 4.9. The types and rates of crime events in Konak District
(Source: İzmir Police Department, 2006)

As seen above, considering the records of the İzmir Police Department, the types of crime events in Konak District include theft from house, theft from shop, theft from vehicle, pickpocketing, snatching, pillage, murder, wounding and traffic accidents as well.

In addition to the Konak District, the types and rates of crime events also have been obtained from the official records for giving a general knowledge about changing crime rates and characteristics for each district of İzmir.

Table 4.3. The types and rates of crime events in Buca District
(Source: İzmir Police Department, 2006)

TYPES OF CRIME	YEAR 2003	YEAR 2004	YEAR 2005*
FORGERY	39	54	63
THEFT	868	1090	727
PICKPOCKETING&SNATCHING	28	40	84
PILLAGE	37	28	73
SWINDLE	19	26	18
WOUNDING	134	141	119
TRAFFIC ACCIDENT	82	38	34
TOTAL	**1207**	**1417**	**1118**

* records of the year 2005 cover from January to August.

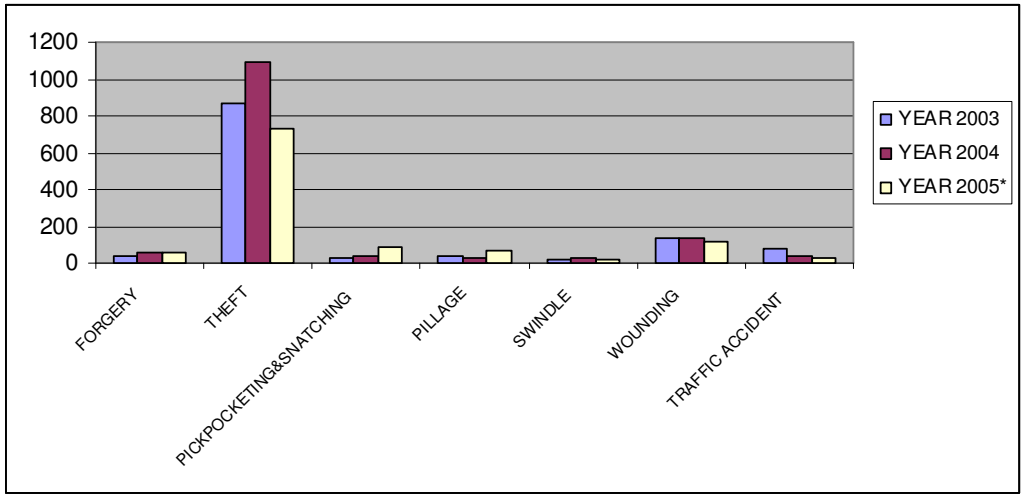


Figure 4.10. The types and rates of crime events in Buca District
(Source: İzmir Police Department, 2006)

Table 4.4. The types and rates of crime events in Balçova District
(Source: İzmir Police Department, 2006)

TYPES OF CRIME	YEAR 2003	YEAR 2004	YEAR 2005*
FORGERY	0	9	9
THEFT	238	239	149
PICKPOCKETING&SNATCHING	18	14	4
PILLAGE	11	8	12
SWINDLE	5	7	2
MURDER	2	5	3
WOUNDING	35	41	30
TOTAL	**309**	**323**	**209**

* records of the year 2005 cover from January to August.

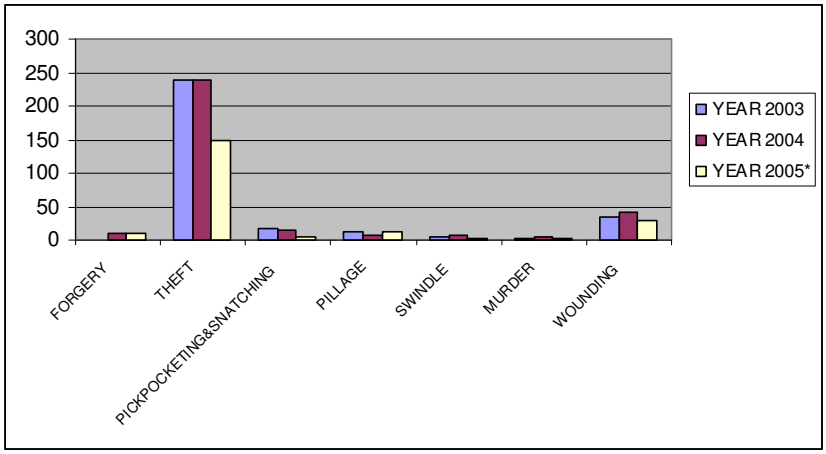


Figure 4.11. The types and rates of crime events in Balçova District
(Source: İzmir Police Department, 2006)

Table 4.5. The types and rates of crime events in Karşıyaka District
(Source: İzmir Police Department, 2006)

TYPES OF CRIME	YEAR 2003	YEAR 2004	YEAR 2005*
THEFT FROM HOUSE	230	309	398
THEFT FROM VEHICLE	157	138	141
THEFT OF VEHICLE	157	239	350
THEFT FROM SHOP	119	151	166
PICKPOCKETING&SNATCHING	173	203	230
PILLAGE	8	37	27
TRAFFIC ACCIDENT	186	157	130
MURDER	30	28	17
WOUNDING	21	206	184
TOTAL	**1081**	**1468**	**1643**

* records of the year 2005 cover from January to August.

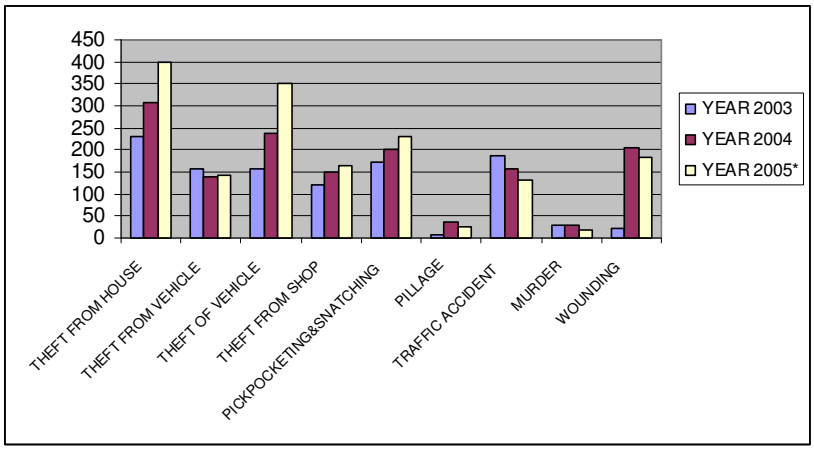


Figure 4.12. The types and rates of crime events in Karşıyaka District
(Source: İzmir Police Department, 2006)

Table 4.6. The types and rates of crime events in Çiğli District
(Source: İzmir Police Department, 2006)

TYPES OF CRIME	YEAR 2003	YEAR 2004	YEAR 2005*
THEFT FROM HOUSE	168	116	277
THEFT OF VEHICLE	82	89	97
PICKPOCKETING&SNATCHING	63	80	147
TRAFFIC ACCIDENT	331	211	494
MURDER	3	7	6
TOTAL	**647**	**503**	**1021**

* records of the year 2005 cover from January to August.

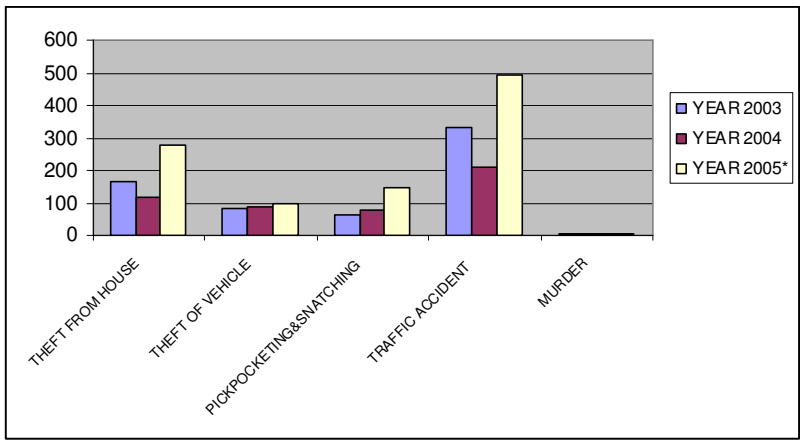


Figure 4.13. The types and rates of crime events in Çiğli District
(Source: İzmir Police Department, 2006)

Table 4.7. The types and rates of crime events in Güzelbahçe District
(Source: İzmir Police Department, 2006)

TYPES OF CRIME	YEAR 2003	YEAR 2004	YEAR 2005*
THEFT	26	28	26
PICKPOCKETING&SNATCHING	6	9	7
TRAFFIC ACCIDENT	5	7	13
WOUNDING	14	26	13
TOTAL	**51**	**70**	**59**

* records of the year 2005 cover from January to August.

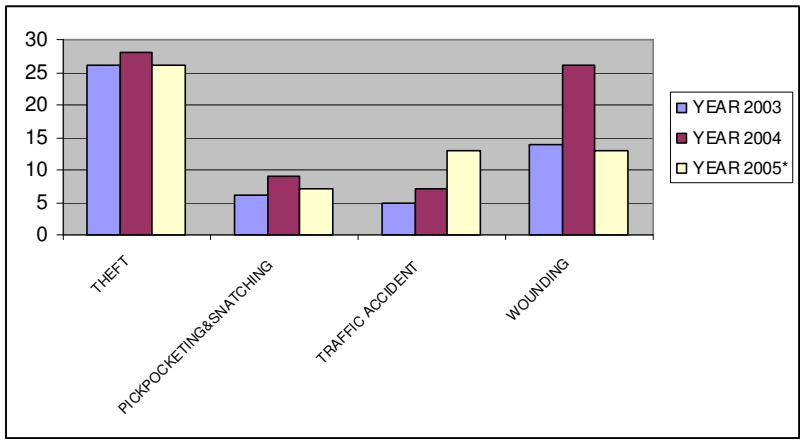


Figure 4.14. The types and rates of crime events in Güzelbahçe District
(Source: İzmir Police Department, 2006)

Table 4.8. The types and rates of crime events in Gaziemir District
(Source: İzmir Police Department, 2006)

TYPES OF CRIME	YEAR 2003	YEAR 2004	YEAR 2005*
AGAINST PROPERTY	469	474	567
AGAINST PERSON	237	200	133
TRAFFIC ACCIDENT	19	32	17
TOTAL	**725**	**706**	**717**

* records of the year 2005 cover from January to August.

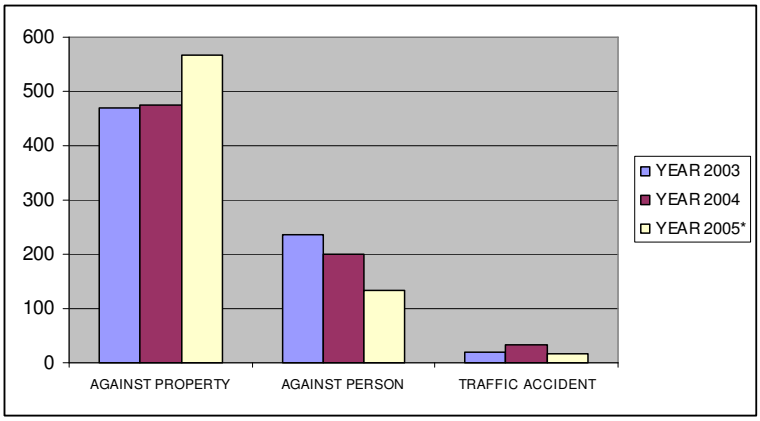


Figure 4.15. The types and rates of crime events in Gaziemir District
(Source: İzmir Police Department, 2006)

Table 4.9. The types and rates of crime events in Bornova District
(Source: İzmir Police Department, 2006)

TYPES OF CRIME	YEAR 2003	YEAR 2004	YEAR 2005*
THEFT FROM HOUSE	1177	1186	979
THEFT FROM VEHICLE	361	566	523
THEFT FROM SHOP	717	906	581
PICKPOCKETING&SNATCHING	134	138	307
TRAFFIC ACCIDENT	464	510	367
MURDER	21	31	14
WOUNDING	240	216	163
TOTAL	**3114**	**3553**	**2934**

* records of the year 2005 cover from January to August.

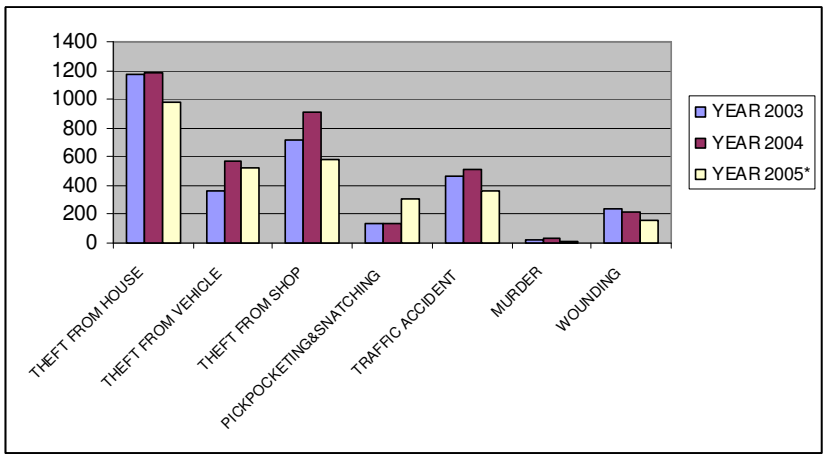


Figure 4.16. The types and rates of crime events in Bornova District
(Source: İzmir Police Department, 2006)

Table 4.10. The types and rates of crime events in Narlıdere District
(Source: İzmir Police Department, 2006)

TYPES OF CRIME	YEAR 2003	YEAR 2004	YEAR 2005*
FORGERY	0	10	11
PILLAGE	12	15	8
THEFT FROM HOUSE	54	53	120
THEFT OF VEHICLE	15	29	48
THEFT FROM VEHICLE	18	13	14
THEFT FROM SHOP	29	20	45
PICKPOCKETING&SNATCHING	7	6	12
TRAFFIC ACCIDENT	25	24	8
MURDER	7	3	3
WOUNDING	38	15	21
TOTAL	**205**	**188**	**290**

* records of the year 2005 cover from January to August.

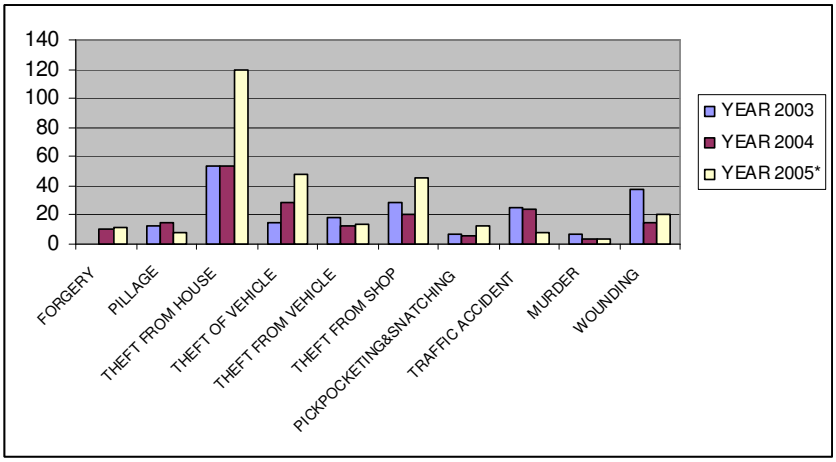


Figure 4.17. The types and rates of crime events in Narlıdere District
(Source: İzmir Police Department, 2006)

4.3.2. Crime Characteristics of the Konak Square

For the study, official crime reports for the year 2001-2002 (two-year-period before the implementation) and 2004-2005 (two-year-period after the implementation) have been considered in order to clarify the crime characteristics and rates of the Konak Square. Official crime records have been collected for each month of the year. The main reason for the selection of twelve months of the year is to analyze how do crime and fear of crime change according to the seasons and related changes.

On the other hand, according to the police officers, some crime incidents have not been recorded depending on some reasons. They briefly explain that because of the repetition of same crime events by the same offenders (even several times a day), they usually ignore some cases and they also do not record them to avoid applying the long procedures. In that case, the actual crime rates are expected to be higher than the recorded crime events.

Based on the official crime records obtained from the İzmir Police Department, Konak Square has been divided into seven sub-areas. Basically, there are seven sub-areas where crime events mostly occur in Konak Square:

- Konak Square (no sub-area specified)
- Clock Tower- Municipality Building
- Entrance of Kemeraltı Street
- Surroundings of İşbank- Akbank
- Entrance of Subway
- Surroundings of Quay
- In front of the YKM building

The official crime records which are recorded by İzmir Police Department for each sub-area have been collected in order to clarify the differences among these places. Although these places are very close to each other, there are specific differences between crime rates and crime types of these sub-areas.

Considering the official crime records of the years 2001-2002 and 2004-2005, it is possible to say that "in front of the YKM building" has the highest crime rates for each year among these sub-areas. On the other hand, entrance of subway has only two-year-records (2004 and 2005) that are because it was not opened before this date. Consequently, it has the lowest crime rates, as well.

Table 4.11. Crime Scenes According to the Years
(Source: İzmir Police Department, 2006)

CRIME SCENE	YEAR 2001	YEAR 2002	YEAR 2004	YEAR 2005	TOTAL
KONAK SQUARE	73	55	23	38	189
CLOCK TOWER-MUNICIPALITY BUILDING	20	42	30	30	122
ENTRANCE OF KEMERALTI STREET	18	36	12	18	84
AROUND İŞBANK-AKBANK	32	60	25	30	147
ENTRANCE OF SUBWAY	0	0	18	15	33
AROUND QUAY	24	24	18	21	87
IN FRONT OF THE YKM BUILDING	66	36	42	42	186
TOTAL	233	253	168	194	

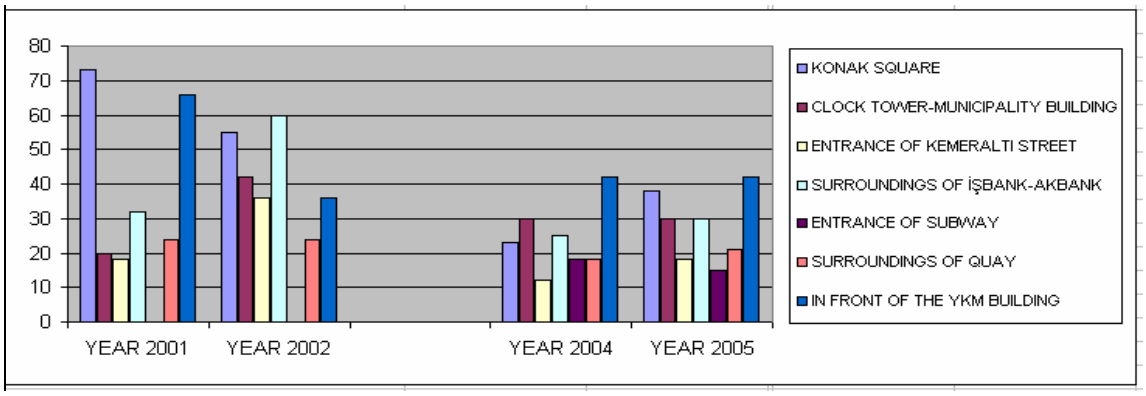


Figure 4.18. Crime Scenes According to the Years
(Source: İzmir Police Department, 2006)

There are five types of crime that have been recorded in Konak Square, which are;

- theft from shop
- forgery
- snatching (theft from person)
- pickpocketing and
- wounding.

Pickpocketing, remarkably has the highest rate among other types of crime. On the other hand, theft from shop has the lowest percentage. Considering the total crime records for each year, it is possible to say that, crime rates of Konak Square increased

from 2001 to 2002, and also from 2004 to 2005. Although crime rates increased from 2001 to 2002 and from 2004 to 2005, total crime records decreased after redesign of the area. In that case, total rates of the Konak Square decreased from 486 to 362.

. Table 4.12. Types of Crime
(Source: İzmir Police Department, 2006)

TYPES OF CRIME	YEAR-2001	YEAR-2002	YEAR-2004	YEAR-2005
THEFT FROM SHOP	9	9	7	9
FORGERY	25	30	36	42
SNATCHING	24	27	11	12
PICKPOCKETING	154	163	104	120
WOUNDING	21	24	10	11
TOTAL	**233**	**253**	**168**	**194**

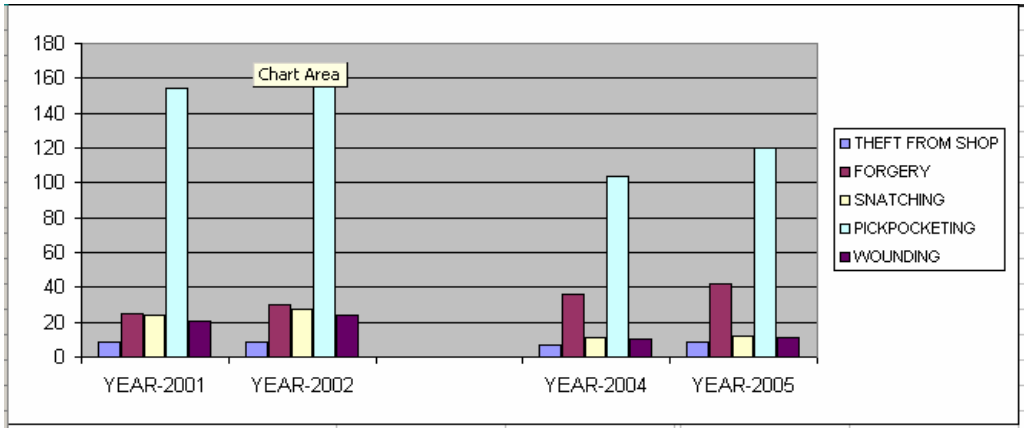


Figure 4.19. Types of Crime
(Source: İzmir Police Department, 2006)

On the other hand, considering these two main groups of years (before redesign of the area; 2001-2002) and (after redesign of the area; 2004-2005), as we have seen that the total rates of crime has decreased.

In that case, the question is that "Does design of the built environment affect crime or fear of crime?" Although the answer to this question is complicated and must be considered in many aspects, it is obvious that crime rates of Konak Square have decreased after redesign of the area. So, design must be effective to reduce crime in some cases.

Crime rates of Konak Square demonstrate some changes depending on the seasons of the year. For example, considering the records, we notice that the crime rates of summer are higher than winter. As we have learned from the police officers, the main reason of this is the "increased population" of visitors of the area.

Especially in summer, in addition to its routine users, many tourists have visited the Konak Square which are the potential victims for offenders. Therefore, the crime rates of summer are higher than other seasons.

Table 4.13. Crime Rates According to the Months
(Source: İzmir Police Department, 2006)

CRIME RATES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
YEAR 2001	19	14	17	19	20	26	29	30	21	13	12	13	**233**
YEAR 2002	24	15	15	20	27	30	32	30	20	15	13	12	**253**
YEAR 2004	14	8	10	11	17	23	25	19	13	10	9	9	**168**
YEAR 2005	16	9	11	13	20	24	26	25	15	13	11	11	**194**
TOTAL	73	46	53	63	84	103	112	104	48	51	45	45	

Although crime rates change according to the seasons, they also have some changes depending on the hours of the day. In order to show that, the hours of the day have been separated into eight groups, which as follows:

Group 1 : (24.00-02.59) ; Group 2 : (03.00-05.59)
Group 3 : (06.00-08.59) ; Group 4 : (09.00-11.59)
Group 5 : (12.00-14.59) ; Group 6 : (15.00-17.59)
Group 7 : (18.00-20.59) ; Group 8 : (21.00-23.59)

Considering each year, it is possible to say that crime events mostly occur between 12.00pm - 20.59 pm. Group 1: (24.00-02.59); Group 2: (03.00-05.59); and Group 3: (06.00-08.59) have the lowest crime rates because the population and the usage of Konak Square are too low in this time period. On the other hand, crime rates of the area have the highest rate between 12.00 pm – 21.00 pm. It is obvious that the main reason of this result is the highest population and usage of the area during this time period. The main reason of this, in addition to the routine users of the area, there are many visitors and tourists -particularly in summer- at this time of the day.

In that case, another crucial point is that “pickpocketing” has the highest rate among all types of crime. In addition, considering the total rates for each group, it is crucial that, Group 5: (12.00-14.59) pm. is the peak point for each year.

Table 4.14. Crime time- 2001.
(Source: İzmir Police Department, 2006)

CRIME TIME-2001	24.00-02.59	03.00-05.59	06.00-08.59	09.00-11.59	12.00-14.59	15.00-17.59	18.00-20.59	21.00-23.59	TOTAL
THEFT FROM SHOP	0	0	0	1	3	3	1	1	**9**
FORGERY	0	0	2	4	7	6	4	2	**25**
SNATCHING	1	0	1	3	5	5	5	4	**24**
PICKPOCKETING	0	0	6	20	62	42	19	5	**154**
WOUNDING	5	2	2	1	1	1	3	6	**21**
TOTAL	**6**	**2**	**11**	**29**	**81**	**58**	**30**	**16**	

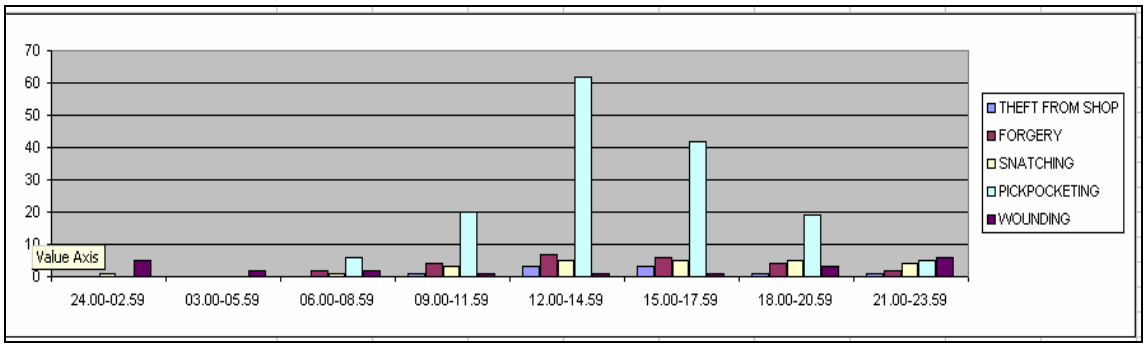


Figure 4.20. Crime time- 2001.
(Source: İzmir Police Department, 2006)

Table 4.15. Crime time- 2002.
(Source: İzmir Police Department, 2006)

CRIME TIME-2002	24.00-02.59	03.00-05.59	06.00-08.59	09.00-11.59	12.00-14.59	15.00-17.59	18.00-20.59	21.00-23.59	TOTAL
THEFT FROM SHOP	0	0	1	2	3	1	2	0	**9**
FORGERY	0	0	1	4	9	6	7	3	**30**
SNATCHING	1	0	0	4	5	6	6	5	**27**
PICKPOCKETING	0	0	3	15	75	45	22	3	**163**
WOUNDING	4	3	1	2	2	1	4	7	**24**
TOTAL	**5**	**3**	**6**	**32**	**94**	**59**	**36**	**18**	

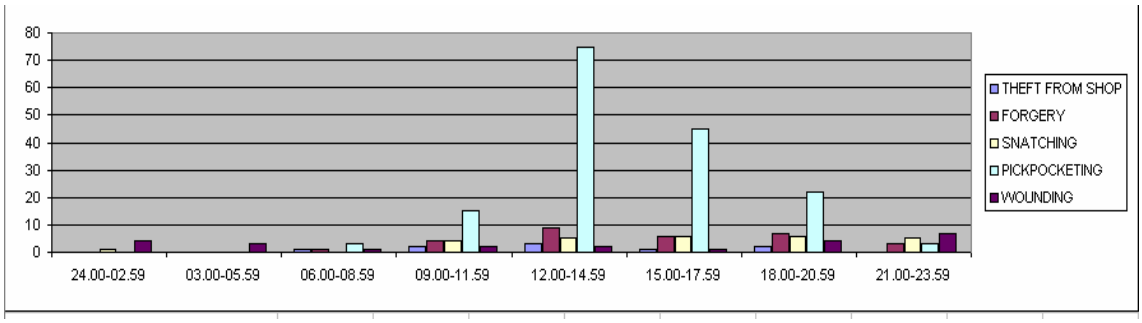


Figure 4.21. Crime time- 2002.
(Source: İzmir Police Department, 2006)

Table 4.16. Crime time- 2004.
(Source: İzmir Police Department, 2006)

CRIME TIME-2004	24.00-02.59	03.00-05.59	06.00-08.59	09.00-11.59	12.00-14.59	15.00-17.59	18.00-20.59	21.00-23.59	TOTAL
THEFT FROM SHOP	0	0	0	0	1	2	3	1	**7**
FORGERY	0	0	3	4	7	13	6	3	**36**
SNATCHING	0	0	0	0	2	3	4	2	**11**
PICKPOCKETING	0	0	2	12	40	32	15	3	**104**
WOUNDING	2	1	1	0	0	1	2	3	**10**
TOTAL									

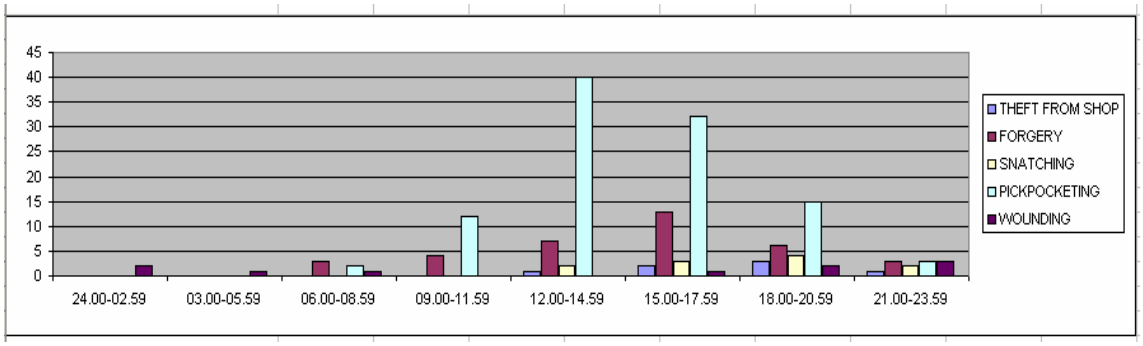


Figure 4.22. Crime time- 2004.
(Source: İzmir Police Department, 2006)

Table 4.17. Crime time- 2005.
(Source: İzmir Police Department, 2006)

CRIME TIME-2005	24.00-02.59	03.00-05.59	06.00-08.59	09.00-11.59	12.00-14.59	15.00-17.59	18.00-20.59	21.00-23.59	TOTAL
THEFT FROM SHOP	0	0	1	1	1	4	2	0	**9**
FORGERY	0	0	1	4	9	13	11	4	**42**
SNATCHING	1	0	2	1	1	1	4	2	**12**
PICKPOCKETING	0	0	3	10	51	28	24	4	**120**
WOUNDING	1	1	0	1	0	1	3	4	**11**
TOTAL									

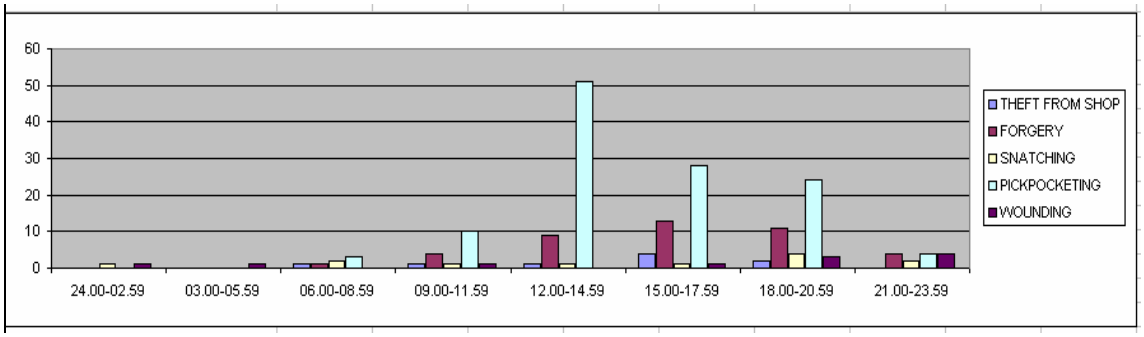


Figure 4.23. Crime time- 2005.
(Source: İzmir Police Department, 2006)

Table 4.18. Gender of Victims According to the Years
(Source: İzmir Police Department, 2006)

GENDER OF VICTIMS	YEAR 2001	YEAR 2002	YEAR 2004	YEAR 2005
FEMALE	130	144	94	110
MALE	103	109	74	84
TOTAL	**233**	**253**	**168**	**194**

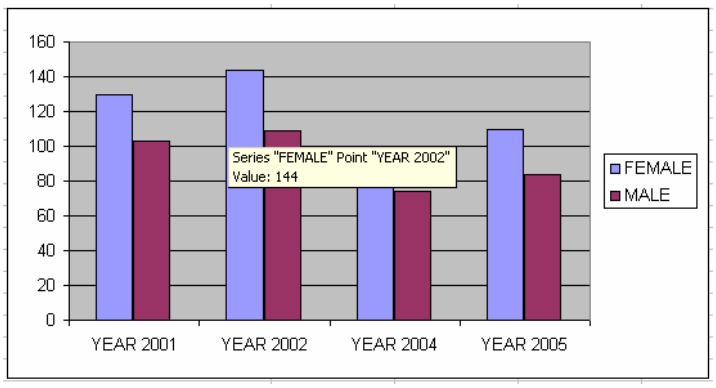


Figure 4.24. Gender of Victims According to the Years
(Source: İzmir Police Department, 2006)

Table 4.19. Age of Victims According to the Years
(Source: İzmir Police Department, 2006)

AGE OF VICTIMS	YEAR 2001	YEAR 2002	YEAR 2004	YEAR 2005
18 -	20	28	15	18
18 +	213	225	153	176
TOTAL	**233**	**253**	**168**	**194**

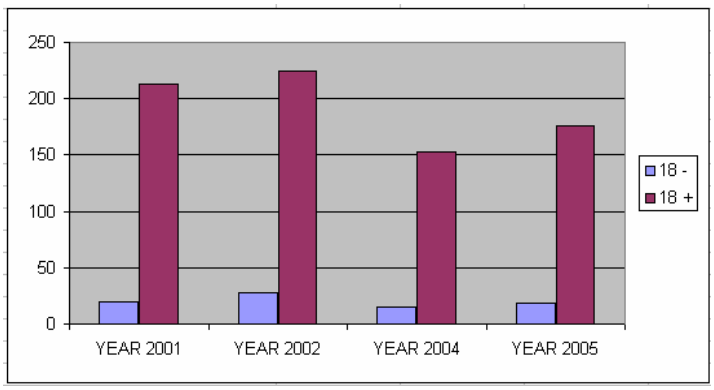


Figure 4.25. Age of Victims According to the Years
(Source: İzmir Police Department, 2006)

Table 4.20. Gender of Offenders According to the Years
(Source: İzmir Police Department, 2006)

GENDER	YEAR 2001	YEAR 2002	YEAR 2004	YEAR 2005
FEMALE	66	50	41	63
MALE	167	203	127	131
TOTAL	**233**	**253**	**168**	**194**

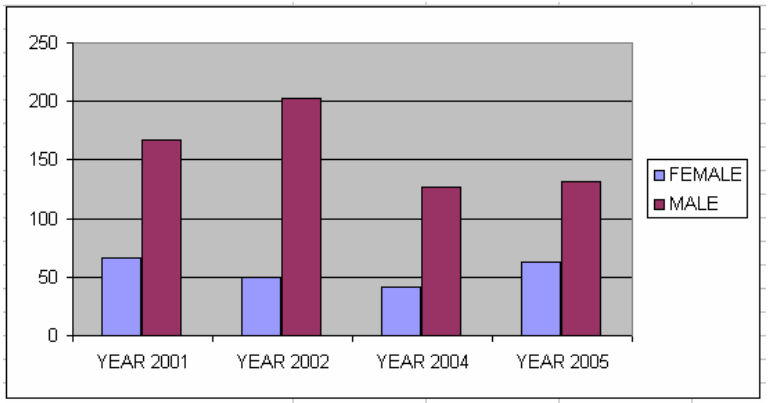


Figure 4.26. Gender of Offenders According to the Years
(Source: İzmir Police Department, 2006)

Table 4.21. Age of Offenders According to the Years
(Source: İzmir Police Department, 2006)

AGE	YEAR 2001	YEAR 2002	YEAR 2004	YEAR 2005
18-	90	105	74	84
18+	143	148	94	110
TOTAL	**233**	**253**	**168**	**194**

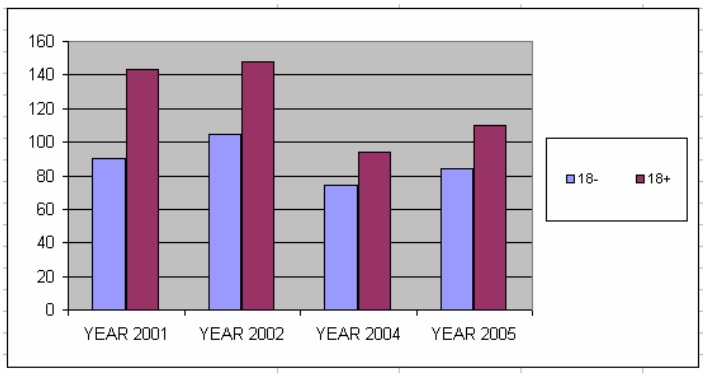


Figure 4.27. Age of Offenders According to the Years
(Source: İzmir Police Department, 2006)

4.3.3. Questionnaire Results/Findings

Safety questionnaire has been designed to find out whether there is any relationship between usage and design features of Konak Square and crime, as well as fear of crime. The questionnaire has been responded by general users of the area and design professionals to reach average responses and also to realize how responses have varied considering the general users and design professionals' point of view. The results have been analysed by using cross-correlation techniques and chi-squared analysis.

In this case, twelve sub-areas have been concluded from the results of the safety questionnaire and systematic observations, which of them show remarkable differences through the usage and design characteristics, including; Sub-area-1: Around Clock tower- municipality building; Sub-area-2: Entrance of Kemeraltı street; Sub-area-3: Around İşbank-Akbank; Sub-area-4: Around subway; Sub-area-5: Around shelters; Sub-area-6: Surroundings of quay; Sub-area-7: Parking lot; Sub-area-8: Public toilets; Sub-area-9: Around YKM building; Sub-area-10: Seating areas; Sub-area-11: Secondary paths; Sub-area-12: Exhibition areas.

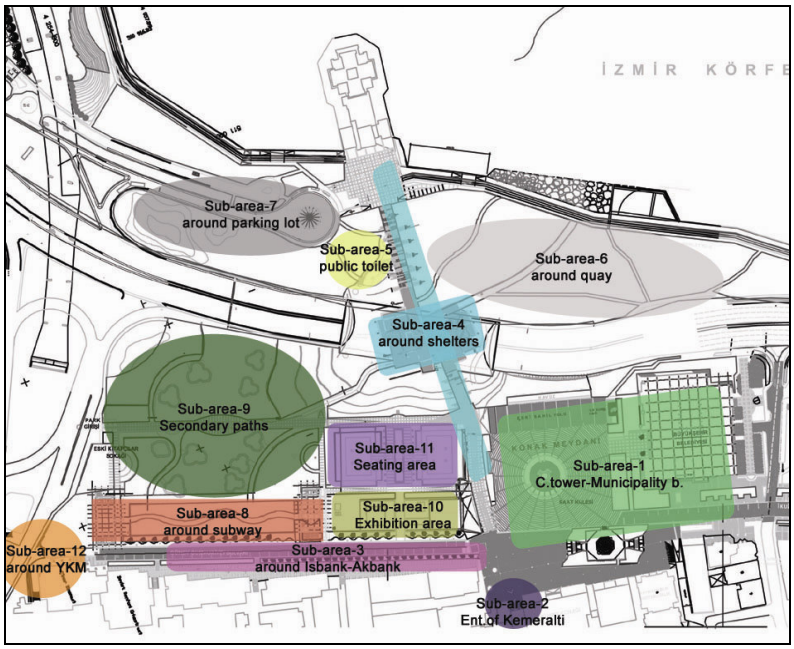


Figure 4.28. Sub-areas of the study area

4.3.3.1. Cross-Tabulation of Fear of Crime by Age

Table 4.22. Cross-Tabulation of Fear of Crime by Age

			Age						Total
			15-18	18-25	25-35	35-45	45-60	60+	
Fear of Crime	I feel safe	Count	2	11	16	20	5	3	57
		% within fear of crm.	3,5%	19,3%	28,1%	35,1%	8,8%	5,3%	100,0%
		% within age	22,2%	40,7%	30,8%	45,5%	25,0%	37,5%	35,6%
	I don't feel safe	Count	7	16	36	24	15	5	103
		% within fear of crm.	6,8%	15,5%	35,0%	23,3%	14,6%	4,9%	100,0%
		% within age	77,8%	59,3%	69,2%	54,5%	75,0%	62,5%	64,4%
Total		Count	9	27	52	44	20	8	160
		% within fear of crm.	5,6%	16,9%	32,5%	27,5%	12,5%	5,0%	100,0%
		% within age	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Table 4.23. Chi-Square Tests of Fear of Crime by Age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,398(a)	5	,494
Likelihood Ratio	4,456	5	,486
Linear-by-Linear Association	,045	1	,832
N of Valid Cases	160		

In order to clarify the relationship between age and fear of crime variables, respondents of the questionnaire have been analysed in six age groups. Considering the "age and fear of crime" cross-tabulation, the chi-square test statistically, there is no specific relationship between these two variables. Because Asymp. Sig. $\geq$ 0,05; which means that these two variables are independent of one another. Finally, the hypothesis H_o could be accepted.

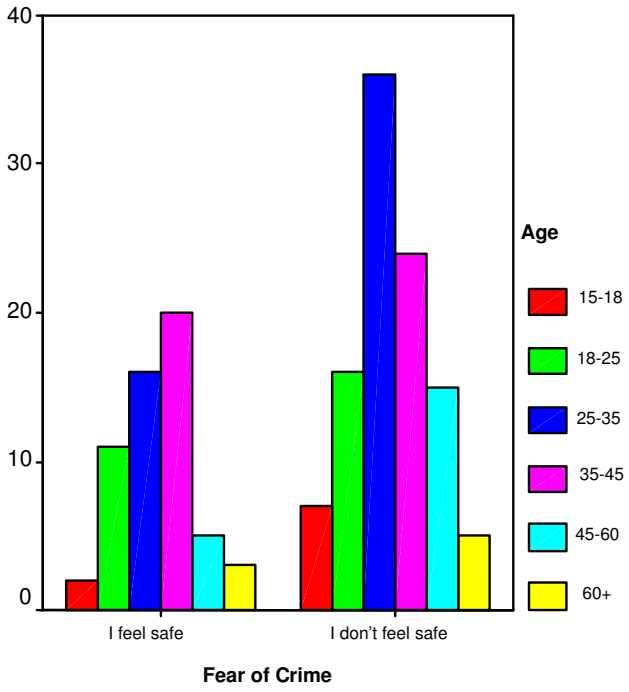


Figure 4.29. Cross-Tabulation of Fear of Crime by Age

In this case, it is possible to say that fear of crime does not only affect particular age of people. Truly, people who live in cities could feel insecure no matter what their ages are. That is why, the needs of users in cities - from children to adults and elder people- should always be considered in reducing crime and fear of crime by design studies for creating secure public places.

4.3.3.2. Cross-Tabulation of Fear of Crime by Gender

Table 4.24. Cross-Tabulation of Fear of Crime by Gender

			Fear of Crime		
			I feel safe	I don't feel safe	**Total**
Gender	Female	Count	19	67	86
		% within gender	22,1%	77,9%	100,0%
		% within fear of crime	33,3%	65,0%	53,8%
	Male	Count	38	36	74
		% within gender	51,4%	48,6%	100,0%
		% within fear of crime	66,7%	35,0%	46,3%
Total		Count	57	103	160
		% within gender	35,6%	64,4%	100,0%
		% within fear of crime	100,0%	100,0%	100,0%

Table 4.25. Chi-Square Tests of Fear of Crime by Gender

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	14,847(b)	1	,000		
Continuity Correction(a)	13,599	1	,000		
Likelihood Ratio	15,032	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	14,754	1	,000		
N of Valid Cases	160				

Considering the "gender and fear of crime" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. Statistically, in this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

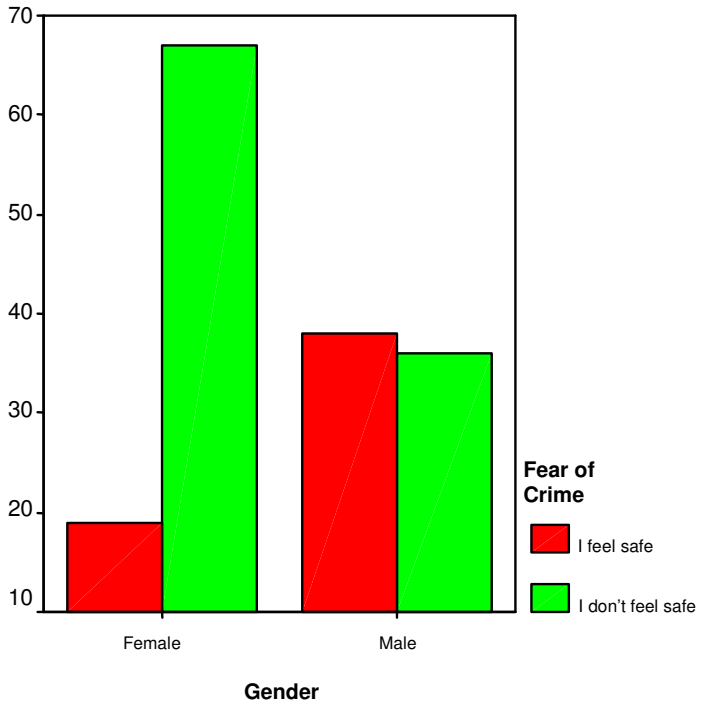


Figure 4.30. Cross-Tabulation of Fear of Crime by Gender

As a result, the questionnaire has shown that gender has significant effects on crime and fear of crime. Under the same circumstances, most of the women feel insecure in the area; however, almost half of the male users feel in danger. In other words, women are more vulnerable to crime and fear of crime than men do. No matter what their ages, women usually feel themselves insecure in cities, depending on bad circumstances such as; highly-risky crime areas and poorly-lit or designed public areas, etc.

4.3.3.3. Cross-Tabulation of Type of Crime by Gender

Table 4.26. Cross-Tabulation of Pickpocketing by Gender

			Pickpocketing		
			No	Yes	**Total**
Gender	Female	Count	31	55	86
		% within gender	36,0%	64,0%	100,0%
		% within pickp.	41,9%	64,0%	53,8%
	Male	Count	43	31	74
		% within gender	58,1%	41,9%	100,0%
		% within pickp.	58,1%	36,0%	46,3%
Total		Count	74	86	160
		% within gender	46,3%	53,8%	100,0%
		% within pickp.	100,0%	100,0%	100,0%

Table 4.27. Chi-Square Tests of Pickpocketing by Gender

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7,787(b)	1	,005		
Continuity Correction(a)	6,925	1	,008		
Likelihood Ratio	7,841	1	,005		
Fisher's Exact Test				,007	,004
Linear-by-Linear Association	7,739	1	,005		
N of Valid Cases	160				

Considering the gender and type of crime “pickpocketing” cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. According to the Table 4.26 , Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. At that point, the hypothesis H_o could be rejected.

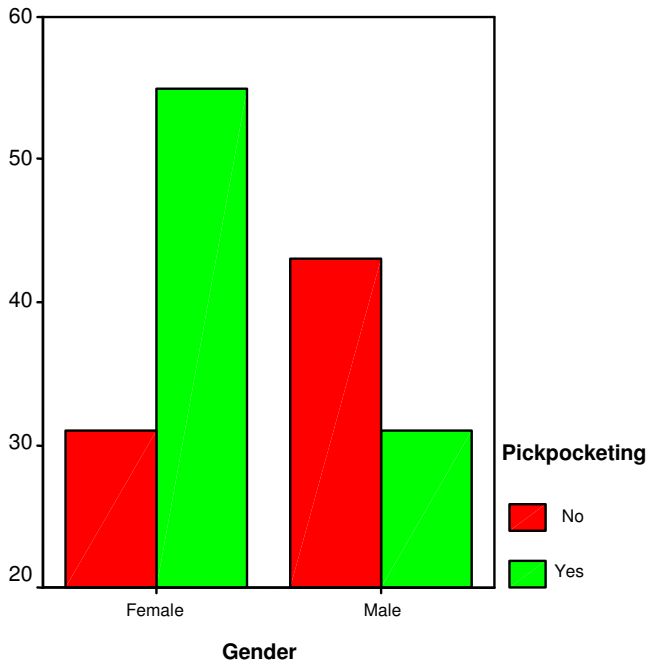


Figure 4.31. Cross-Tabulation of Pickpocketing by Gender

Considering the results of the safety questionnaire, it is obvious that, women feel more vulnerable to crime and anti-social behaviour than men, in public areas. These feelings of insecurity cover many types of crime, including pickpocketing, snatching, etc. According to the results, women mostly feel anxious about being a victim of pickpocketing, particularly during over-crowded hours of the area.

Table 4.28. Cross-Tabulation of Snatching by Gender

			Snatching		
			No	Yes	**Total**
Gender	Female	Count	49	37	86
		% within gender	57,0%	43,0%	100,0%
		% within snatc.	42,6%	82,2%	53,8%
	Male	Count	66	8	74
		% within gender	89,2%	10,8%	100,0%
		% within snatc.	57,4%	17,8%	46,3%
Total		Count	115	45	160
		% within gender	71,9%	28,1%	100,0%
		% within snatc.	100,0%	100,0%	100,0%

Table 4.29. Chi-Square Tests of Snatching by Gender

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	20,417(b)	1	,000		
Continuity Correction(a)	18,854	1	,000		
Likelihood Ratio	21,884	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	20,289	1	,000		
N of Valid Cases	160				

Considering the gender and type of crime "snatching" cross-tabulation, the chi-square test has shown that there is specific relationship between these two variables. Statistically, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

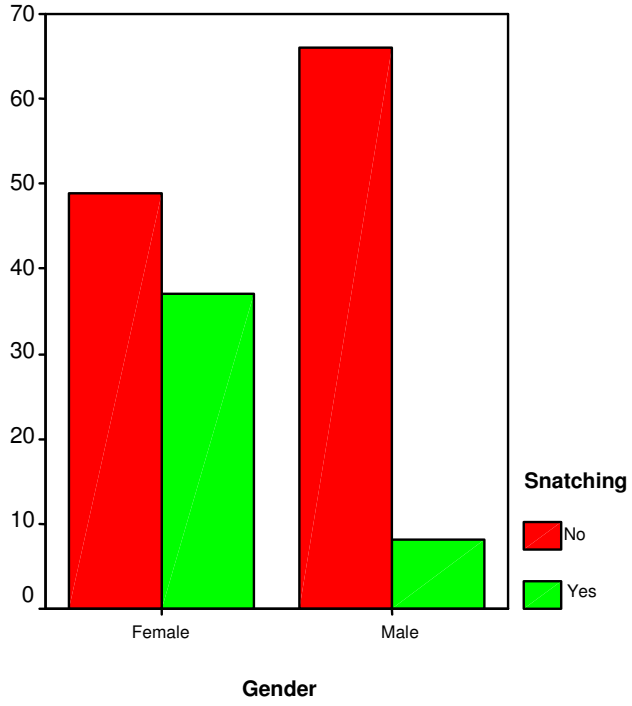


Figure 4.32. Cross-Tabulation of Snatching by Gender

Table 4.28. has shown that women also feel more anxious about being a victim of "snatching" in Konak Square than men. On the other hand, although most of the male users do not feel anxious about being a victim of snatching, there is a small group of male respondents who also feel insecure. In this case, it has been proved that there are specific relationships between gender and the fear of crime.

Table 4.30. Cross-Tabulation of Wounding by Gender

			Wounding		Total
			No	Yes	
Gender	Female	Count	76	10	86
		% within gender	88,4%	11,6%	100,0%
		% within wound.	53,1%	58,8%	53,8%
	Male	Count	67	7	74
		% within gender	90,5%	9,5%	100,0%
		% within wound.	46,9%	41,2%	46,3%
Total		Count	143	17	160
		% within gender	89,4%	10,6%	100,0%
		% within wound.	100,0%	100,0%	100,0%

Table 4.31. Chi-Square Tests of Wounding by Gender

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,197(b)	1	,657		
Continuity Correction(a)	,035	1	,852		
Likelihood Ratio	,198	1	,656		
Fisher's Exact Test				,798	,428
Linear-by-Linear Association	,196	1	,658		
N of Valid Cases	160				

Considering the gender and type of crime “wounding” cross-tabulation, the chi-square test has shown that there is no specific relationship between these two variables. For this example, because Asymp. Sig. ≥ 0,05; these two variables are independent of one another. In this case, the hypothesis H_o could be accepted.

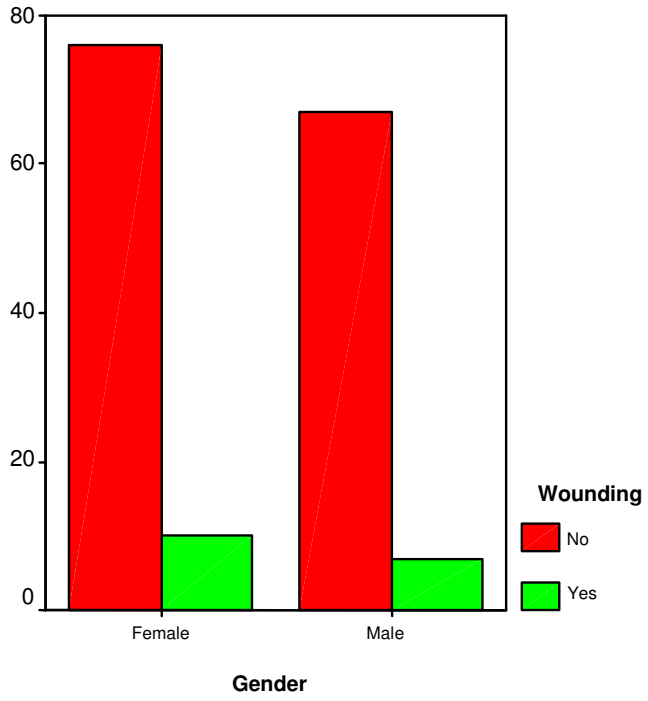


Figure 4.33. Cross-Tabulation of Wounding by Gender

At that point, considering the explanations of the respondents, it is possible to say that, there are some circumstances which affect the results. Most of the women who answered the safety questionnaire have explained that they do not prefer being in Konak Square because of fear of crime, particularly after dark. Because most of the "wounding" incidents occur dark and empty hours of the area, women avoid being there at these parts of the day. In this case, most of the female respondents do not feel insecure to this type of crime, as much as men.

Table 4.32. Cross-Tabulation of other types of crime by Gender

			Other		Total
			No	Yes	
Gender	Female	Count	80	6	86
		% within gender	93,0%	7,0%	100,0%
		% within other	51,9%	100,0%	53,8%
	Male	Count	74	0	74
		% within gender	100,0%	,0%	100,0%
		% within other	48,1%	,0%	46,3%
Total		Count	154	6	160
		% within gender	96,3%	3,8%	100,0%
		% within other	100,0%	100,0%	100,0%

Table 4.33. Chi-Square Tests of other types of crime by Gender

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5,364(b)	1	,021		
Continuity Correction(a)	3,605	1	,058		
Likelihood Ratio	7,651	1	,006		
Fisher's Exact Test				,031	,022
Linear-by-Linear Association	5,330	1	,021		
N of Valid Cases	160				

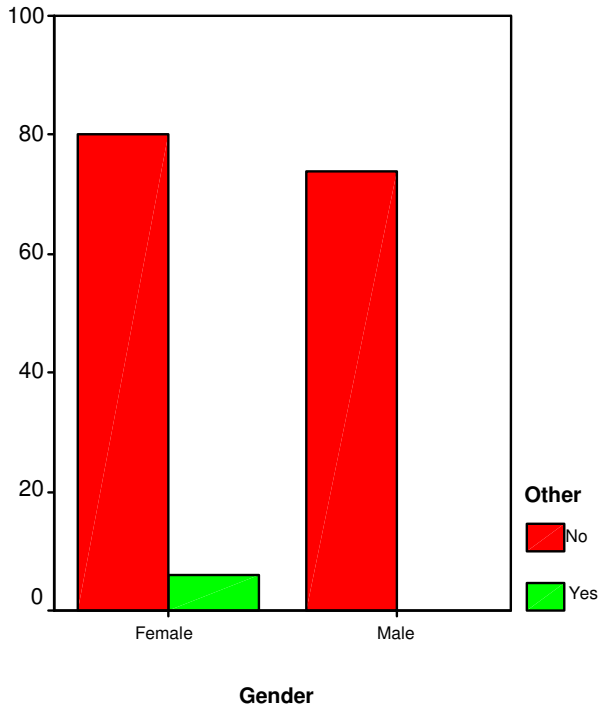


Figure 4.34. Cross-Tabulation of Other types of crime by Gender

Most of the users of Konak Square feel vulnerable to crime, such as; pickpocketing, snatching and wounding. On the other hand, there are other types of crime and anti-social behaviour. Particularly women feel anxious about being a victim of physical and verbal harassment, as well. Therefore, most of the women do not prefer using the area, especially at night and empty hours of the area.

In this case, because there is no negative response from male respondents, this table could not been explained statistically. However, considering the results, it is obvious that, female users do not use the area at dangerous hours, that is why, small part of women feel worry about such kinds of crime which usually occur at dark and empty areas.

4.3.3.4. Cross-Tabulation of Fear of Crime by Sub-Areas

Table 4.34. Cross-Tabulation of Fear of Crime by Sub-Areas

		Fear of Crime Sub-Areas													
		0	C.tower-municipality	Ent.of Kemeralti	Around Isbnk-Akbnk	Around shelters	Around public t.	Around quay	Around park.lot	Around subway	Second. paths	Exhibition area	Seating Area	Around YKM	Total
Fear of Crime	I feel safe	Count	57	0	0	0	0	0	0	0	0	0	0	0	0	57
		% within f.o.c	100,0%	,0%	,0%	,0%	,0%	,0%	,0%	,0%	,0%	,0%	,0%	,0%	,0%	100,0%
		% within sub.a.	100,0%	,0%	,0%	,0%	,0%	,0%	,0%	,0%	,0%	,0%	,0%	,0%	,0%	35,6%
	I don't feel safe	Count	0	3	5	10	6	9	18	10	7	14	1	9	11	103
		% within f.o.c	,0%	2,9%	4,9%	9,7%	5,8%	8,7%	17,5%	9,7%	6,8%	13,6%	1,0%	8,7%	10,7%	100,0%
		% within sub.a	,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	64,4%
Total		Count	57	3	5	10	6	9	18	10	7	14	1	9	11	160
		% within f.o.c	35,6%	1,9%	3,1%	6,3%	3,8%	5,6%	11,3%	6,3%	4,4%	8,8%	,6%	5,6%	6,9%	100,0%
		% within sub.a	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Table 4.35. Chi-Square Tests of Fear of Crime by Sub-Areas

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	160,000(a)	12	,000
Likelihood Ratio	208,394	12	,000
Linear-by-Linear Association	101,674	1	,000
N of Valid Cases	160		

Considering the "fear of crime and sub-areas" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

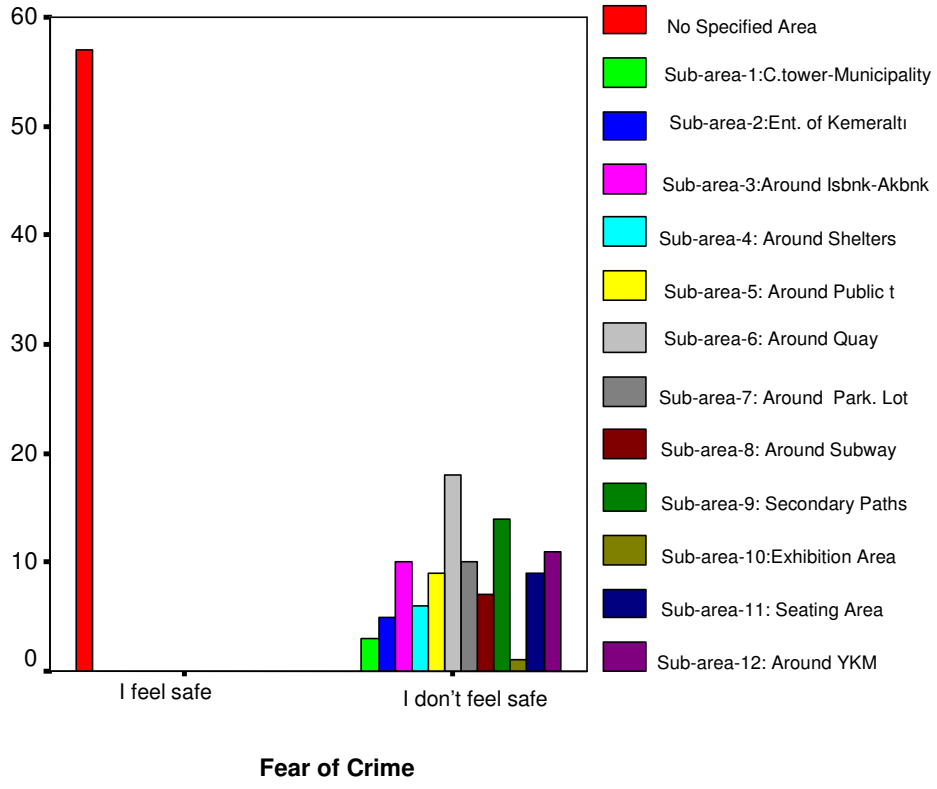


Figure 4.35. Cross-Tabulation of Fear of Crime by Sub-Areas

Although, users of the area who feel safe in Konak Square do not specified any sub-area, other users who feel insecure have specified their "fear of crime sub-areas". Considering the results, around quay is the most dangerous area where people feel

unsafe and vulnerable to crime. Following the quay, secondary paths in the area are defined as a second fear of crime area. On the other hand, around YKM building is defined as the third one. They also add that some of the sub-areas such as; parking lot, public toilets and seating areas also make people feel insecure because their design features creates some concealment and entrapment points that encourage potential offenders. People also feel anxious about being a victim of particular types of crime such as; pickpocketing and snatching around YKM building and İşbankası-Akbank where pedestrian circulation is always high. In addition to these negative circumstances, users of Konak Square have explained that their feelings of insecurity increase after dark because of poor lighting and improper security precautions.

4.3.3.5. Cross-Tabulation of Fear of Crime Sub-Areas by Gender

Table 4.36. Cross-Tabulation of Fear of Crime Sub-Areas by Gender

		Fear of Crime Sub-Areas													
		0	C.tower-municipality	Ent.of Kemeralti	Around Isbnk-Akbnk	Around shelters	Around public t.	Around quay	Around park lot	Around subway	Second. paths	Exhibition area	Seating Area	Around YKM	Total
Gender	Female	Count	19	1	4	4	2	8	9	9	6	12	0	6	6	86
		% within Gender	22,1%	1,2%	4,7%	4,7%	2,3%	9,3%	10,5%	10,5%	7,0%	14,0%	,0%	7,0%	7,0%	100,0%
		% within sub.a.	33,3%	33,3%	80,0%	40,0%	33,3%	88,9%	50,0%	90,0%	85,7%	85,7%	,0%	66,7%	54,5%	53,8%
	Male	Count	38	2	1	6	4	1	9	1	1	2	1	3	5	74
		% within gender	51,4%	2,7%	1,4%	8,1%	5,4%	1,4%	12,2%	1,4%	1,4%	2,7%	1,4%	4,1%	6,8%	100,0%
		% within sub.a.	66,7%	66,7%	20,0%	60,0%	66,7%	11,1%	50,0%	10,0%	14,3%	14,3%	100,0%	33,3%	45,5%	46,3%
Total		Count	57	3	5	10	6	9	18	10	7	14	1	9	11	160
		% within gender	35,6%	1,9%	3,1%	6,3%	3,8%	5,6%	11,3%	6,3%	4,4%	8,8%	,6%	5,6%	6,9%	100,0%
		% within sub.a.	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Table 4.37. Chi-Square Tests of Fear of Crime Sub-Areas by Gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33,471(a)	12	,001
Likelihood Ratio	36,848	12	,000
Linear-by-Linear Association	13,612	1	,000
N of Valid Cases	160		

Considering the "gender and fear of crime through sub-areas" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

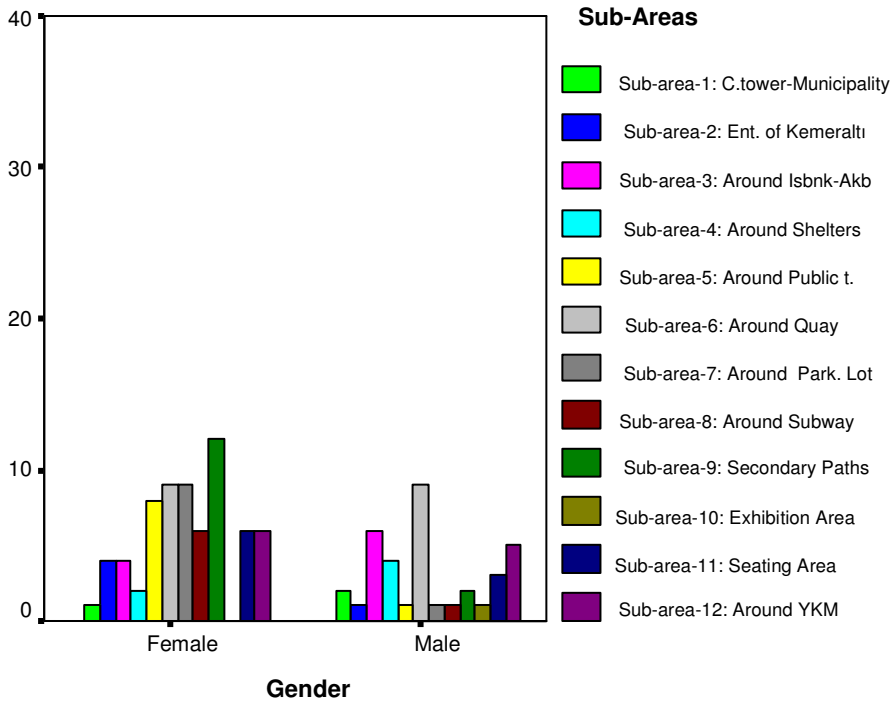


Figure 4.36. Cross-Tabulation of Fear of Crime Sub-Areas by Gender

Results have shown that fear of crime and feelings of insecurity in Konak Square vary depending on the gender of the users. For instance, considering the female users, secondary paths, around quay and parking lot are defined as the most dangerous

points in the area. On the other hand, male users have defined the most dangerous points as around quay, around İsbank-Akbank and around YKM, as well. The results also have shown that women's feelings of insecurity are higher than men and considering the results of the questionnaire, it is possible to say that, most of female users of Konak Square do not prefer being in the area, particularly after dark. In addition, although they explain that there are many dangerous points in this public area, they particularly avoid being in some areas where entrapment and concealment areas exist for potential offenders, such as; public toilet, entrance of Kemeraltı, etc.

4.3.3.6. Cross-Tabulation of Fear of Crime by Pass-time Alone in Konak Square

Table 4.38. Cross-Tabulation of Fear of Crime by Pass-time Alone in Konak Square

			Pass-time Alone		Total
			Yes	No	
Fear of Crime	I feel safe	Count	42	15	57
		% within fear of crime	73,7%	26,3%	100,0%
		% within passing time	100,0%	12,7%	35,6%
	I don't feel safe	Count	0	103	103
		% within fear of crime	,0%	100,0%	100,0%
		% within passing time	,0%	87,3%	64,4%
Total		Count	42	118	160
		% within fear of crime	26,3%	73,8%	100,0%
		% within passing time	100,0%	100,0%	100,0%

Table 4.39. Chi-Square Tests of Fear of Crime by Pass-time Alone in Konak Square

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	102,908(b)	1	,000		
Continuity Correction(a)	99,137	1	,000		
Likelihood Ratio	118,508	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	102,265	1	,000		
N of Valid Cases	160				

Considering the “fear of crime and pass-time alone” cross-tabulation, the chi-square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

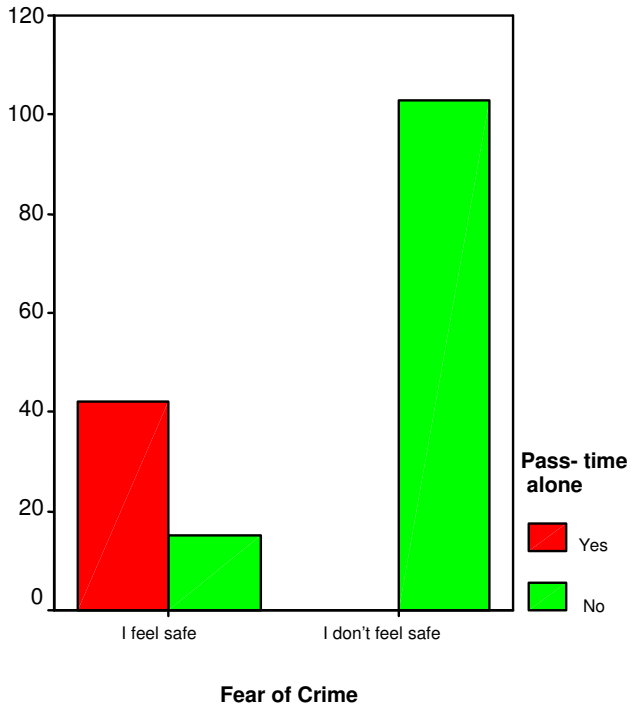


Figure 4.37. Cross-Tabulation of Fear of Crime by Pass-time Alone in Konak Square

The case of Konak Square has shown that people usually hesitate to use places where they feel insecure. They do not prefer being in these kinds of places if they do not have to. As a result, none of the users who do not feel safe in Konak Square prefer spending time alone in the area. In addition, respondents explain that fear of crime is not the only reason for this result. They also add that, they do not prefer spending time in Konak Square because of lack of activities and insufficient furnishing features of the area, such as; lack of shelters that protect people from the effects of weather, etc.

4.3.3.7. Cross-Tabulation of Fear of Crime by Existing Security Precautions

Table 4.40. Cross-Tabulation of Fear of Crime by Existing Security Precautions

			Existing Security Precautions			Total
			Successful	Unsuccessful	Undecided	
Fear of Crime	I feel safe	Count	46	10	1	57
		% within fear of crime	80,7%	17,5%	1,8%	100,0%
		% within security pr.	100,0%	9,2%	20,0%	35,6%
	I don't feel safe	Count	0	99	4	103
		% within fear of crime	,0%	96,1%	3,9%	100,0%
		% within security pr.	,0%	90,8%	80,0%	64,4%
Total		Count	46	109	5	160
		% within fear of crime	28,8%	68,1%	3,1%	100,0%
		% within security pr.	100,0%	100,0%	100,0%	100,0%

Table 4.41. Chi-Square Tests of Fear of Crime by Existing Security Precautions

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	116,908(a)	2	,000
Likelihood Ratio	136,561	2	,000
Linear-by-Linear Association	98,852	1	,000
N of Valid Cases	160		

Considering the "fear of crime and security precautions" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

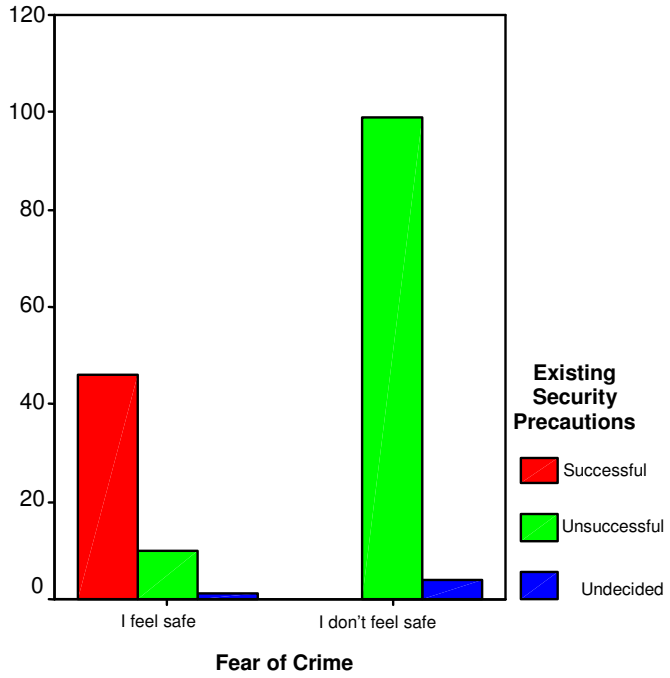


Figure 4.38. Cross-Tabulation of Fear of Crime by Existing Security Precautions

Table 4.40 has shown that most of the users who do not feel safe in Konak Square also think that security precautions of the area are unsuccessful. Users have explained that security precautions need to be improved in order to make Konak Square safer where people do not hesitate to spend their time not only daytime, but also at night.

4.3.3.8. Cross-Tabulation of Fear of Crime by Additional Security Precautions

Table 4.42.Cross-Tabulation of Fear of Crime by Better Design Features

			Better Design Features		Total
			No	Yes	
Fear of Crime	I feel safe	Count	46	11	57
		% within fear of crime	80,7%	19,3%	100,0%
		% within add.security p.	63,0%	12,6%	35,6%
	I don't feel safe	Count	27	76	103
		% within fear of crime	26,2%	73,8%	100,0%
		% within add.security p.	37,0%	87,4%	64,4%
Total		Count	73	87	160
		% within fear of crime	45,6%	54,4%	100,0%
		% within add.security p.	100,0%	100,0%	100,0%

Table 4.43. Chi-Square Tests of Fear of Crime by Better Design Features

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	43,913(b)	1	,000		
Continuity Correction(a)	41,744	1	,000		
Likelihood Ratio	46,154	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	43,639	1	,000		
N of Valid Cases	160				

Considering the "fear of crime and security precautions" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

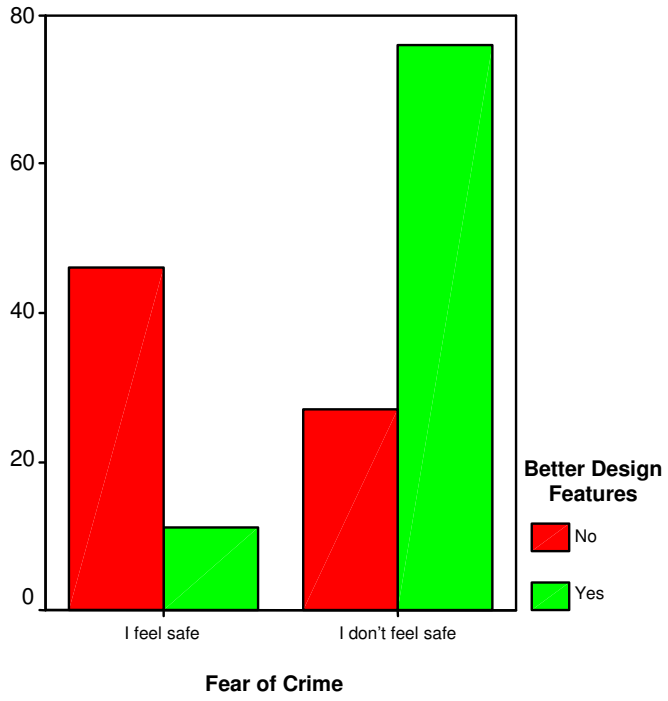


Figure 4.39. Cross-Tabulation of Fear of Crime by Better Design Features

The results of the questionnaire have shown that majority of the respondents who do not feel safe in the area believe that having better design features make the Konak Square safer than before. In addition, some of the respondents who feel safe in the area also believe that better design features will help to increase safety.

Table 4.44. Cross-Tabulation of Fear of Crime by More Police

			More Police		Total
			No	Yes	
Fear of Crime	I feel safe	Count	54	3	57
		% within fear of crime	94,7%	5,3%	100,0%
		% within add.security p.	55,1%	4,8%	35,6%
	I don't feel safe	Count	44	59	103
		% within fear of crime	42,7%	57,3%	100,0%
		% within add.security p.	44,9%	95,2%	64,4%
Total		Count	98	62	160
		% within fear of crime	61,3%	38,8%	100,0%
		% within add.security p.	100,0%	100,0%	100,0%

Table 4.45. Chi-Square Tests of Fear of Crime by More Police

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	41,834(b)	1	,000		
Continuity Correction(a)	39,671	1	,000		
Likelihood Ratio	49,535	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	41,572	1	,000		
N of Valid Cases	160				

Considering the "fear of crime and security precautions" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

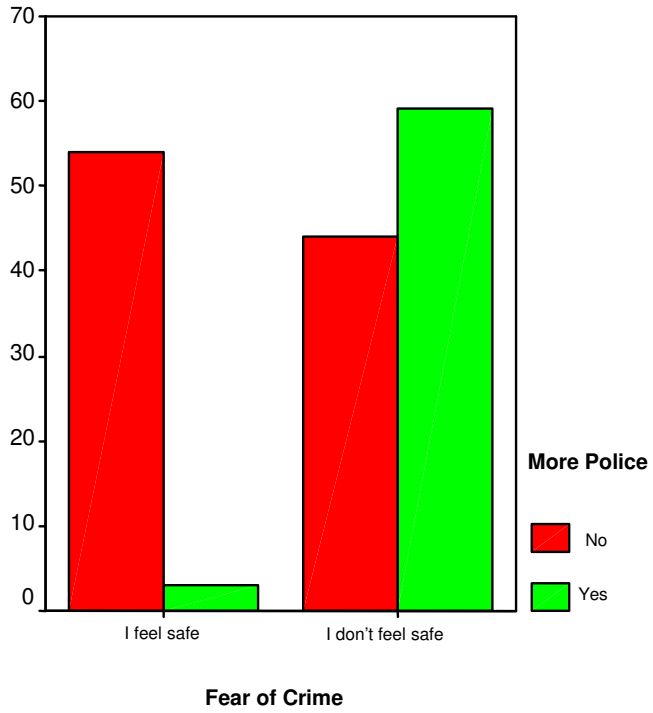


Figure 4.40. Cross-Tabulation of Fear of Crime by More Police

According to the questionnaire, majority of the respondents who feel insecure in the area explain that the number of the police in and around the area should be increased to make Konak Square safer. Respondents have explained that more police force will

help to decrease the users' fear of crime, as well as discouraging the potential offenders to commit crime.

Table 4.46. Cross-Tabulation of Fear of Crime by Private Security

			Private Security		Total
			No	Yes	
Fear of Crime	I feel safe	Count	57	0	57
		% within fear of crime	100,0%	,0%	100,0%
		% within add.security p.	48,7%	,0%	35,6%
	I don't feel safe	Count	60	43	103
		% within fear of crime	58,3%	41,7%	100,0%
		% within add.security p.	51,3%	100,0%	64,4%
Total		Count	117	43	160
		% within fear of crime	73,1%	26,9%	100,0%
		% within add.security p.	100,0%	100,0%	100,0%

Table 4.47. Chi-Square Tests of Fear of Crime by Private Security

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	32,542(b)	1	,000		
Continuity Correction(a)	30,452	1	,000		
Likelihood Ratio	46,274	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	32,338	1	,000		
N of Valid Cases	160				

Considering the "fear of crime and security precautions" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

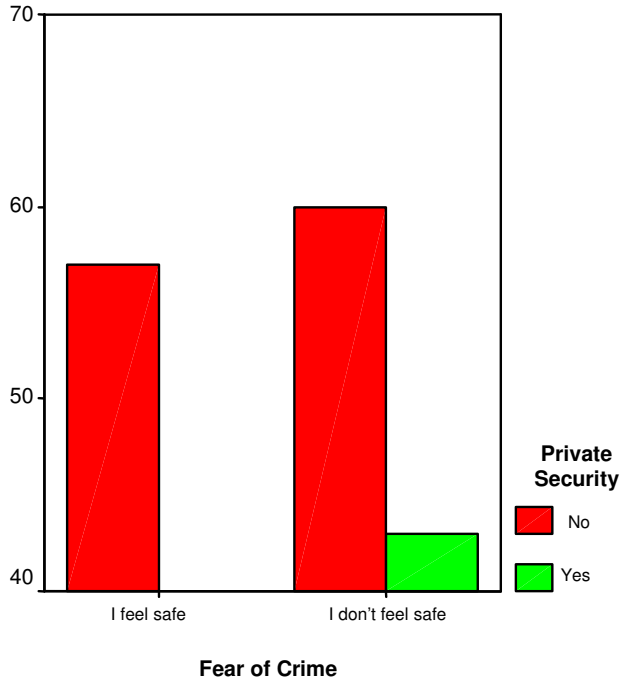


Figure 4.41. Cross-Tabulation of Fear of Crime by Private Security

The results have shown that minority of the respondents who do not feel safe in the area believe that increasing the number of the private security will make the Konak Square safer than before.

Table 4.48. Cross-Tabulation of Fear of Crime by Other Security Precautions

			Other		Total
			No	Yes	
Fear of Crime	I feel safe	Count	54	3	57
		% within fear of crime	94,7%	5,3%	100,0%
		% within add.security p.	43,9%	8,1%	35,6%
	I don't feel safe	Count	69	34	103
		% within fear of crime	67,0%	33,0%	100,0%
		% within add.security p.	56,1%	91,9%	64,4%
Total		Count	123	37	160
		% within fear of crime	76,9%	23,1%	100,0%
		% within add.security p.	100,0%	100,0%	100,0%

Table 4.49. Chi-Square Tests of Fear of Crime by Other Security Precautions

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	15,891(b)	1	,000		
Continuity Correction(a)	14,368	1	,000		
Likelihood Ratio	18,889	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	15,791	1	,000		
N of Valid Cases	160				

Considering the "fear of crime and security precautions" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

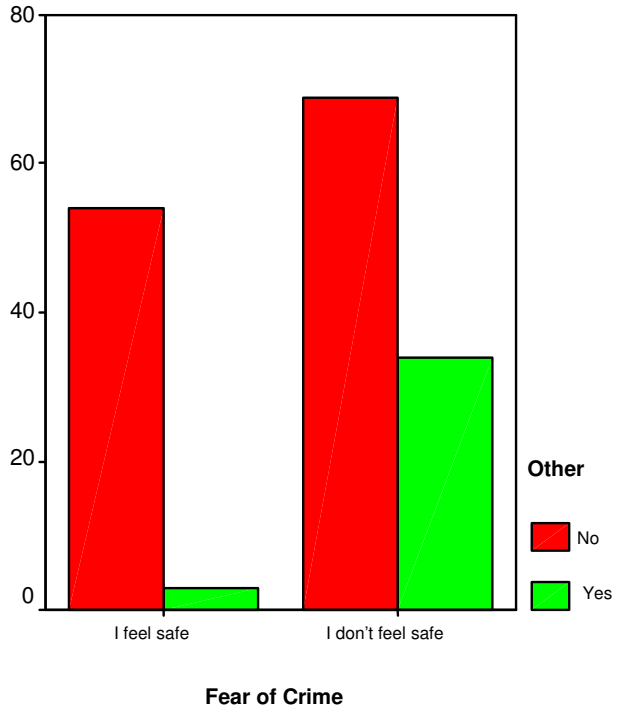


Figure 4.42. Cross-Tabulation of Fear of Crime by Other Security Precautions

In addition to better design features, increasing the number of police and private security, some of the respondents also have added that other types of additional security precautions including, CCTV, emergency phone, etc. can help to increase the safety of

the area. It is obvious that, these kinds of precautions discourage potential offenders to commit crime. It must be considered that, crime and anti-social behaviour are not likely to occur, if the security precautions of public areas are high.

4.3.3.9. Cross-Tabulation of Fear of Crime by Impression of Lighting

Table 4.50. Cross-Tabulation of Fear of Crime by Impression of Lighting

			Impression of Lighting					Total
			Very poor	Poor	Satisfactory	Good	Very good	
Fear of Crime	I feel safe	Count	0	2	34	15	6	57
		% within fear of crm.	,0%	3,5%	59,6%	26,3%	10,5%	100,0%
		% within lighting	,0%	2,9%	100,0%	100,0%	100,0%	35,6%
	I don't feel safe	Count	35	68	0	0	0	103
		% within fear of crm.	34,0%	66,0%	,0%	,0%	,0%	100,0%
		% within lighting	100,0%	97,1%	,0%	,0%	,0%	64,4%
Total		Count	35	70	34	15	6	160
		% within fear of crm.	21,9%	43,8%	21,3%	9,4%	3,8%	100,0%
		% within lighting	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Table 4.51. Chi-Square Tests of the Fear of Crime by Impression of Lighting

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	151,528(a)	4	,000
Likelihood Ratio	190,230	4	,000
Linear-by-Linear Association	109,060	1	,000
N of Valid Cases	160		

Considering the "fear of crime and lighting" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

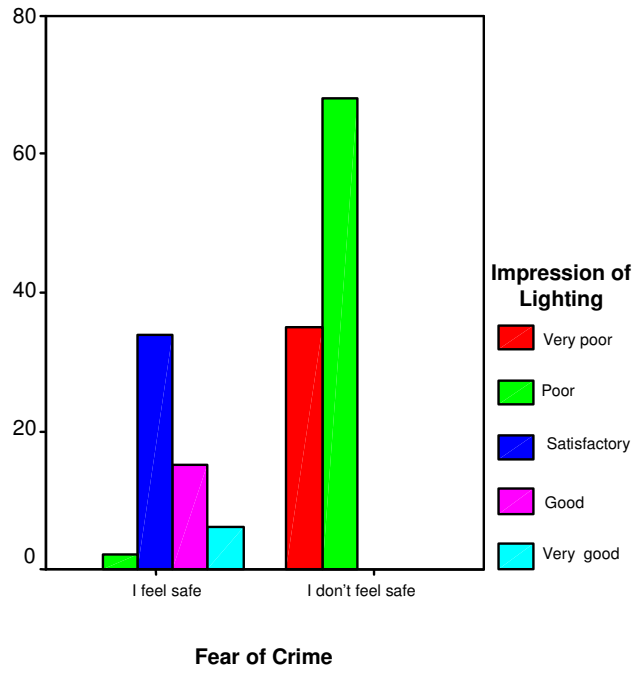


Figure 4.43. Cross-Tabulation of Fear of Crime by Impression of Lighting

The results of the safety questionnaire have shown that there is close relationship between fear of crime and the lighting features of the area. Users who do not feel safe mostly explained that they avoid being in Konak Square after dark and empty hours of the area, because of poor lighting. It is obvious that, sufficient lighting makes public places safer, as well as attractive.

4.3.3.10. Cross-Tabulation of Types of Crime by Impression of Lighting

4.3.3.10.1. Cross-Tabulation of Pickpocketing by Impression of Lighting

Table 4.52. Cross-Tabulation of Impression of Lighting by Pickpocketing

			Pickpocketing		Total
			No	Yes	
Impression of Lighting	Very poor	Count	6	29	35
		% within lighting	17,1%	82,9%	100,0%
		% within pickpocketing	8,1%	33,7%	21,9%
		% of Total	3,8%	18,1%	21,9%
	Poor	Count	13	57	70
		% within lighting	18,6%	81,4%	100,0%
		% within pickpocketing	17,6%	66,3%	43,8%
		% of Total	8,1%	35,6%	43,8%
	Satisfactory	Count	34	0	34
		% within lighting	100,0%	,0%	100,0%
		% within pickpocketing	45,9%	,0%	21,3%
		% of Total	21,3%	,0%	21,3%
	Good	Count	15	0	15
		% within lighting	100,0%	,0%	100,0%
		% within pickpocketing	20,3%	,0%	9,4%
		% of Total	9,4%	,0%	9,4%
	Very good	Count	6	0	6
		% within lighting	100,0%	,0%	100,0%
		% within pickpocketing	8,1%	,0%	3,8%
		% of Total	3,8%	,0%	3,8%
Total		Count	74	86	160
		% within lighting	46,3%	53,8%	100,0%
		% within pickpocketing	100,0%	100,0%	100,0%
		% of Total	46,3%	53,8%	100,0%

Table 4.53. Chi-Square Tests of Impression of Lighting by Pickpocketing

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	97,419(a)	4	,000
Likelihood Ratio	121,643	4	,000
Linear-by-Linear Association	69,567	1	,000
N of Valid Cases	160		

Considering the “types of crime – pickpocketing - by impression of lighting” cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

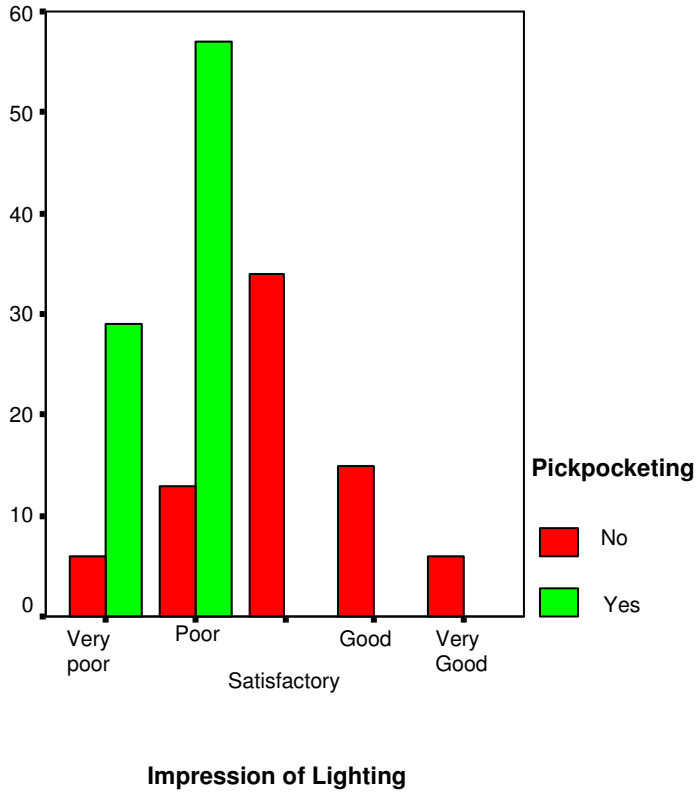


Figure 4.44. Cross-Tabulation of Impression of Lighting by Pickpocketing

4.3.3.10.2. Cross-Tabulation of Snatching by Impression of Lighting

Table 4.54. Cross-Tabulation of Impression of Lighting by Snatching

			Snatching		Total
			No	Yes	
Impression of Lighting	Very poor	Count	19	16	35
		% within lighting	54,3%	45,7%	100,0%
		% within snatching	16,5%	35,6%	21,9%
		% of Total	11,9%	10,0%	21,9%
	Poor	Count	41	29	70
		% within lighting	58,6%	41,4%	100,0%
		% within snatching	35,7%	64,4%	43,8%
		% of Total	25,6%	18,1%	43,8%
	Satisfactory	Count	34	0	34
		% within lighting	100,0%	,0%	100,0%
		% within snatching	29,6%	,0%	21,3%
		% of Total	21,3%	,0%	21,3%
	Good	Count	15	0	15
		% within lighting	100,0%	,0%	100,0%
		% within snatching	13,0%	,0%	9,4%
		% of Total	9,4%	,0%	9,4%
	Very good	Count	6	0	6
		% within lighting	100,0%	,0%	100,0%
		% within snatching	5,2%	,0%	3,8%
		% of Total	3,8%	,0%	3,8%
Total		Count	115	45	160
		% within lighting	71,9%	28,1%	100,0%
		% within snatching	100,0%	100,0%	100,0%
		% of Total	71,9%	28,1%	100,0%

Table 4.55. Chi-Square Tests of Impression of Lighting by Snatching

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33,007(a)	4	,000
Likelihood Ratio	46,885	4	,000
Linear-by-Linear Association	24,805	1	,000
N of Valid Cases	160		

Considering the “types of crime – snatching - by impression of lighting” cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two

variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

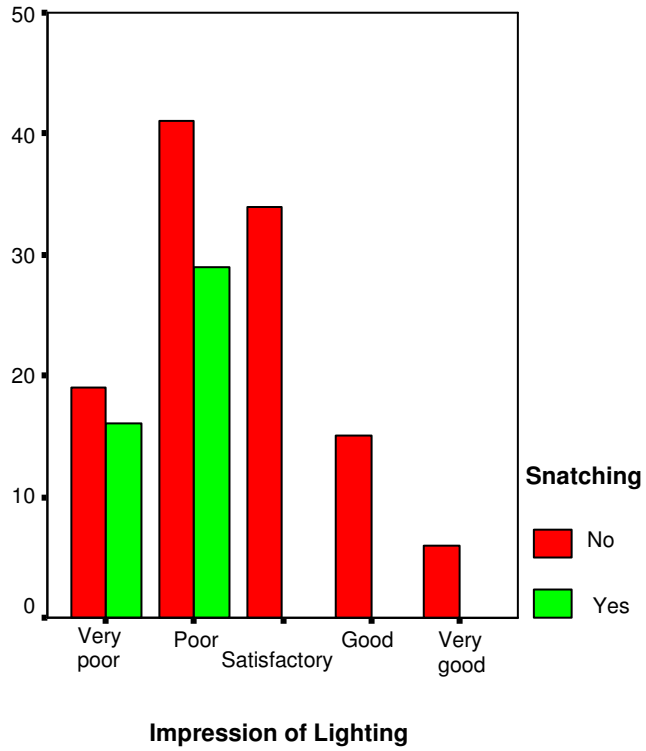


Figure 4.45. Cross-Tabulation of Impression of Lighting by Snatching

4.3.3.10.3. Cross-Tabulation of Wounding by Impression of Lighting

Table 4.56. Cross-Tabulation of Impression of Lighting by Wounding

			Wounding		Total
			No	Yes	
Impression of Lighting	Very poor	Count	27	8	35
		% within lighting	77,1%	22,9%	100,0%
		% within wounding	18,9%	47,1%	21,9%
		% of Total	16,9%	5,0%	21,9%
	Poor	Count	61	9	70
		% within lighting	87,1%	12,9%	100,0%
		% within wounding	42,7%	52,9%	43,8%
		% of Total	38,1%	5,6%	43,8%
	Satisfactory	Count	34	0	34
		% within lighting	100,0%	,0%	100,0%
		% within wounding	23,8%	,0%	21,3%
		% of Total	21,3%	,0%	21,3%
	Good	Count	15	0	15
		% within lighting	100,0%	,0%	100,0%
		% within wounding	10,5%	,0%	9,4%
		% of Total	9,4%	,0%	9,4%
	Very good	Count	6	0	6
		% within lighting	100,0%	,0%	100,0%
		% within wounding	4,2%	,0%	3,8%
		% of Total	3,8%	,0%	3,8%
Total		Count	143	17	160
		% within lighting	89,4%	10,6%	100,0%
		% within wounding	100,0%	100,0%	100,0%
		% of Total	89,4%	10,6%	100,0%

Table 4.57. Chi-Square Tests of Impression of Lighting by Wounding

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,421(a)	4	,014
Likelihood Ratio	17,012	4	,002
Linear-by-Linear Association	10,443	1	,001
N of Valid Cases	160		

Considering the “types of crime – wounding - by impression of lighting” cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that these two

variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

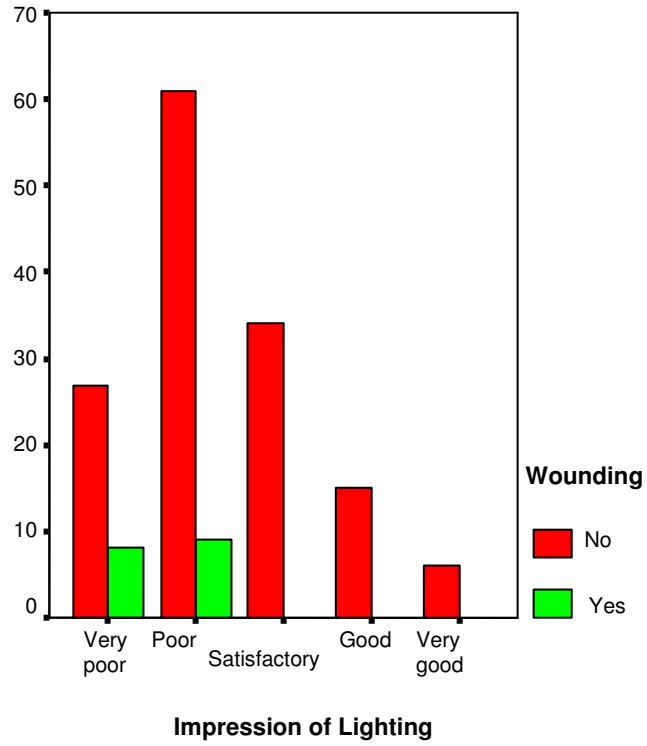


Figure 4.46. Cross-Tabulation of Impression of Lighting by Wounding

4.3.3.10.4. Cross-Tabulation of Other types of crime by Impression of Lighting

Table 4.58 . Cross-Tabulation of Impression of Lighting by Other types of Crime

			Other		Total
			No	Yes	
Impression of Lighting	Very poor	Count	30	5	35
		% within imp.of light.	85,7%	14,3%	100,0%
		% within other	19,5%	83,3%	21,9%
		% of Total	18,8%	3,1%	21,9%
	Poor	Count	69	1	70
		% within imp.of light.	98,6%	1,4%	100,0%
		% within other	44,8%	16,7%	43,8%
		% of Total	43,1%	,6%	43,8%
	Satisfactory	Count	34	0	34
		% within imp.of light.	100,0%	,0%	100,0%
		% within other	22,1%	,0%	21,3%
		% of Total	21,3%	,0%	21,3%
	Good	Count	15	0	15
		% within imp.of light.	100,0%	,0%	100,0%
		% within other	9,7%	,0%	9,4%
		% of Total	9,4%	,0%	9,4%
	Very good	Count	6	0	6
		% within imp.of light.	100,0%	,0%	100,0%
		% within other	3,9%	,0%	3,8%
		% of Total	3,8%	,0%	3,8%
Total		Count	154	6	160
		% within imp.of light.	96,3%	3,8%	100,0%
		% within other	100,0%	100,0%	100,0%
		% of Total	96,3%	3,8%	100,0%

Table 4.59. Chi-Square Tests of Impression of Lighting by Other types of Crime

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13,952(a)	4	,007
Likelihood Ratio	11,982	4	,017
Linear-by-Linear Association	7,442	1	,006
N of Valid Cases	160		

Considering the “other types of crime by impression of lighting” cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two

variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

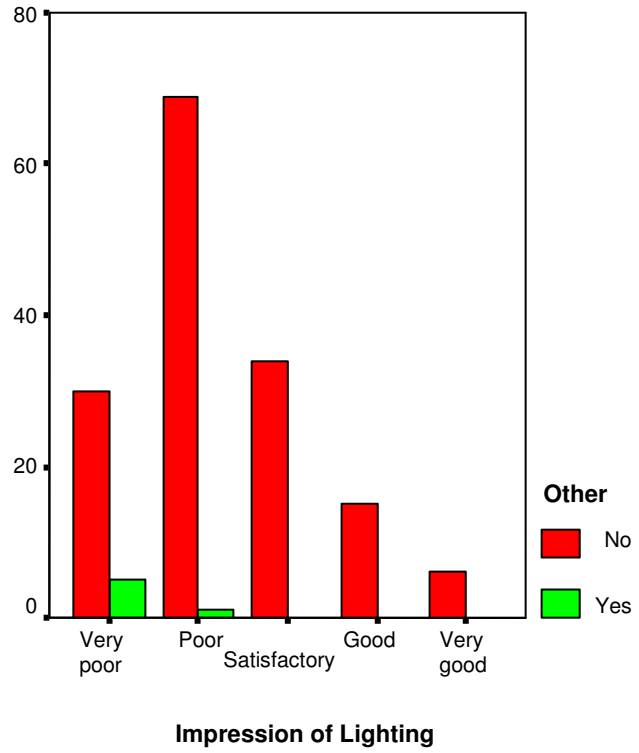


Figure 4.47. Cross-Tabulation of Impression of Lighting by Other types of Crime

The results have proved that there are close relationships between the impression of lighting of the public areas and any types of crime or anti-social behaviour. In this case, it is crucial that sufficient lighting of public areas increase their safety and reduce the users' fear of crime. On the other hand, female respondents have explained that they avoid being in Konak Square after dark, because of their feelings of insecurity. They prefer using the area at daytime instead of night time in order to prevent themselves from being a victim of particular types of crime which are mostly occur at night such as; wounding, physical or verbal harassment, etc. Therefore, the numbers of female users who feel anxious about being a victim of wounding are remarkably low.

4.3.3.11. Cross-Tabulation of Fear of Crime by Being A Witness

Table 4.60 . Cross-Tabulation of Fear of Crime by Being a Witness

			Witness		Total
			Yes	No	
Fear of Crime	I feel safe	Count	0	57	57
		% within fear of crime	,0%	100,0%	100,0%
		% within being witness	,0%	51,8%	35,6%
	I don't feel safe	Count	50	53	103
		% within fear of crime	48,5%	51,5%	100,0%
		% within being witness	100,0%	48,2%	64,4%
Total		Count	50	110	160
		% within fear of crime	31,3%	68,8%	100,0%
		% within being witness	100,0%	100,0%	100,0%

Table 4.61. Chi-Square Tests of Fear of Crime by Being a Witness

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	40,247(b)	1	,000		
Continuity Correction(a)	38,019	1	,000		
Likelihood Ratio	56,047	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	39,996	1	,000		
N of Valid Cases	160				

Considering the "fear of crime and being a witness" cross-tabulation, the chi-square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

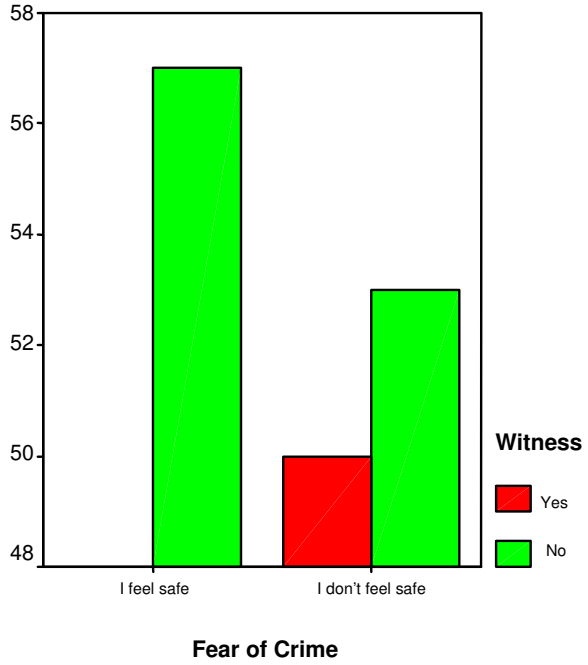


Figure 4.48. Cross-Tabulation of Fear of Crime by Being a Witness

The table has shown that, people's past experiences about crime or anti-social behaviour directly affect their feelings of insecurity or worrying about being a victim of any kind of crime incidents.

4.3.3.12. Cross-Tabulation of Fear of Crime by Redesign of the Area

Table 4.62 . Cross-Tabulation of Fear of Crime by Safer Redesign

			Safer Redesign		Total
			Yes	No	
Fear of Crime	I feel safe	Count	55	2	57
		% within fear of crime	96,5%	3,5%	100,0%
		% within redesign	50,5%	3,9%	35,6%
		% of Total	34,4%	1,3%	35,6%
	I don't feel safe	Count	54	49	103
		% within fear of crime	52,4%	47,6%	100,0%
		% within redesign	49,5%	96,1%	64,4%
		% of Total	33,8%	30,6%	64,4%
Total		Count	109	51	160
		% within fear of crime	68,1%	31,9%	100,0%
		% within redesign	100,0%	100,0%	100,0%
		% of Total	68,1%	31,9%	100,0%

Table 4.63. Chi-Square Tests of Fear of Crime by Safer Redesign

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	32,810(b)	1	,000		
Continuity Correction(a)	30,812	1	,000		
Likelihood Ratio	40,421	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	32,605	1	,000		
N of Valid Cases	160				

Considering the "fear of crime and redesign of the area" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

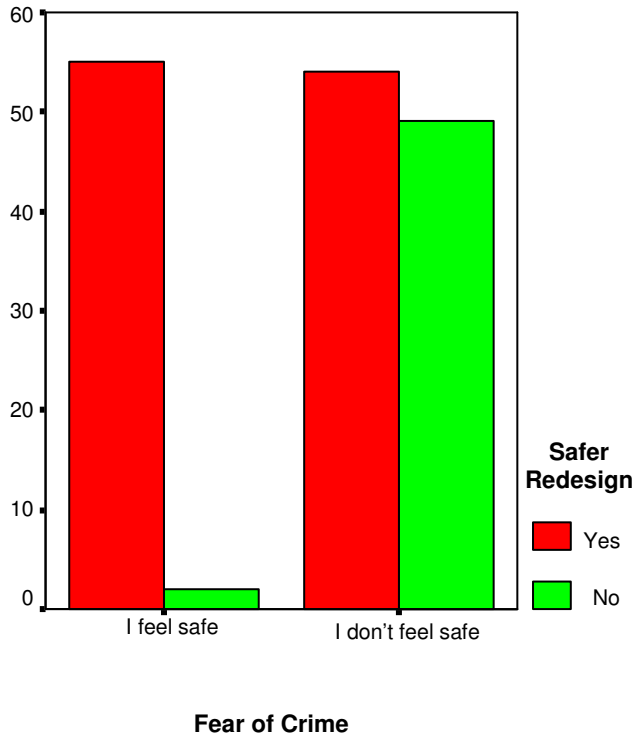


Figure 4.49. Cross-Tabulation of Fear of Crime by Safer Redesign

The results of questionnaire have shown that although most of the respondents think that redesign of Konak Square has made the area safer than before, there are still dangerous points in Konak Square.

4.3.3.13. Cross-Tabulation of Fear of Crime by Types of Crime

4.3.3.13.1. Cross-Tabulation of Fear of Crime by Pickpocketing

Table 4.64 . Cross-Tabulation of Fear of Crime by Pickpocketing

			Pickpocketing		Total
			No	Yes	
Fear of Crime	I feel safe	Count	57	0	57
		% within fear of crime	100,0%	,0%	100,0%
		% within pickpocketing	77,0%	,0%	35,6%
		% of Total	35,6%	,0%	35,6%
	I don't feel safe	Count	17	86	103
		% within fear of crime	16,5%	83,5%	100,0%
		% within pickpocketing	23,0%	100,0%	64,4%
		% of Total	10,6%	53,8%	64,4%
Total		Count	74	86	160
		% within fear of crime	46,3%	53,8%	100,0%
		% within pickpocketing	100,0%	100,0%	100,0%
		% of Total	46,3%	53,8%	100,0%

Table 4.65. Chi-Square Tests of Fear of Crime by Pickpocketing

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	102,902(b)	1	,000		
Continuity Correction(a)	99,571	1	,000		
Likelihood Ratio	128,629	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	102,259	1	,000		
N of Valid Cases	160				

Considering the "fear of crime by types of crime-pickpocketing" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

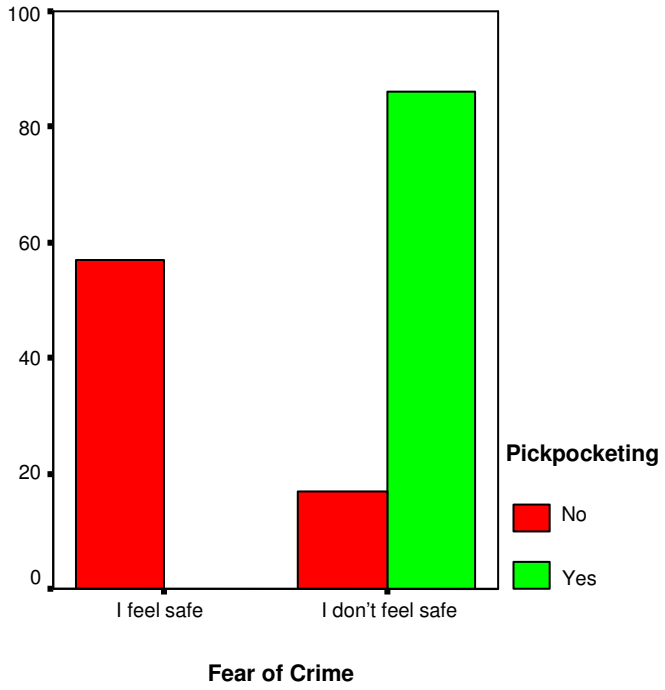


Figure 4.50. Cross-Tabulation of Fear of Crime by Pickpocketing

4.3.3.13.2. Cross-Tabulation of Fear of Crime by Snatching

Table 4.66 . Cross-Tabulation of Fear of Crime by Snatching

			Snatching		Total
			No	Yes	
Fear of Crime	I feel safe	Count	57	0	57
		% within fear of crime	100,0%	,0%	100,0%
		% within snatching	49,6%	,0%	35,6%
		% of Total	35,6%	,0%	35,6%
	I don't feel safe	Count	58	45	103
		% within fear of crime	56,3%	43,7%	100,0%
		% within snatching	50,4%	100,0%	64,4%
		% of Total	36,3%	28,1%	64,4%
Total		Count	115	45	160
		% within fear of crime	71,9%	28,1%	100,0%
		% within snatching	100,0%	100,0%	100,0%
		% of Total	71,9%	28,1%	100,0%

Table 4.67. Chi-Square Tests of Fear of Crime by Snatching

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	34,648(b)	1	,000		
Continuity Correction(a)	32,520	1	,000		
Likelihood Ratio	48,978	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	34,431	1	,000		
N of Valid Cases	160				

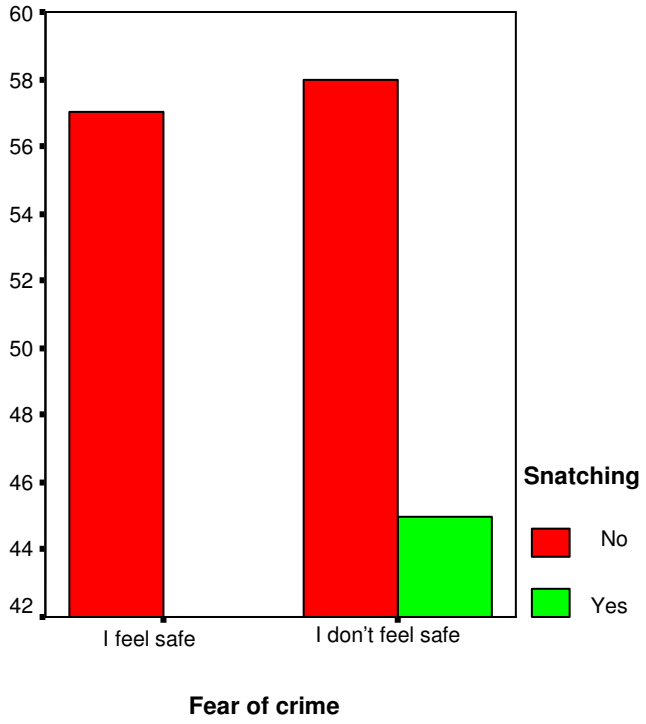


Figure 4.51. Cross-Tabulation of Fear of Crime by Snatching

Considering the "fear of crime by types of crime-snatching" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

4.3.3.13.3. Cross-Tabulation of Fear of Crime by Wounding

Table 4.68 . Cross-Tabulation of Fear of Crime by Wounding

			Wounding		Total
			No	Yes	
Fear of Crime	I feel safe	Count	57	0	57
		% within fear of crime	100,0%	,0%	100,0%
		% within wounding	39,9%	,0%	35,6%
		% of Total	35,6%	,0%	35,6%
	I don't feel safe	Count	86	17	103
		% within fear of crime	83,5%	16,5%	100,0%
		% within wounding	60,1%	100,0%	64,4%
		% of Total	53,8%	10,6%	64,4%
Total		Count	143	17	160
		% within fear of crime	89,4%	10,6%	100,0%
		% within wounding	100,0%	100,0%	100,0%
		% of Total	89,4%	10,6%	100,0%

Table 4.69. Chi-Square Tests of Fear of Crime by Wounding

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	10,526(b)	1	,001		
Continuity Correction(a)	8,860	1	,003		
Likelihood Ratio	16,076	1	,000		
Fisher's Exact Test				,001	,000
Linear-by-Linear Association	10,460	1	,001		
N of Valid Cases	160				

Considering the "fear of crime by types of crime-wounding" cross-tabulation, the chi- square test has shown that there is specific relationship between these two variables. For this example, Asymp. Sig. < 0,05; which means that the two variables are associated; they are not independent of one another. Finally, the hypothesis H_o could be rejected.

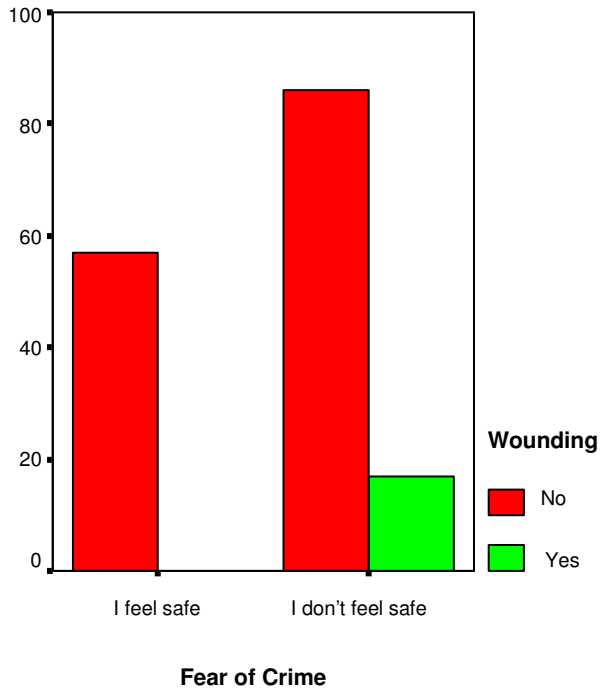


Figure 4.52. Cross-Tabulation of Fear of Crime by Wounding

4.3.4. Observation Results/Findings

Many crime-based researches suggest that fear of crime often affects people more than the actual risk to their safety. It is obvious that, perceptions of crime and safety influence how people choose to interact with spaces, places and other people. When people perceive that an environment is unsafe their behaviour is likely to modify in a way that reflects these perceptions. For instance, they might use the environment at specific times of the day/night, not using the environment at all. For some specific groups whose fear of crime is higher than others are more vulnerable to crime than others like women or elder people and this situation also reflects to their behaviours. Importantly, such modifications in behaviour occur even when perceived fears are not supported by actual crime statistics.

For crime to occur, certain conditions must be present including a target, a motive, and a potential offender. In this case, potential offenders take advantage of environments where the opportunity for crime to occur is present. These are environments where it is difficult to observe crime being committed, where an obvious target is present and where there are potential escape routes for offenders.

The links between design and safety from crime in urban areas have been recognised for many years. Crime Prevention through Environmental Design (CPTED) seeks to reduce the opportunity for crime to occur through the effective planning, design and place management of both the built and landscaped environment. In order to find out the general usage characteristics of the area and to analyse how users behave in this area, Konak Square has been observed through the study. During this process, the observation has been realized considering these features; lighting, concealment and entrapment spots, surveillance and visibility in the area. In addition, land use of Konak Square, activity generators and also sense of ownership in the area have been considered, as well.

In this case, it has been paid careful attention to observe the whole area through different hours of the day. The observations have shown that characteristics and intensity of the users vary through the weekdays and weekend, as well as different hours of the day. For instance; most of the people use this area because they work here or they come to the area in order to reach somewhere else by using public transportation such as; ferry, subway or bus. In addition, Konak Square includes many official buildings that increase the population of the area.

On the other hand, people mostly use Konak Square for shopping and to use public transportation, at weekends. They do not prefer spending their time in there because of lack of activities that keep people in the area and make it lively. At the same time, it is obvious that, most of the users of Konak Square are not satisfied with the design characteristics of the area.

Because Konak Square is a wide open space, users usually complain about lack of sheltered areas that protect themselves from the weather conditions. The observations also have shown that except the seating elements which are on the main pedestrian way and around clock tower, people hesitate to use the seating area and secondary paths in many reasons. Because the designed seating area is not close to the main pedestrian circulation people usually ignore the area. In addition, being a poorly designed and poorly-lit area also has an effect on the useless of this specified area.

Users of Konak Square also think that the security precautions are not enough to make the area safe. Importantly, they usually hesitate to use particular parts of the area where their feelings of insecurity are high. In addition, there are some concealment and entrapment points which come out from the design characteristics of the area and increase people's fear of crime. In addition, the observations have proved that people do not prefer using the area, particularly after dark, because of insufficient lighting features. Through the

observation process, the area is analyzed by considering these features and the twelve sub-areas have been examined below, in the light of these features, as well as their design characteristics.

4.3.4.1. Sub-area-1: Around Clock Tower – Municipality Building

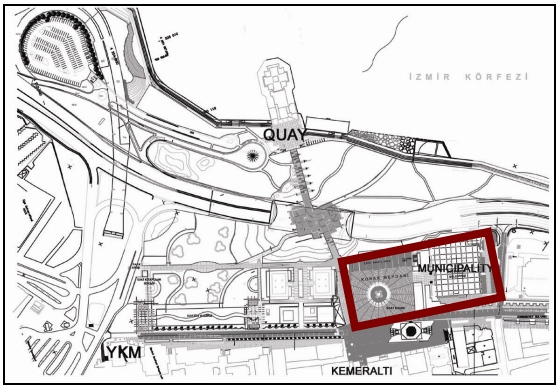


Figure 4.53. The Project of Konak Square

Clock Tower is the historical symbol of İzmir. Although, Konak Square has been gone through several physical changes in time, Clock Tower has continued to exist as one of the most famous landmark of the city.

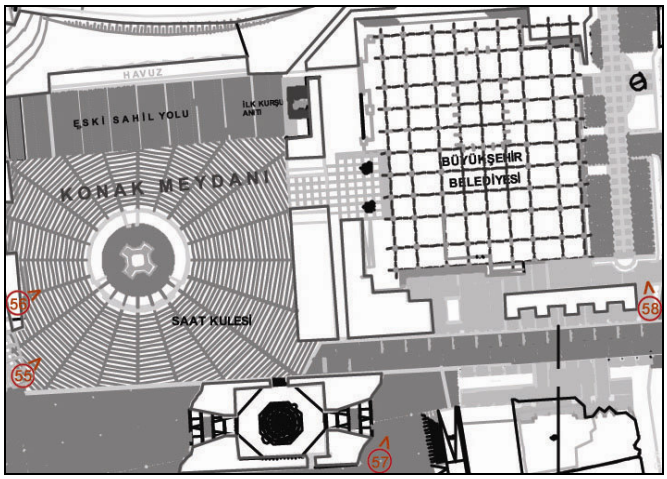


Figure 4.54. Sub- area-1: Around Clock Tower-Municipality Building

Considering the systematic observations, it is possible to say that; sub-area-1 is not safe enough because of various reasons. First of all, it is always crowded at daytime because of its land-use mix. For instance, the area has a varied users profile because of being the intersection point among main pedestrian ways around Konak Square. At the

same time, the area is nearby an administrative center, shopping center, and also adjacent to financial center Pasaport and gümrük area. Although, a mix of complementary land-uses and activities allows public places to be lively and secure, it sometimes creates conflict and insecurity, if the incompatible usages or activities exist, as in sub-area-1. Because of being an over-used public area, sub-area-1 has a great potential for particular types of crime such as pickpocketing, etc., at daytime.

Figure 4.55. Clock Tower-2006

On the other hand, although the sub-area-1 is open to view and users of the area provide a natural surveillance, there are several ways around clock tower and municipality building that provide potential escape routes for potential offenders. In this case, these entrance and exit points around the area must have been taken under control. It will not only discourage potential offenders, but also encourages the users of the sub-area-1 to feel a sense of ownership.

Public places should be provided by compatible activities that keep people in the area during 24 hours of the day. This makes the area lively at any time of the day and thus, provides natural surveillance. At that point, it must be considered that, encouraging the night time usage of the sub-area-1 by providing appropriate activities, not only keep people in this area, but also help to feel a sense of ownership and responsibility for their surroundings can make an important contribution to crime prevention in this area.

Although Konak Square is over-crowded public space during day time, it is almost empty at night because of poor lighting as well as lack of activities that encourages the night-time usage. Because of poor lighting, users do not prefer being

there after dark if not necessary to protect themselves from particular types of crime or anti-social behaviour which are mostly occur dark and isolated places, such as; snatching or sexual harassment, etc.

Figure 4.56. Night view of Clock Tower -2006

If we think in a criminal way; crime and anti-social behaviour are more likely to occur if public areas are poorly lit. Poor lighting of the public area not only provides hiding chance for potential offenders, but also increases the fear of crime. Observations have proved that, women do not prefer using the sub-area-1 after dark in order to not to take any risk for being a potential victim for any crime incidents.

At that point, providing the area with adequate lighting by considering its physical and land-use features, it is possible to reduce particular types of crime, as well as vandalism. Well-designed lighting will also help to increase the surveillance of the area after dark. At the same time, potential offenders will be discouraged by sending out the positive messages about the management of the sub-area-1.

Figure 4.57. Municipality building-2006

On the other hand, the street behind the municipality building allows vehicles and pedestrians promote activity at all times of the day. However, at the peak hours of the day, combining vehicle and pedestrian ways together, this area becomes more crowded and thus, insecure. In addition, users do not feel safe in this place, particularly at night, because of being close to the pubs and night clubs, etc. In this case, existence of drunks and strays also increases people's feelings of insecurity.

Figure 4.58. Municipality building-2006

4.3.4.2. Sub-area-2: Entrance of Kemeraltı Street

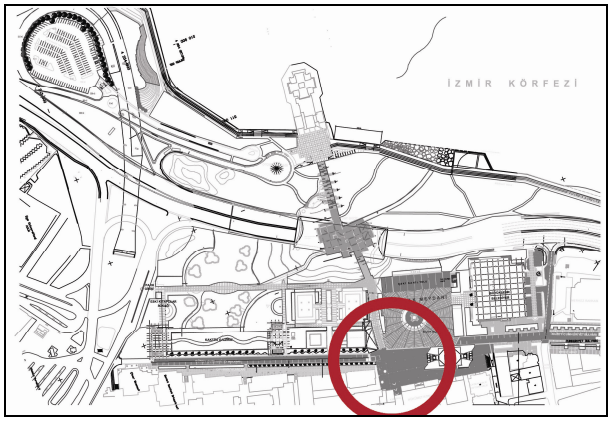


Figure 4.59. The Project of Konak Square

Entrance of Kemeraltı Street is the main connection point between Konak Square and the historical Kemeraltı Bazaar. That is why the area is always crowded and busy. Although, being side by side with the governor's building is an advantage for the security of the area, the intensive circulation makes sub-area-2 dangerous and open to crime.

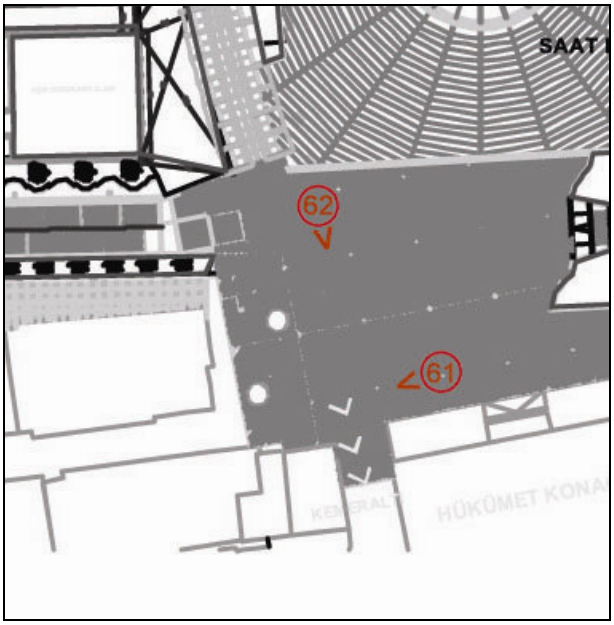


Figure 4.60. Sub-area-2: Entrance of Kemeraltı Street

In addition, the area is too close to the ATM point that is an important target for potential offenders and also includes a blind alley nearby. These features increase the possibility of any crime incidents or anti-social behaviours creating a concealment area

for potential offenders. Considering these characteristics of the sub-area-2, it is possible to say that, security precautions of the area are not enough to make it safe and they need to be improved.

Figure 4.61. General view from the entrance of Kemeraltı Street

On the other hand, the lighting of the area is not satisfactory and therefore, users do not feel safe in sub-area-2, particularly after dark. In addition, the blind alley is almost dark at night and it is a kind of concealment area for potential offenders.

It must be considered that, high standards of design give the impression of a place where crime and anti–social behaviour is not tolerated. In this case, improving the lighting features of the area not only encourages potential users, but also gives positive messages about the area.

Similar to the sub-area-1, although the entrance of Kemeraltı Street is an over-crowded public place during daytime, it is almost empty at night because of lack of activities that makes the area lively after dark.

Figure 4.62. Night view from the entrance of Kemeraltı Street

However, it is crucial that existence of compatible activities make public areas safer by providing natural surveillance and also increase the sense of ownership. Considering the sub-area-2, encouraging activity generators for night time usages will increase the safety of this area by providing natural surveillance that discourages potential offenders to commit crime.

4.3.4.3. Sub-area-3: Around İşbankası – Akbank

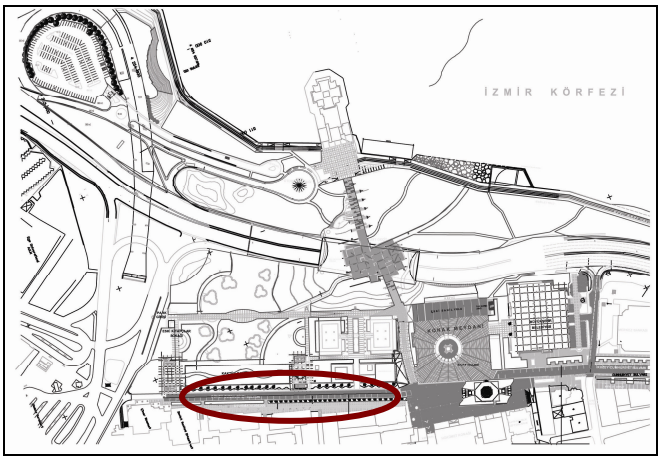


Figure 4.63. The Project of Konak Square

The entrances of the banks and ATM machines are on the main pedestrian way of Konak Square. That is why, the users find themselves in a crowded, two-way pedestrian circulation that gives an opportunity to potential offenders and raises the rates of particular types of crime, such as; pickpocketing or snatching. Because of the location of the ATMs, customers of the banks feel insecure while they are using cash-machines.

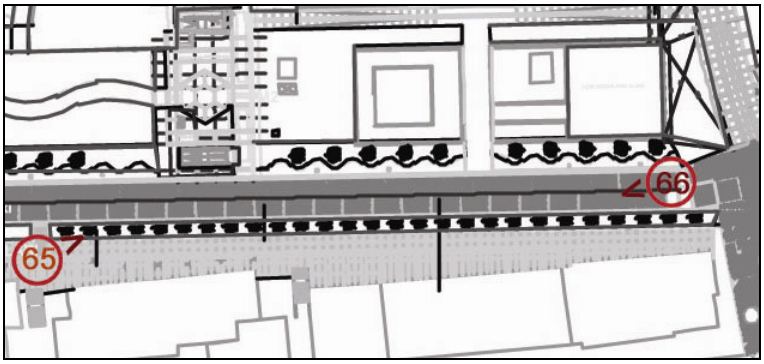


Figure 4.64. Sub-area-3: Around İşbankası – Akbank

There are crucial points that have to be considered while positioning the automated teller machines in public areas. Firstly, ATMs should be located in areas where there is maximum natural surveillance and formal surveillance. On the other hand, it must be avoided from entrapment spots. Another crucial point is to ensure that there are safe pedestrian routes to and from ATM's. To do that, there must be installed reflective features such as; mirrors, reflective glass etc. that maximises visibility in a variety of directions and eliminates surprises. Finally, consider close access to parking areas (Launceston City Council 2003).

Figure 4.65. Around İşbankası – Akbank

In this case, although the formal surveillance of this area is high, because of being an over-crowded, two-way pedestrian circulation at peak hours, the sub-area-3 gives an opportunity to potential offenders by reducing natural surveillance and raises the rates of particular types of crime, such as; pickpocketing or snatching, etc. In this case, decreasing the users' potential of this area will help to make the sub-area-3 safer by improving the natural surveillance as well as making easier to keep the area under control.

Systematic observations have shown that people do not feel safe enough while they are using the sub-area-3, not only daytime but also at night. In this case, poor lighting of the area must be improved to make area safer than before. Increased visibility of the area at night time will help to discourage potential offenders to commit crime. Thus, it also decreases the occurrence of any crime incident or anti-social behaviour.

Figure 4.66. Night view of the sub-area-3

On the other hand, although the sub-area-3 is close to the exhibition area, because of lack of activity generators around it, the sub-area-3 is almost empty at night. In addition to the day time activities and usages of the area, night time activities should also be provided in order to keep natural surveillance and to discourage potential offenders to commit crime.

4.3.4.4. Sub-area-4: Around Subway

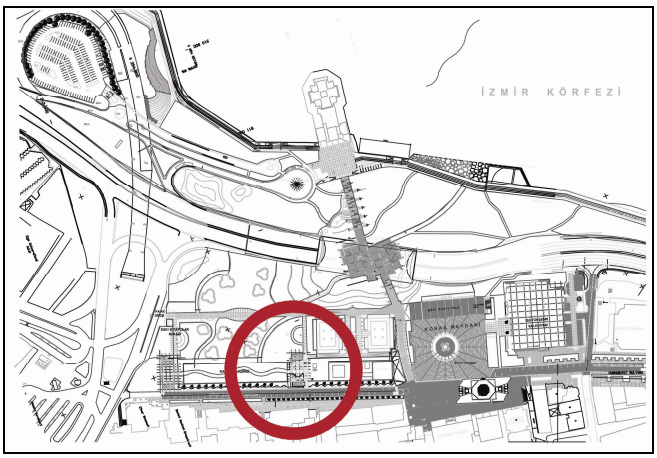


Figure 4.67. The Project of Konak Square

Subways are one of the spaces where urban residents feel vulnerable to crime or anti-social behaviour. Particularly women and disabled people are more sensitive than men to overall environmental conditions including transportation-linked spaces. Women also tend to feel significantly more vulnerable than men in and around the subway.

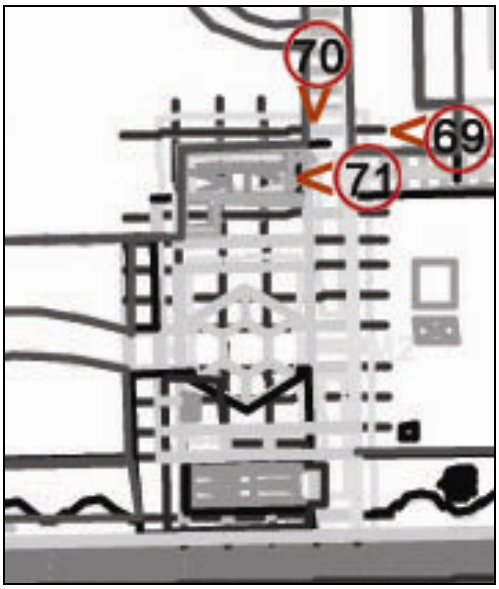


Figure 4.68. Sub-area-4: Around subway

Quality of the subway environment changes users' perceptions of crime. The solutions are a combination of safer design; management that gives priority to security; increasing usage, especially at off-peak hours; and the active participation of users in identifying problems and solutions (Wekerle and Whitzman 1995).

Figure 4.69. General view from subway

In this case, it is crucial that, the existence of kiosk on the entrance of the subway provides natural surveillance and thus, increase the feelings of security. It must be considered that, subways are potential hiding places for potential offenders. That is why security precautions of these areas must be higher than other places. Considering the varied users potential of the Konak Square, it is obvious that, sub-area-4 is one of the places where additional security precautions are need to be required, such as; CCTV, etc.

Where subways are unavoidable, they should be as wide and as short as possible with the exit visible from the entry, natural light introduced into the centre and high levels of artificial light (ODPM 2004).

Although the lighting of the sub-area-4 is not very poor, it needs to be improved to make people feel secure. As mentioned above, subways provide potential concealment area for potential offenders. Therefore, improving lighting features of the sub-area-4 will help to discourage offenders to commit crime by providing natural surveillance.

Figure 4.70. Night view from subway

On the other hand, because entrances and exits of subway in Konak Square are crowded points, street vender usually locate around this particular area. However, this situation make people feel insecure, because potential offenders also prefer being around these places where potential victims exist.

Figure 4.71. General view from the entrance of subway

Additionally, it is difficult to distinguish these two groups which are located around for different reasons. Police officers also explain that offenders sometimes

behave like vender in order to not to attract attention. This situation sometimes creates conflict in users mind and increases their feelings of insecurity. Particularly, after dark this feeling increases combining with poor lighting. At that point, providing activity generators that help to keep area under control and increase natural surveillance will also help to remove potential offenders from the area.

4.3.4.5. Sub-area-5: Around Shelters

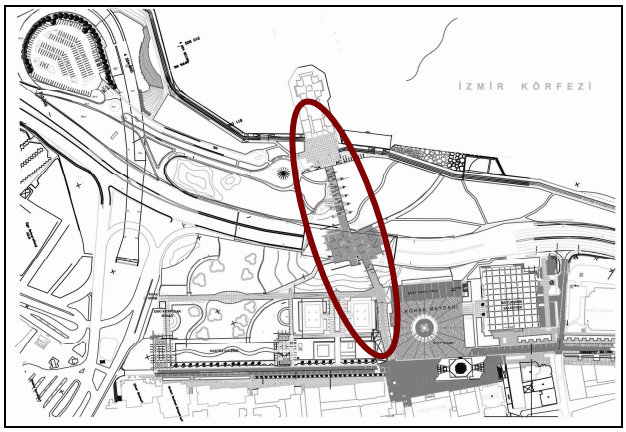


Figure 4.72. The Project of Konak Square

Sub-area-5, is the only place in Konak Square where provides protection against weather condition such as; sun or rain, etc. At the same time, sheltered area is the main connection point between quay and Kemeraltı bazaar.

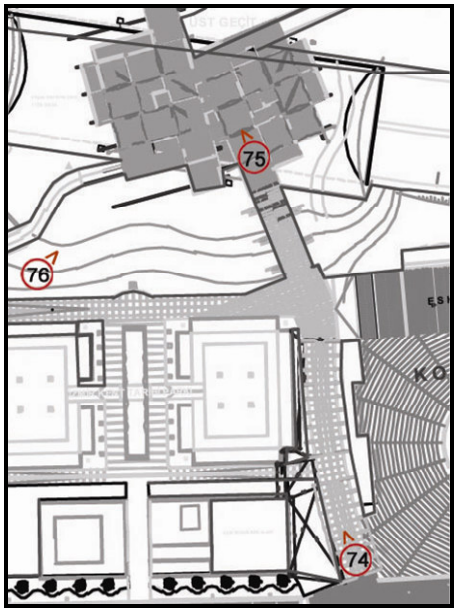


Figure 4.73. Sub-area-5: Around Shelters

Figure 4.74. General view from sheltered area

These features increase the usage frequency of the area, and make it crowded, particularly at peak hours of the day. On the other hand, peddlers usually locate throughout the sub-area-5, because of intensive pedestrian traffic. In addition, offenders sometimes behave like peddler in particular area and this situation creates conflict and increases users' feelings of insecurity. It also increases particular types of crime, such as; pickpocketing, snatching, etc. In this case, it is crucial to keep area under control by removing peddlers from the sub-area-5. At the same time, providing activities or furnishing that keep people in the area and encourage night time usage will also help to increase the safety of the area by providing natural surveillance, as well.

Figure 4.75. General view from sheltered area

Although the area is open to view, lack of or poor lighting decrease visibility, and increase the opportunity for crime. That is why the users of the area feel unsafe, particularly at night. Poor lighting and lack of security precautions of the area increase the possibility for particular types of crime or anti-social behaviour, such as; sexual harassment or snatching, etc.

On the other hand, because of lack of activity generators that help to keep people in the area and provide natural surveillance, users of Konak Square do not prefer using the area after dark. Because of these reasons, the sub-area-5 looks neglected, particularly at night. Therefore, users of the area hesitate to be there in order to protect themselves from being a victim for any kinds of crime incidents.

Figure 4.76. General view from sheltered area

4.3.4.6. Sub-area-6: Surroundings of Quay

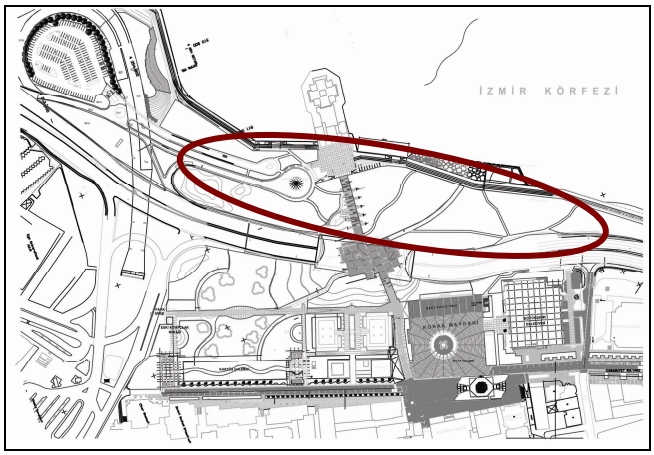


Figure 4.77. The Project of Konak Square

Surroundings of quay, is one of the sub-area where people feel insecure and vulnerable to crime. Because of various design problems, the area makes users feel in danger, particularly after dark. Poorly-lit secondary footpaths of the area give an opportunity to potential criminals for concealment and escape. It must be considered

that, criminal activities are more likely to occur if spaces are underused by capable guardians like sub-area-6.

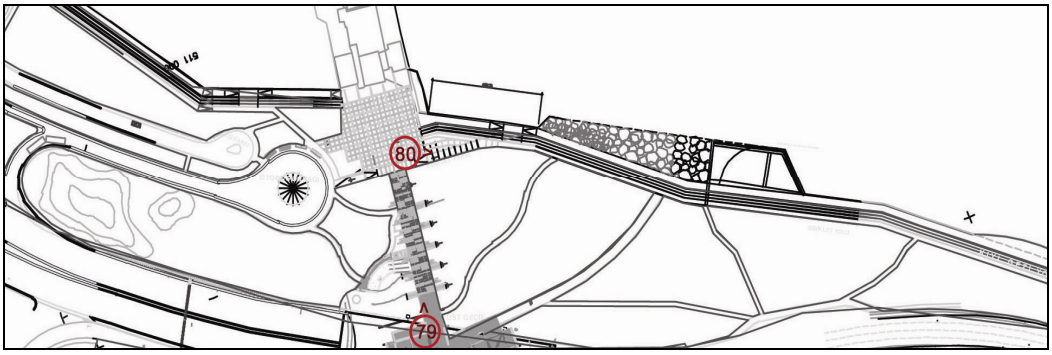


Figure 4.78. Sub-area-6: Surroundings of Quay

If we think in a criminal way; crime and anti-social behaviour are more likely to occur if pedestrian routes are poor lighted and indirect as in sub-area-6. In addition, there are several ways into and out of an area that provide potential escape routes for potential criminals.

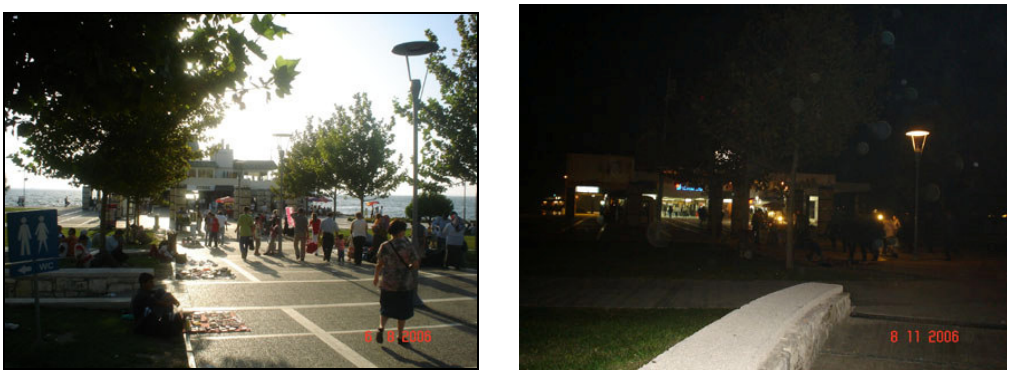


Figure 4.79. General views from the sub-area-6

On the other hand, being close to the other sub-areas which have a great potential for crime, such as; public toilet and parking lot, increase the feelings of insecurity of the users, as well. These features reduce the safety of the sub-area-6. That is why the area needs some improvements in order to be a safer place.

It is crucial that, providing complementary land-uses and activities that encourage particularly night time usage of the area will help to increase the safety of the area by keeping eyes on it. In addition, increasing the attractiveness of the sub-area-6 by providing better furnishing and landscaping will not only make the area safer, but also

give the impression to the potential offenders that this area is cared and crime or anti-social behaviour is not tolerated.

Figure 4.80. General views from the sub-area-6

In this case, another crucial point is the lighting of the area. In sub-area-6, footpaths are poorly lit areas that not only provide hiding chance for potential offenders, but also increase the fear of crime of the users. At that point, improving the lighting features of the area will help to discourage potential offenders to commit crime by encouraging users and providing natural surveillance.

4.3.4.7. Sub-area-7: Parking Lot

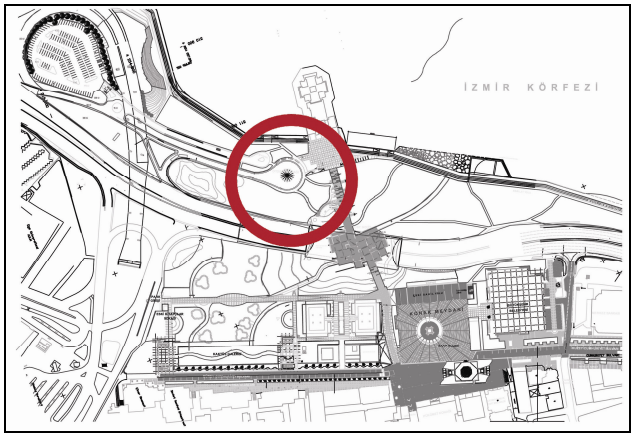


Figure 4.81. The Project of Konak Square

Considering the systematic observations, parking lot in Konak Square has been defined as one of the most dangerous places particularly after dark. Spaces where urban residents feel insecure include places where surveillance is not enough.

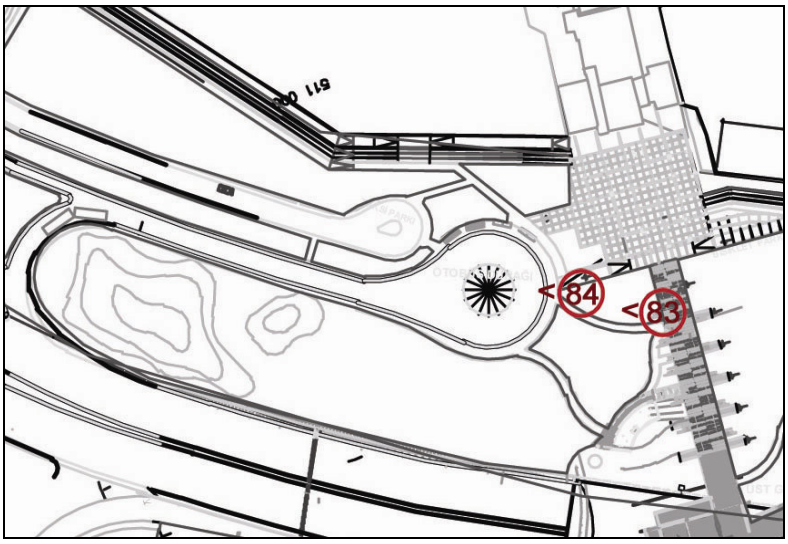


Figure 4.82. Sub-area-7: Parking Lot

Although, the formal surveillance of the sub-area-7 is high, parked cars in the area decrease the surveillance and provide some hiding points for potential offenders. Combining with poor lighting, the area becomes more dangerous particularly after dark. In this case, improving natural surveillance will help to discourage potential offenders to commit crime or anti-social behaviour. To do that, activity generators must be improved which make the area lively at any time of the day and help to keep people around the area and thus provide natural surveillance, such as; kiosk or newspaper wholesaler, etc. On the other hand, temporary activities could be recommended to increase the night time usage of the area.

Figure 4.83. General view from parking lot

In addition, because the sub-area-7 has a great potential for crime, the lighting features of the area must be considered more carefully. It is obvious that, places where crime and anti-social behaviour are likely to occur (such as; sub-area-7), the sufficient lighting features will help to improve the safety of the area.

Konak Square has become more attractive for potential offenders including potential concealment points, as well as potential victims that results from parked cars. In this case, it must be considered that increasing visibility by providing lighting and activity generators will help to discourage potential offenders to commit crime in this area.

Figure 4.84. Night view

On the other hand, lack of certain boundaries which means that there are no certain entrance and exit points to and from the sub-area-7 it is difficult to keep area under control. This situation also provides potential entrapment points from the area. Providing formal or natural boundaries which result from landscaping of the area, as well as design features will also help to keep area under control. Combining landscaping of the sub-area-7 with security measures will create a pleasing and safer environment. This will encourage people to use the area and provide natural surveillance. Thus, it will also discourage potential offenders.

4.3.4.8. Sub-area-8: Public Toilets

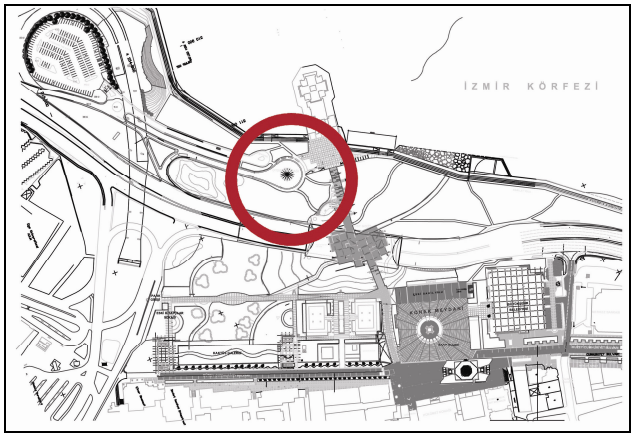


Figure 4.85. The Project of Konak Square

Considering the systematic observations, it is possible to say that sub-area-8 is defined as one of the most dangerous places in Konak Square. The main problem of the sub-area-8 results from its design features. For instance; users of the area have to use under-passes in order to reach to the toilets. However, these features increase the feelings of insecurity by providing poor surveillance and by creating potential concealment points for offenders, particularly after dark.

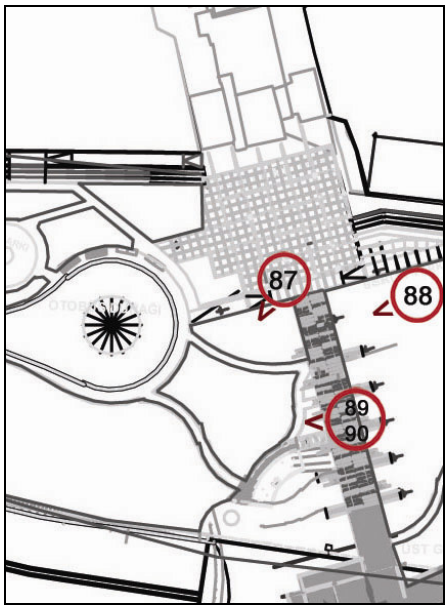


Figure 4.86. Sub-area-8: Public Toilet

Although, sub-area-8 is designed on purpose in order to hide the toilets into landscape, this feature decreases the safety because of preventing easy surveillance and

isolating the sub-area-8. In addition, poor lighting keeps people away from using the area at night, to prevent themselves from being a victim for any type of crime.

Figure 4.87. Entrance of public toilets

Spaces where urban residents feel vulnerable include places where surveillance is not enough, such as; isolated routes or places. In this context, users feel unsafe in sub-area-8. Because, they have to use under-passes in order to reach the toilets that increase the feelings of insecurity because of poor visibility of the area after dark. On the other hand, insufficient lighting features also make the sub-area-8 more attractive for potential offenders including concealment area, as well.

Figure 4.88. Night view

Figure 4.89. Entrance of public toilets

It must be considered that, a mix of complementary land-uses and activities allows public places to be lively at any time of the day. Considering the sub-area-8, in addition to its main function, providing additional compatible activities around the area will help to keep people there, not only day time but also at night. These activities or functions do not have to be permanent. In other words, these activities can be temporary for encouraging the night time usage of the sub-area-8 and around. This provides natural surveillance and decreases the feelings of insecurity.

Figure 4.90. Night view

4.3.4.9. Sub-area-9: Around YKM Building

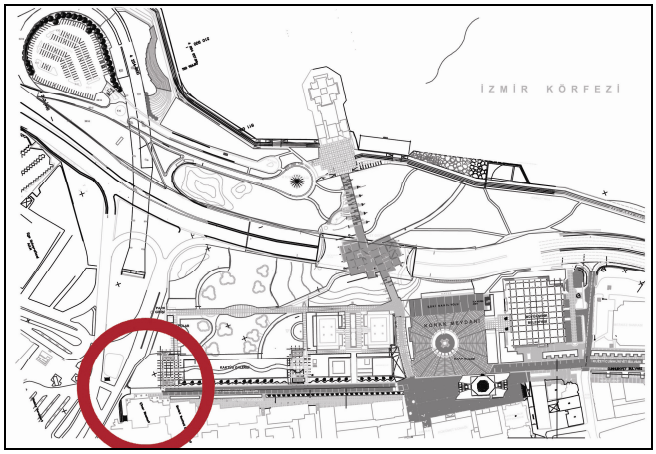


Figure 4.91. The Project of Konak Square

Konak Square is one of the crucial intersection points for public transportation that make the area crowded and insecure in many ways. Considering the systematic observations, one of the hot spots of crime in this area has been defined as around YKM building because of its location. The sub-area-9 includes vehicle and pedestrian traffic side-by side that creates conflict and increase the density of the area. This situation decreases the safety of the area, as well.

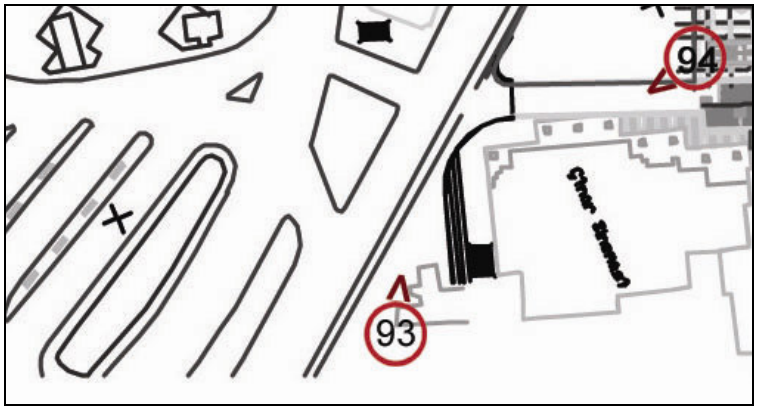


Figure 4.92. Sub-area-9: Around YKM Building

As mentioned above, location of the area increases its potential to be unsafe place. As being on the intersection point of vehicle and pedestrian traffic it is difficult to keep the sub-area-9 under control. At the same time, the area is the main connection point between Konak Square and surroundings, as well as bus stops, which are one of the most popular transportation ways to reach the area.

Figure 4.93. General view of around YKM

Unlike most of the other sub areas, the sub-area-9 includes many incompatible land-uses and activities which decrease the safety of the area. However, as already mentioned, over-used places have a great potential for crime. Because it is hard to keep these kinds of places under control and this situation encourages potential offenders to commit crime. Combining with insufficient design features and poor lighting, this situation also increases the sense of ownership by decreasing the ignorance of the area.

Figure 4.94. Night views

At that point, elimination of the incompatible usages and activities from the sub-area-9 will help to reduce the user potential of the area. This situation helps to increase natural surveillance and allows keeping area under control more easily, and thus, discourages potential offenders.

Comparing with the daytime intensity, the sub-area-9 is almost empty at night because of lack of night time activities that keep people in the area. In addition, including many concealment points make this place more attractive for potential offenders. In order to prevent that, the sub-area-9 needs additional security precautions

such as; more police, CCTV in order to be a safer place. However, it is crucial that, in addition to these precautions, encouraging night time usage will also make area lively at all time of the day and it will help to increase the sense of ownership, as well.

4.3.4.10. Sub-area-10: Seating Areas

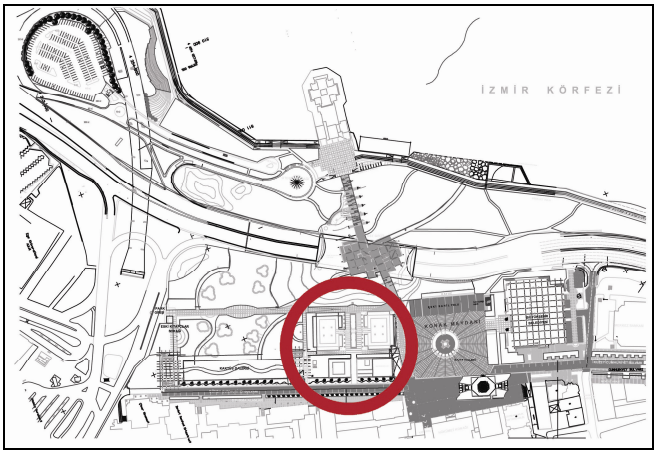


Figure 4.95. The Project of Konak Square

The sub-area-10 is an empty place almost every time of the day because of being away from the main pedestrian path of the Konak Square. In addition, the poor design of the seating area provides potential hiding places for potential offenders particularly at night. People also do not prefer using this place because of lack of activity. These features increase the isolation of the area and thus decrease the safety, as well.

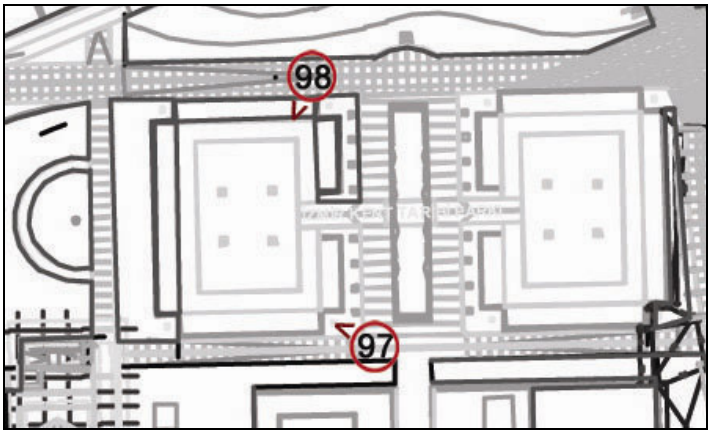


Figure 4.96. Sub-area-10: Seating Areas

The sub-area-10 is almost empty at night. In this case, the walls which surround the area prevent easy surveillance and increase the isolation of the sub-area-10. In addition to the dull design of the area, poor lighting keeps people away from using there to protect themselves from any kind of crime or anti-social behaviour.

Figure 4.97. General view from the seating area

The design features of the sub-area-10 need to be improved to make this area more attractive. These features include landscaping, furnishing and lighting of the area. It is crucial that well-designed public places attract people and encourage them to use these areas, as well as preventing the ignorance of the area and helping them to feel a sense of ownership.

Figure 4.98. Night view

In this case, in order to reduce the negative effects of the formal surveillance, natural surveillance should be encouraged through the day and night by providing complementary activities that help to keep people in this area. This provides natural surveillance and thus, increases the safety of the area.

4.3.4.11. Sub-area-11: Secondary Paths

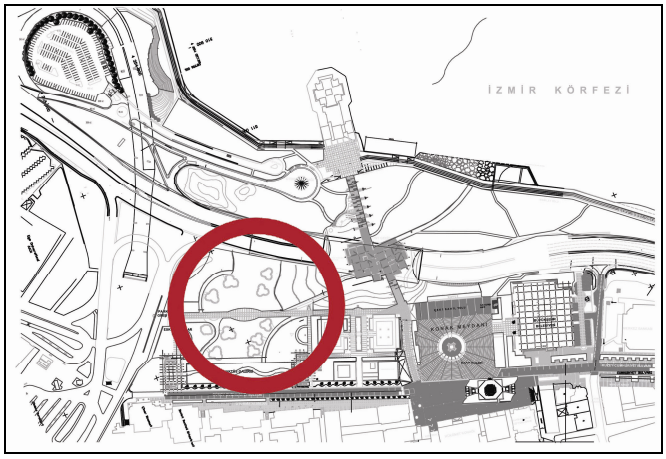


Figure 4.99. The Project of Konak Square

Natural surveillance helps safety and isolated routes provide opportunities for crime and anti-social behaviour. In sub-area-11, secondary paths are mostly neglected because these areas do not have an attractive design that encourages people to use this place. In addition, because the secondary paths in Konak Square are poorly lit, people hesitate to use these places in order to avoid being a victim for any types of crime. That is why users of the area feel insecure and do not prefer to use these areas if not necessary, particularly after dark.

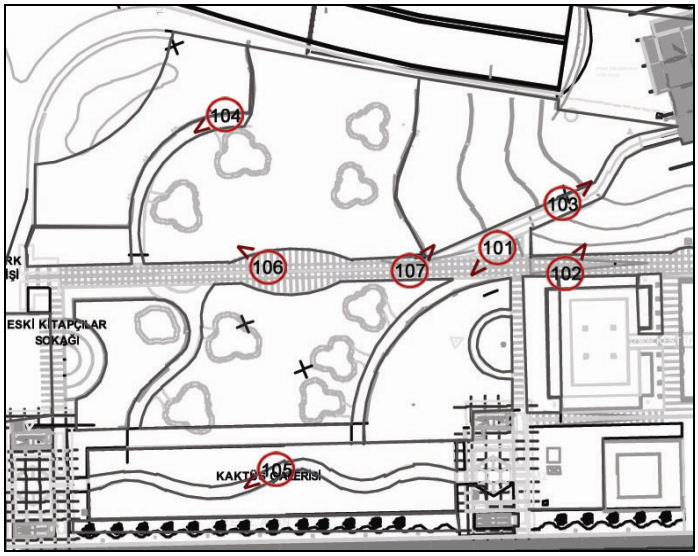


Figure 4.100. Sub-area-11: Secondary Paths

The quality and intensity of use of streets and footpaths can determine the number of people using them. The particular risk of crime and anti-social behaviour will also depend on the local context. For example, streets that are not well used may be more prone to burglary; moderately used streets may be more liable to mugging; and too crowded streets more prone to pickpocketing (ODPM 2004).

Figure 4.101. General view of secondary paths

As one of the crucial design principles to prevent crime is where footpaths are required; they should be as straight as possible and wide, avoiding potential hiding places and concealment points. In addition, they should also be overlooked by surrounding activities.

Figure 4.102. General view of secondary path

However, considering the secondary paths of Konak Square, it is possible to say that, in addition to the curled structure of them that decreases the visibility, lack of activities which keep people in these areas particularly after dark make area neglected and thus, increase the users' feelings of insecurity. That is why users do not prefer using the secondary paths of Konak Square to protect themselves from any types of crime.

Figure 4.103. General view of secondary path

In this case, it is crucial that government and designers should consider that high standards of design give the impression of a place where crime and anti-social behaviour is not tolerated. In addition to the design features, furnishing and landscaping should also be considered as one of the crucial points that make area safer and also reduce the feelings of insecurity.

Figure 4.104. Night view of secondary path

Design and material features of street furniture is as crucial as its quantity. It must be considered that, designing products for public areas needs extra efforts in order to protect them against vandalism, etc.

Figure 4.105. Night view of secondary path

Seating elements in the sub-area-11 have been aimed to provide the lighting of the area as seen above. However, because of poor management and lack of maintenance in the area, these products are vandalised by offenders. Thus, secondary paths look neglected and not cared that encourages potential offenders. Combining with insufficient lighting, poor maintenance makes these areas more neglected and dangerous, particularly at night. Therefore, users of Konak Square avoid using these parts of the area.

Figure 4.106. Neglected parts around secondary path

On the other hand, design of Konak Square also includes some problem areas which are useless and look abandoned. Because these areas do not include any activities or functions that bring people there and make these areas lively, people do not prefer using these types of areas where crime or anti-social behaviour are likely to occur.

Figure 4.107. Neglected parts around secondary path

In addition to the lack of activities, unattractive appearance of these areas prevents properly usage of them, and thus, in the course of time these areas have become more and more ignored. It is obvious that, high standards of design give the impression of a place where crime and anti-social behaviour are not tolerated. In this case, these kind of abandoned places encourage potential offenders and increase the feelings of insecurity, as well.

4.3.4.12. Sub-area-12: Exhibition Area

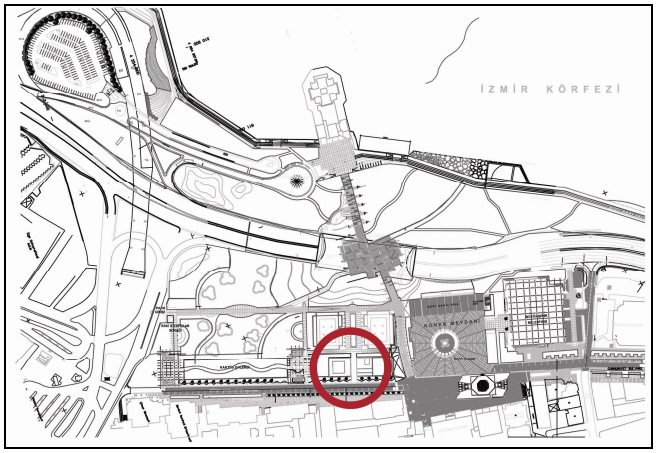


Figure 4.108. The Project of Konak Square

Crime and anti-social behaviour can be minimized by providing activities and spaces that stimulate their interest. However, there is very rare activity in Konak Square which encourages people to use the area any time of the day. This is why many parts of Konak Square look neglected and unsafe where the possibilities for crime or anti-social behaviour are high, particularly after dark.

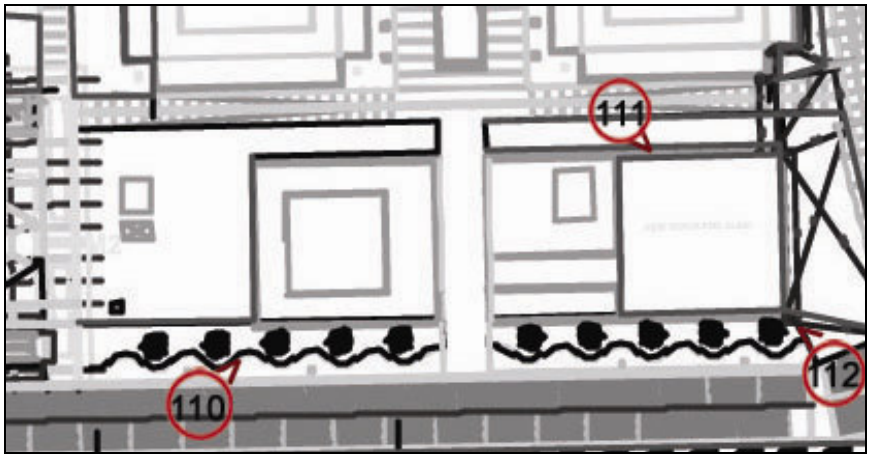


Figure 4.109. Sub-area-12: Exhibition Area

Activity on the street adds character and provides natural surveillance. Spaces which can be perceived as being welcoming and attractive do not run the risk of becoming the hotspots for crime and anti-social behaviour (ODPM 2004).

Figure 4.110. General view of Exhibition Area -2007

In this case, this part of the area could be used for complementary activities which stimulate the interests of people and make this particular area lively. This keeps people's eyes on the area and provides natural surveillance.

Figure 4.111. Exhibition Area

Although the area is open to view, users do not feel safe enough because of poor lighting, particularly at night. In addition to the lack of activities, poor lighting of the area keep people away from there after dark. Because of these negative effects people avoid using the area in order to protect themselves from being a victim of any crime incidents.

Figure 4.112. Night view

4.4. Research Findings and Recommendations

Konak Square has witnessed several physical transformations during its lifetime for more than a century and finally it has been redesigned in 2003. In this study, because of being a recently designed public space, Konak Square has been analysed through the CPTED principles in order to find out whether there are relationships between design of the built environment and crime, as well as fear of crime, or not.

To do that, first of all, official crime records of the area have been collected from the İzmir Police Department (Kemeraltı Karakolu). Then, safety questionnaire has been responded by the users of the area and design professionals. In addition to these findings, the study area has been observed during the study. As a result, the structure of this study is based on the official crime records, user questionnaire and systematic observations.

Official Crime Records: At the beginning of the study, the official crime records have been obtained from the İzmir Police Department and they have been taken into consideration before and after the implementation of Konak Square redesign process. Official crime records have shown that the number of crime incidents in the area have decreased after redesign of the Konak Square. At that point, it has been needed to investigate that whether redesign of the area has any effect on the reduced crime rates of the area, or not. In this case, in order to find out the negative and positive effects of redesign of Konak Square on crime and fear of crime; in addition to the systematic observations, safety questionnaire has also been considered.

Considering the official crime records, it is possible to say that -around YKM building- has the highest crime rate which is followed by -around işbank-akbank- and –around clock tower-municipality building. In addition to these areas, -around quay- and -entrance of the Kemeraltı Street- also have been recorded as another crime areas. In this case, it must be considered that because the entrance of subway has only two years records, it has had the lower rate comparing with other parts of Konak Square.

Based on the official crime records, the types of crime in the area include pickpocketing, snatching, wounding, theft from shop and forgery. At that point, it is crucial that, in addition to the recorded crimes, there are other types of crime and anti-social behaviour which are not recorded but exist in the study area, including physical or verbal harassment and vandalism. Considering the official records, pickpocketing has

the highest rate among other types of crime. On the other hand, theft from shop has the lowest rate. In this case, the important thing is that types and numbers of crime incidences show some differences depending on the sub-areas as well as time of the day and even the seasons of the year. For instance, although pickpocketing has the highest rate, its frequency varies depending on the sub-area and it occurs usually when the area is over-crowded at daytime. However, crime incidents like wounding, snatching usually occur after dark and empty hours of Konak Square. At the same time, crime rates of summer are higher than winter. Police officers briefly explain that the main reason of this is the "increased population" of the area. Especially in summer, in addition to its' routine users, many tourists visit the Konak Square that are the potential victims for offenders. Therefore, the crime rates of summer are higher than other seasons.

Considering each year, crime rates of the Konak Square have the highest rate between (12.00 pm – 21.00 pm). It is obvious that the main reason of this result is the highest population and usage frequency of the area during this time period. On the other hand, the official crime records also have shown that crime incidents have peak points between (12.00-14.59 pm) in Konak Square. Considering the comments of police officers and systematic observations, this situation can also be explained as it is because of over-crowded population of the area during this time period. On the other hand, the main reason of the lowest crime rates in the early morning and night times is due to the lack of users at these time periods.

According to the official crime records, the rate of male offenders is significantly higher than female offenders and also the number of juvenile offenders is considerable compared to adults. In addition, based on the official crime records, it is possible to say that the number of female victims for four year period is higher than male victims.

User Questionnaire: After collecting the official crime records, user questionnaire of Konak Square has been designed to find out the relationships between usage and design features of Konak Square and crime, as well as fear of crime. The questionnaire has been conducted to be asked to general users of the area and design professionals in order to reach average responses and also to find out how responses have varied considering the general users and design professionals' point of views. Then, results of the questionnaire have been analysed by using cross-correlation techniques and chi-squared analysis.

In this case, twelve sub-areas have been concluded from the results of the safety questionnaire and systematic observations, including; Sub-area-1: Around Clock Tower- municipality building; Sub-area-2: Entrance of Kemeraltı Street; Sub-area-3: Around İşbankası-Akbank; Sub-area-4: Around subway; Sub-area-5: Around shelters; Sub-area-6: Surroundings of Quay; Sub-area-7: Parking lot; Sub-area-8: Public toilets; Sub-area-9: Around YKM building; Sub-area-10: Seating areas; Sub-area-11: Secondary paths; Sub-area-12: Exhibition areas.

The main findings of the questionnaire have shown that, people who live in cities could feel insecure no matter what their ages are. In other words, fear of crime does not only affect at people of specific ages. Feeling of insecurity diminishes people's qualities of life that live in cities from children to adults and elderly. On the other hand, the user questionnaire has proved that gender has significant effects on fear of crime. According to the results, under the same circumstances, although most of the women feel insecure in the area; approximately half of the male users feel in danger, too. In this case, it is obvious that, women usually feel themselves insecure and more vulnerable to crime in cities, depending on bad circumstances such as; highly-risky crime areas and poorly designed public areas, etc.

The results of the questionnaire also have shown that, users generally have worried about being a victim of pickpocketing at daytime. On the other hand, considering the night time, other types of crime which mostly occur at empty and dark hours of the area including snatching and wounding are the most feared crimes, as well. Another specific finding is that women feel more anxious about being a victim of "snatching" in Konak Square than men. Although most of the male users do not feel anxious about being a victim of snatching, there is a small group of male respondents who also feel insecure. At that point, considering the explanations of respondents, there are some specific circumstances which affect these results. For instance, most of the female users who answered the questionnaire have explained that they do not prefer being in Konak Square because of fear of crime, particularly after dark. Because most of the "wounding" crimes occur at dark and empty hours of the area, female users avoid being there at these parts of the day. Thus, the majority of female respondents do not feel insecure to this type of crime, as much as men. On the other hand, there are other types of crime and anti-social behaviour that women feel anxious about being a victim, such as; physical or verbal harassment, etc. That is why; most of the female users do not prefer using the area, especially at night and empty hours of the area.

Results also have shown that fear of crime sub-areas in Konak Square vary depending on the gender of the users. For instance, considering the female users, Sub-area-11: secondary paths, Sub-area-6: around quay and Sub-area-7: parking lot defined as the most dangerous points in the area. On the other hand, male users have defined the most dangerous points as Sub-area-6: around quay, Sub-area-3: around İsbank-Akbank and Sub-area-9: around YKM, as well. According to the results of the questionnaire, most of the female users of Konak Square do not prefer being in the area, particularly after dark. In addition, although they explain that there are many dangerous points in this public area, they particularly avoid being in some areas where entrapment and concealment areas exist for potential offenders, such as; public toilet, entrance of Kemeraltı, etc.

Considering the results of the questionnaire; Sub-area-6: around quay is defined as the most dangerous sub-area where people feel unsafe and vulnerable to crime. Following the quay, Sub- area-11: secondary paths is defined as the second feared crime sub-area. Then, Sub-area-9: around YKM building is also defined as the third one, as well. In that case, they also add that some of the sub-areas including parking lot, public toilets and seating areas also make people feel insecure because their design features create potential concealment and entrapment points that encourage potential offenders. On the other hand, people also feel anxious about being a victim of particular types of crime such as; pickpocketing and snatching in Sub-area-9: around YKM building and Sub-area-3: İşbank-Akbank where there are intensive pedestrian circulations exist nearby ATM points.

In addition to these negative circumstances, the users of Konak Square have explained that their perceptions of insecurity increase after dark because of poor lighting. For instance; users who do not feel safe in this area mostly explained that they avoid being in Konak Square at night because of poor lighting. In this case, it is obvious that, sufficient lighting makes public places safer, as well as attractive. The results also have proved that there are close relationships between the impression of lighting and types of crime or anti-social behaviour. It is crucial that, sufficient lighting of the public areas increase their safety and reduce the users' fear of crime. On the other hand, female users simply avoid using these kinds of poorly-lit sub areas, after dark.

People usually hesitate to use places where they feel insecure. At that point, the users of Konak Square have explained that security precautions need to be improved in order to make the area safer. Respondents also have explained that more police and

private security will help to decrease the users' fear of crime by discouraging potential offenders to commit crime. The respondents have also explained that in addition to the insufficient security precautions, they do not prefer spending their spare time in Konak Square because of lack of activities and insufficient furnishing. For instance; insufficient furnishing features, such as; lack of shelters that protect people from the effects of weather, also keep people away from the area. At the same time, most of the respondents believe that having better design features help to increase the safety of Konak Square by keeping people in this area and thus, increasing natural surveillance not only daytime, but also at night.

The results of questionnaire have shown that most of the respondents think that the redesign of Konak Square has made the area safer than before. On the other hand, they have added that there are still dangerous points in Konak Square which provide an opportunity for potential offenders to commit crime. As a result, the respondents have provided a rich source of data, concerning their personal safety concerns in and around the study area and the findings broadly support Crime Prevention through Environmental Design theory. It also highlights the significance of user perceptions in the design and management of built environment facilities.

Systematic Observations: Konak Square has been observed through the study in order to realize the general usage characteristics of the area and also to analyse how fear of crime affects users' behaviours in this area. During this process, the observations have been realized considering the following features; lighting, concealment and entrapment spots, surveillance and visibility in the area. In addition, land use of Konak Square, activity generators and sense of ownership in the area have been considered, as well.

The systematic observations have shown that in addition to the changing characteristics and intensity of the area through the day, the weekdays and weekend profile also have shown some remarkable changes. For instance, Konak Square is an administrative center, shopping center, and also adjacent to financial centers. Therefore, the area is over-crowded public place, particularly at daytime of weekdays. In addition, people use this area to reach somewhere else by using any types of public transportation including; ferry, subway and bus that also increases the usage and population frequency of the area. On the other hand, considering the weekends, it is possible to say that, people use Konak Square for shopping and public transportation. However, they do not prefer spending their spare time there because of lack of activities that keep people in

the area and make it lively. At the same time, most of the users are not satisfied with the design characteristics of the area, such as; insufficient furnishing features and poor lighting, etc. In addition, because of lack of activities Konak Square is quite empty, at weekends. These considerable differences also create security problems and increase the occurrence of crime and fear of crime in the area. Consciously or not, some security problems occur in Konak Square because of complicated situation of the area.

Additionally, because of neglected appearance of the area, Konak Square becomes more attractive to strays, drunken people and drug addictives which have a great potential for committing crime. Particularly, some parts of Konak Square including; secondary paths and around quay, look dull and neglected where crime and disorder are likely to occur. Considering the systematic observations, the main reasons of this situation are the lack of activity and poor furnishing features in these parts of the area. Because of this, people do not prefer using these kinds of areas properly, and in time, they become more and more ignored. These kinds of abandoned places encourage potential offenders and thus increase the feelings of insecurity. In other words, users of Konak Square perceive their risk to be significantly higher and therefore people are discouraged from using the area, particularly at night. In this case, it must be considered that, high standards of design give the impression of a place where crime and anti-social behaviour are not tolerated.

On the other hand, users of Konak Square also think that the security precautions are not enough to make the area secure. That is why they usually hesitate to use particularly neglected parts of the area including; secondary paths, around quay, etc. where their feelings of insecurity are high. Particularly, female users feel more vulnerable to crime in this area and the perceived fear of crime discourages them from using it after dark. Because characteristics and activities of the area have changed through the day and night, as well as weekdays and weekends, the types and rates of crime incidents in Konak Square also have shown some specific changes. For instance, as one of the crime types that occur in the area, pickpocketing has the highest rate at over-crowded hours of Konak Square. On the other hand, types of crime such as; wounding or sexual harassment mostly occur after dark and empty hours of the area. In this case, particularly women are afraid of using the area at night time and their fear of crime appear to function as a significant environmental mobility restrictor.

In addition to the being an illegal activity, street vending also decrease the security of the area, as well. Street venders mostly locate around crowded points of the

area, such as; entrance of subway and on the main pedestrian paths, etc. At that point, it is crucial that, all types of street vending openly occupy space approximately in each parts of the area. This situation make people feel insecure, because potential offenders prefer being around these kinds of places where potential victims exist. In this case, it is difficult to distinguish these two groups which are located around for different reasons. On the other hand, police officers also explain that offenders sometimes behave like street venders in order not to attract attention. The study has shown that this situation sometimes creates conflict in users' mind and increases their feelings of insecurity, particularly, combining with poor lighting.

Another crucial point is that furnishing of public areas requires special attention depending on the characteristics of the area and their users. For instance, although Konak Square is a wide open space, the area does not have enough shelters that protect users from weather conditions, such as wind, sun or rain, etc. Because Konak Square is a wide open space, users usually complain about lack of sheltered areas that protect themselves from the weather conditions. On the other hand, systematic observations have also proved that, because of poor management and lack of maintenance of street furniture in the area Konak Square looks disorder and neglected that encourage potential offenders to commit crime.

Additionally, except for the seating elements which are on the main pedestrian way and around clock tower, people hesitate to use the designed seating area and secondary paths in many reasons. Because these areas are not close to the main pedestrian circulation people usually ignore them. In addition, because these parts of Konak Square are poorly designed and lit, people do not find these specific areas attractive and safe enough to use them.

According to the results of the questionnaire and systematic observations, people are not satisfied with the lighting features of the area and they also think that better lighting features will make the area safer. Truly, studies have proved that there are close relationships between the lighting of public spaces and the feelings of insecurity. For instance, according to the observations people do not prefer using the area after dark, because of insufficient lighting features. Poorly-lit sub-areas such as; pedestrian routes or around quay and potential concealment areas such as; public toilets or in and around subway, provide hiding chance for potential offenders and thus, increase the fear of crime. On the other hand, because of several pathways into and out of the area, there are potential escape routes for criminals. It must be considered that, criminal activities are

more likely to occur if spaces are poorly designed which include some dangerous details such as above.

Considering the systematic observations, it is possible to say that; around quay, secondary paths and around parking lot-public toilet are the most feared parts of the area. This situation is also proved by the results of the user questionnaire. As mentioned above, the main reasons of this situation are poor lighted and neglected parts of the area. As another result, design features of Konak Square also include potential entrapment and concealment areas that encourage potential offenders. However, it is obvious that these kinds of hot spots of crime could be reduced by better design features. Thus, it is possible to increase the safety and attractiveness of public places and encourage people to use them.

Users of Konak Square usually prefer public transportation in order to reach the area, because of being of the intersection point for many types of public transportation, including; subway, bus and ferry. However, as it has been proved by many previous researches, using public transportation after dark generates the highest level of fear of crime. This idea has also been supported by the answers of respondents. In this case, the safety precautions of the area should have been considered more carefully. For instance, in addition to the poor lighting and insufficient security precautions of the public transportation points in Konak Square, potential concealment and entrapment points also increase the level of fear of crime. On the other hand, considering the unstable users profile of the area (over-crowded or empty hours) it is obvious that, security precautions of Konak Square need special attention and they should have been considered in many aspects.

During the study, it has been considered that design as a tool does not always serve in one, and a positive way. It sometimes becomes a problem as itself. That is why, planning and design features of built environments should have been considered by thinking the positive as well as the negative impacts of design decisions on crime and fear of crime. To do that, in the light of the findings of this study CPTED principles have been analyzed and approved in many ways.

After analysing the results for each sub-area, it is possible to say that, although there are specific differences between crime records and fear of crime characteristics of these areas, some common consequences have also been found. For instance, the results of the questionnaire and the systematic observations have proved that there are many crime hot spots exist in Konak Square where people hesitate to be there to prevent them

from being a victim. The safety questionnaire has consistently reported that there are specific differences between recorded incidents of crime and the fear of crime of the respondents. For instance, in addition to the recorded crimes in the area, there are other types of crime and anti-social behaviour, such as; sexual or verbal harassment and vandalism, etc. In that case, users of Konak Square perceive their risk to be significantly higher and therefore people are discouraged from using the area, particularly at night.

Systematic observations have also proved that better design and well management of public spaces create a sense of ownership that not only encourage people to use these areas, but also increase the safety of them. On the other hand, uncertainty of ownership can reduce responsibility and increase the likelihood of crime and anti-social behaviour. As seen in the Konak Square case study, proper attention to the design quality and management of public places increases their safety and promotes greater respect towards the environment. In that case, it is crucial that involving users in the management and design of their area provides a real sense of ownership and this can be achieved in many ways, such as town centre management partnerships or regeneration programmes, etc.

Recommendations for Konak Square's Improvement:

Although, the recent design of Konak Square does not completely adjust to the principles of CPTED, it can be accepted as "developed" and "improved" considering the former design and conditions. That is why the area has been analyzed through the CPTED principles in order to find out the relationships between design of public places and occurrences of crime, as well as fear of crime.

The first specific finding is that, although the crime rate of entire Konak district has increased, the number of crime in Konak Square has decreased after redesign of the area. In this case, in order to clarify whether there are relationships between design of the built environment and crime or fear of crime, or not, users of Konak Square have been asked detailed questions about usage and design characteristics of the area. In the light of these responses, the characteristics of the study area have been determined including sub-areas which have been formed considering the results of the questionnaire and systematic observations.

As it is known, Konak Square is an over-crowded public space during day time, because of being an intersection point for public transportation, and having some official buildings, commercial places and shopping possibilities. This situation makes

the area more crowded and complicated than it should be. However, the area looks neglected and open to crime at night because of lack of activities. At that point, it must be considered that compatible mixed uses which make the area lively during night time, as well as daytime, encourage activity, informal surveillance, and contact among people that help to decrease their feelings of insecurity. Therefore, Konak Square should offer some activities which keep the area lively, particularly after dark. Providing that, it is possible to "put eyes on the place" at anytime of the day. Thus, conspicuous surveillance can be provided by the users of the area.

Considerable differences of the usage characteristics and frequency of the area also create security problems and increase the occurrence of crime and feelings of insecurity in the area. In order to prevent that, Konak Square should offer compatible activities which encourage people to use the area not only weekdays, but also at weekends.

People who live in cities could feel insecure no matter what their ages are. That is why, the needs of users - from children to adults and elder people - should always be considered in reducing crime and fear of crime by design studies for creating safer public places. In this case, it must be considered that although the needs of users show some similarities, they sometimes vary depending on their age groups. For instance; the needs of juveniles differentiate from the needs of elder people in the city. For this reason, changing activities and activity areas for different age groups should always be considered in order to attract and keep people in the area. Therefore, they help to reduce crime and fear of crime. It is crucial that, changing user needs and activity areas require specialized planning and design solutions which do not include crime hot spots (results from planning and design details) of public areas to create secure and livable public places.

On the other hand, police officers have explained that offenders sometimes behave like street vender in this area in order not to attract attention. Combining with poor lighting, this situation usually creates conflict in users mind and increases their feelings of insecurity. At that point, street vender must not be allowed to use the area to prevent this situation. Besides being an illegal activity, street vending also increases the insecurity in public places, as can be seen in the Konak Square example. This is why, street vending in Konak Square needs to be removed, or at least, these kinds of activities should be taken under control to make this area safer. To do that, they should obtain permit such as; newspaper stand, flower shops, small corner shops, etc. In this case, the

night time usage of the area should also be encouraged by providing compatible activities including; exhibitions, street concerts and theatres, etc. that encourage people to use the area after dark and provide natural surveillance.

However, providing compatible activities is not enough to make the area safer. In addition to the compatible activities, design features of the area must be adjustable depending on the changing characteristics of the Konak Square; including the weekdays-weekends and daytime-night time differences, as well. This flexibility should be considered in every design aspects including; lighting, signposting and furnishing, etc. In this case, it is crucial that, profile and densities of users show particular changes depending on the varied activities through the particular times and days in Konak Square. Considering these changes, design features of the area requires special attention in order to decrease the feeling of insecurity in this area.

At the beginning of the design process, it must be considered that the characteristics of public areas should be defined clearly in order to reach better results for safer places. For instance, considering public places like Konak Square, changing users profile and varied activities and their potential positive and negative effects on the safety issues should be considered, firstly. Then, design solutions must be realized through the characteristics of specific areas individually. After considering these issues, it is possible to use design decisions for improving safety of public areas. Otherwise, design features of the built environments may help to increase crime and fear of crime.

Observations have shown that poorly-lit sub areas in Konak Square, such as; pedestrian routes, around quay and potential concealment areas such as; public toilets, in and around subway, provide hiding chance for potential offenders and thus, increase fear of crime of the users. In addition, because of several pathways into and out of the area, there are potential escape routes for potential criminals. It is crucial that, criminal activities are more likely to occur if spaces are poorly designed which include some dangerous design details, such as above. However, these kinds of crime hot spots could be reduced by better design features. Therefore, it is possible to increase the safety and attractiveness of Konak Square by eliminating potential crime hot spots.

On the other hand, considering the changing user profile of the area (over-crowded or empty hours) it is obvious that security precautions of Konak Square should be considered in many aspects. For instance, depending on the varied usage and population characteristics of the area additional security precautions should be adaptable to increase the safety of the area.

Considering the systematic observations and results of the questionnaire, users usually visit this area if necessary and most of them do not prefer Konak Square for meeting their friends or for spending time because of insufficient furnishing and lack of activities, as well as fear of crime, which arises through the night. In this case, the area should have been provided by compatible activities, including; exhibitions, recreation facilities and meeting places, concerts, street theatres, etc. that keep people in the area and thus increase natural surveillance. It is obvious that, these kinds of activities not only make public areas lively, but also increase the sense of ownership, particularly combining with well-management. The Konak Square case study has proved that, proper attention to the design quality and management of the public places sends out positive messages and promotes greater respect towards the environment, and thus, increases its safety, as well. To do that, users of public places should be involved in the management and design process of their area. This not only provides a real sense of ownership, but also increases the feelings of security of the users.

Consequently, although the findings of the study support Crime Prevention through Environmental Design theory in many aspects and it also highlights the crucial importance of user perceptions in the design and management of built environment facilities, there are some missing points that need to be considered, as well. The study has shown that there are close relationships between crime and design features of the built environment. However, it must be considered that design of the built environment does not always serve in one, and a positive way. It sometimes creates a problem as itself. Therefore, planning and design features of the built environments should be considered by thinking the positive as well as the negative impacts of design decisions. As seen in the particular study, the variable characteristics of public places should be considered to create better design solutions which are easily adaptable depending on the circumstances. Combining with well management, adaptable design solutions will help to make a great improvement on the safety issues of these kinds of public spaces which have varied land-uses, user profiles and activities.

CHAPTER 5

CONCLUSION

Today, people experience crime or fear of crime and also feelings of insecurity in urban environments. Therefore, increasing attention is being paid to crime prevention. In that case, it must be considered that particular types of crime and fear of crime can be reduced by better planning, design and maintenance of the built environments.

Occurrence of crime and feelings of insecurity have very close relationships with design features of the built environments. It is crucial that, crime and anti-social behaviour are more likely to occur if design of the built environment is unsuccessful. At that point, in areas where opportunities for crime and fear of crime are high, environmental design play a crucial role in reducing opportunities for crime and improving safety in urban places, including; environmental planning, architecture and the design of products, as well. Therefore, urban planners, architects and industrial designers have begun to acknowledge the importance of crime prevention through design.

Unfortunately, in every major city, there are increasing rates of street crime and violence against persons. Crime Prevention through Environmental Design (CPTED) concept uses planning, design and management strategies to reduce the likelihood of crime incidents, as well as fear of crime. In other words, Crime Prevention through Environmental Design advocates that the proper design, use, and also management of the built environment lead to a decrease in crime and fear of crime, thus, improve the quality of life. Briefly, CPTED reduces crime opportunities by increasing the risk to potential offenders, and also increasing the effort required to commit crime. CPTED also requires planners, designers and police to work closely together on the ground in order to have great achievements. The important thing is that government and designers should always consider that combining with well-management, high standards of design give the impression of a place where crime or anti-social behaviour is not tolerated.

In this study, it has been aimed to examine the relationships between design of the built environment and crime, as well as fear of crime. As being the historical town square and a recently redesigned public space, Konak Square has been selected as a case

study area. At the same time, the selection of Konak Square depends on its different characteristics such as; being an area located in the geometrical centre of the city and also being one of the crucial intersection points of the city. In addition, Konak Square has complicated land-use characteristics and includes many incompatible activities that reduce the safety of the area. In this study, Konak Square has been analysed and criticized through the safety policies and crime prevention through environmental design (CPTED) principles. Finally, recommendations are made to reduce opportunities for crime and fear of crime in order to improve the safety of the area.

Unlike foreign countries, crime prevention through planning and design context has not been considered and integrated with the planning and design studies in Turkey. Considering the national literature, it is possible to say that, this particular study is the only example in Turkey with its scale and detailed analysis. In other words, although there are few studies and articles on crime in the national literature, they consider this subject in general context without getting into detailed data and spatial analysis. These studies mostly focus on crime mapping issues and they usually consider the whole city or district to demonstrate the changing crime levels, etc. However, none of them deal with design approaches that are crucial to increase safety in public places, even the whole city. In order to fill this vital gap, Konak Square case study has been considered through the principles of CPTED. Unlike other limited studies in national literature, this particular study considers crime prevention through the varied scales of analysis. It not only analyse the physical features of the area, but also tries to improve crime prevention based approaches via attracting attention of many disciplines and authorities, including local communities, planners, environmental designers, police, etc.

Considering the existing CPTED studies in the whole world, it is possible to say that, crime prevention studies mostly focus on the transportation areas, parks and neighbourhood areas. Empirical studies have also identified places as highly-risky crime areas including; transportation-linked areas where people feel vulnerable to crime and fear of crime include parking lots, bus stops, subways and the route to and from the bus stop; and pedestrian under-and overpass areas, etc. In addition, commercial streets and shopping areas also need special attention to ensure that users feel safe and secure. Because Konak Square includes many of these land-uses, as well as incompatible activities, improving safety is a crucial issue for this particular area. As one of the specific findings of this study, places like Konak Square that are not isolated and interact with its surrounding environment should be analysed considering the whole

land-uses and activities around. These considerations should also be reflected to the planning and design decisions of these particular areas to prevent crime and to decrease the feelings of insecurity.

Safer communities are defined as well-designed places where people feel safe and where crime or fear of crime does not undermine the quality of life. The Konak Square case study has shown that in order to create safer communities, as well as public places, every aspect from the planning policies to the design and maintenance of the built environment should be considered carefully. To do that, first of all, crime prevention studies should be integrated into the planning and design processes. It also requires local authorities to practice their functions regarding their likely effect on crime.

The recent design of Konak Square can be accepted as "developed" considering the former design and conditions of the area. As one of the specific findings of this study, although crime rate of entire Konak district has increased, the number of crime in Konak Square has decreased after redesign of the area. At that point, in order to clarify whether there are relationships between design of the spatial built environment and crime or not, users of Konak Square have been asked detailed questions about their use and thoughts on design characteristics of the area. The respondents have provided a rich source of data, including their personal safety concerns in and around the study area and the findings support Crime Prevention through Environmental Design theory in many aspects. It also highlights the significance of user perceptions in the design and management of the built environment facilities.

The characteristics of the study area have been determined through sub-areas which have been formed in the light of these responses, as well as systematic observations. Then, each sub-area has been analyzed through the following CPTED principles; lighting, sightlines, concealment and entrapment spots, surveillance and visibility by others, land use mix, activity generators and sense of ownership.

This particular study is concerned with the promotion of safe and attractive environments that meet the full set of planning and design objectives. In other words, the study has been aimed to emphasize how good planning and well-design of the built environment can contribute to crime prevention and the creation of safer and livable public places. In addition, Konak Square case study has explained how to create environments that people want to use by creating a positive sense of communal identity.

The study has also tried to encourage innovative, flexible thinking and effective working among the local planning authorities, designers and police. In that case, the principles need to be applied with careful thought by considering that there are no universally applicable solutions. Because similar problems lead to different responses in different public places, planning and environmental design's contributions to crime prevention must be based upon analysis of the local situation.

Konak Square case study has shown that environmental design decisions, particularly for highly- risky crime areas, must be made in full consultation and cooperation with all disciplines for creating safer public places. At that point, the important thing is to find out how design decisions of the built environment have an effect on safety of public places considering local situations. It is obvious that, understanding the local needs is essential for effective design solutions and therefore, this study is primarily concerned with solutions open to influence through good planning and environmental design.

Considering the foreign examples, many of public places are managed by the private partnerships. However, like all other public places in Turkey, Konak Square is managed by the local government. Therefore, local governments have an important role to play in order to prevent crime and fear of crime in public places of Turkey. Besides, local planning and design authorities must consider the likely effect on crime and disorder in their area while determining their planning policies and design decisions. Hovewer, because it is a hard process and requires great responsibilities, local governments should not been expected to hold this difficult job all alone. In that case, considering the examples in Turkey, co-operation between local governments and private partnership or management should also be recommended for highly-risky public areas to make them safer.

To do that, unlike most of the foreign examples, crime prevention strategies should be considered from the decision making process to the applications by the local governments. This situation not only increases the responsibilities of local governments but also reduces the possibilies to success. However, it must be considered that, sharing responsibilities with private partnership may help to increase the effectiveness of crime prevention studies in Turkey. As mentioned above, because each public place has its unique nature with its contents and surroundings, they have to be considered one by one for crime prevention studies to make them safer and livable. In other words, although there are common consequences for preventing crime and disorder in public places, the

needs and requirements show some differences for every single public place, as well. Therefore, each public area requires its detailed analysis and observations for crime prevention studies.

Through the study, the co-ordination with many disciplines from the local planning decisions to the design details of this particular area has been considered carefully in order to explain how planning and design decisions of public places affect the occurrences of crime and fear of crime in public places. It is also hoped that, this particular study developed a better understanding among many disciplines, which need to work together to produce safer communities. Then, considering the results of the study recommendations have also been made. In that case, it is crucial that, these recommendations are not special to this particular study, they can be considered for public spaces which have similar features with Konak Square. However, it must be considered that, although there are common consequences for public places that have similar features, there must be additional results and recommendations while considering the unique nature of each local communities and public areas.

This study has identified a number of questions and difficulties which are worthy for further studies. One of the specific difficulties for crime studies is to reach the data. Because it is difficult to obtain data about crime and safety in developing countries, there are very few studies on crime compared to developed countries. For instance; because there are no systematic records, data finding and collecting is a difficult process for crime prevention studies in Turkey. On the other hand, literature review has shown that crime prevention through design concept has not been taken into consideration in Turkey, as it needed to be. In that case, although there are limited studies on crime or crime prevention, there are no specific cases that focuse on crime prevention through environmental design context. The study has also clarified the urgent need to pay attention to the crime prevention studies and the significance of co-operations among local governments, planners, designers and police.

This particular study has also implied that planning and designing against crime also makes sense financially. It is obvious that, the costs involved in correcting or managing badly-designed development are much greater than getting it right in the first place. Therefore, crime prevention context should be considered at the beginning of any planning and design decisions for public places. At that point, the study has emphasized that, planners and environmental designers need to be aware of the crime risks of a

location and understand the effect of potential changes to the built environment before deciding on possible solutions.

Consequently, this study did find support for the causal relationship between the occurrence of crime, as well as fear of crime, and characteristics of the spatial built environments. In this regard, planning and design issues should be considered carefully for each specific example in order to create safer and livable cities.

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APPENDIX

SAFETY QUESTIONNAIRE OF KONAK SQUARE

A) <u>User's Profile</u>

1-Profession:
2- Age:
3-Gender: ( ) Man ( ) Woman
4-Education:
( ) Uneducated ( ) Primary sc. ( ) Junior high sc. ( ) High sc. ( ) University ( ) Master/PhD

B) <u>Transportation</u>

1-From where do you come to the area?
2- How do you reach to the area?
( ) on foot ( ) by bus ( ) by taxi ( ) by ferry ( ) by car ( ) by subway

C) <u>Usage of the Area</u>

1- Why do you come to the area?
( ) I work around here.
( ) I live here.
( ) I come to just walk around.
( ) I use this place to go somewhere else.
( ) Other

2- How frequently do you come to the area?
( ) first time ( ) everyday ( ) once in a week ( ) once in a month ( ) less than once in a month

3-When do you usually come to the area?
Weekdays : ( ) morning ( ) midday ( ) afternoon ( ) evening ( ) night
Weekend : ( ) morning ( ) midday ( ) afternoon ( ) evening ( ) night

4- Which season do you usually visit the area?
( ) spring ( ) autumn ( ) winter ( ) summer ( ) any season of the year

5- Do you usually come to the area alone or with somebody?
( ) alone ( ) with somebody ( ) both

D) <u>General Ideas</u>

1-What do you like most about the area?

2-What do you like least about the area?

3-Which 5 words best describe the area?

4-Do you feel safe in this area or do you worry about to experience any crime incidents in Konak Square?

( ) I feel safe.
( ) I don't feel safe.

5- If your answer is "I don't feel safe"; which of them you most worry about to experience?

( ) Pickpocketing ( ) Theft from the person (snatching)
( ) Wounding ( ) Other

6-When do you most worry about to experience any crime incidents?

Times: ( ) morning ( ) midday ( ) afternoon ( ) evening ( ) night

7- Where do you most worry about to experience any crime incidents?

.....
Why?

8- Can you pass time alone in Konak Square?

( ) I can pass time alone ( ) I can not pass time alone
Why?

E) Environmental Features

1-Do you think that the environmental features of the area is succesful?

( ) Yes ( ) No ( ) Undecided

2-What activities would you like to see added?

3- According to you, are there any problem activities which make the area unsafe?

( ) Yes. ( ) No.
Explain:

4-Do you think that the security precautions of the area are good enough?

( ) Yes ( ) No ( ) Undecided
Why?

5-Are there any <u>additional security precautions</u> that you want to see in this area?

( )Better design features (Lighting, street furniture etc.) ( )More police
( )Private security ( )Other

6-Do you think that lighting of the area is good enough to make this place safe?

( ) Yes ( ) No ( ) Undecided

7-Describe the impression of lighting;

( ) Very poor ( ) Poor ( ) Satisfactory ( ) Good ( ) Very good

8-Where could the lighting be improved?

9-Have you ever witnessed any kind of crime incidents in this area?

( ) Yes. ( ) No.
If your answer is "yes";
What kind of crime was it? Where did it happen?

10-Do you think that the redesign of Konak Square makes the area safer than before?

( ) Yes. ( ) No.

Why?

11-Do you have any specific recommendations about safety of the area?

VITA

Deniz Deniz was born and educated in İzmir. Having completed her undergraduate education in Dokuz Eylül University, she received master's degree from İzmir Institute of Technology, Department of Industrial Design with a thesis on "Sustainability and Environmental Issues in Industrial Design".

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