

## ARTICLE / ARAŞTIRMA

Perception of Safety within Intermediate Public Transportation Systems: The Case of *Minibüs*<sup>1</sup> in İstanbul*Ara Toplu Taşıma Sistemlerinde Güvenlik Algısı: İstanbul'da Minibüs Örneği*

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## ABSTRACT

*Minibüs*, as well as other intermediate public transportation systems, continue to be a much-neglected field of study in Turkey despite its significance in urban transportation. Having evolved in response to unmet needs of a growing urban population, *minibüs* provides a remarkable insight about an adventitious and informal urban culture. The uncertain and irregular nature of *minibüs*, as an intermediate public transportation system, generates fears and concerns about personal safety. Moving from a series of focus group studies conducted in January and February 2018, this paper claims that the examination of perception of safety of passengers is key to understanding the operation and the distinctive features of this specific intermediate public transportation system. Research findings indicate that the appearance of *minibüs* and the comfort of passengers are critical in people's perception of safety. As visual, audio and olfactory stimuli represent *minibüs* as a private enterprise, the passengers are torn between the conception of using a public transportation and being exposed a setting that intimidates them for the sake of a shorter or a cheaper ride. One crucial finding derived from the focus group study is that participants describe *minibüs* as a compulsion rather than a preference. It also became clear that they have adopted various tactics to facilitate their state of discomfort and fear such as getting off at far-out places or choosing a different time of the day for travel. However, these tactics pave the way for new vulnerabilities. It appears to be obvious that the flexibility, the size and the range of service provided by the *minibüs* have its own potentials and weaknesses. In a metropolitan city of a daily commuting volume of 32 million, it is important to learn from this informally developed system relying on a basic supply-demand chain. As it is, *minibüs* is an important research field to understand the needs of the passengers, limits of city's land use and transportation planning mechanisms. Arguably – as long as *minibüs* remains to a private establishment, efforts to overcome its weaknesses will remain frantic. However, its careful analysis can be an effective tool to improve the existing formal public transportation.

**Keywords:** Intermediate public transportation; perception of safety; minibüs; İstanbul; public transportation.

## ÖZ

Kentsel taşımacılıkta önemli bir yeri olmasına rağmen minibüs ve ara toplu taşıma sistemleri Türk yazınında yeterince yer bulamamıştır. İhtiyaçları karşılan(a)mayan ve hızla büyüyen kentsel nüfusun ihtiyaçlarına cevap olarak ortaya çıkan minibüs taşımacılığı, kendiliğinden ve enformel gelişen bir kent kültürüne de ışık tutması açısından önemlidir. Doğası gereği belirsizlik ve kuralsızlığın etkin olduğu minibüs taşımacılığı kişisel güvenlik ile ilgili kaygı ve korkuları artırıcı etkiye sahiptir. Bu makale, Ocak ve Şubat 2018'de gerçekleştirilen odak grup çalışmalarında elde edilen veriler ışığında güvenlik algısı ve güvenlik algısını etkileyen etmenleri ortaya çıkarmayı hedeflemektedir. Bu çalışma güvenlik algısının; bir sistemin nasıl çalıştığının ve özgün niteliklerinin anlaşılması için anahtar nitelikte olduğunu savunmaktadır. Çalışma bulguları, görünümlü ve konforun güvenlik algısını etkileyen önemli faktörler olduğunu ortaya koymuştur. Görsel, işitsel ve kokusal uyarılar minibüsün özel bir işletme olduğunu vurgular nitelikte olduğundan yolcular minibüste, bir toplu taşıma sisteminde özel mekan kurgusuna maruz kalmakta, bu da güvenlik algılarını olumsuz etkilemektedir. Çalışmadan elde edilen bir önemli bulgu da katılımcıların minibüs taşımacılığını tercih değil mecburiyet olarak tarif etmeleri ile ilgilidir. Odak grup tartışmalarının açık bir şekilde ortaya koyduğu üzere katılımcılar kendi korku ve rahatsızlıklarını hafifletebilmek için stratejik taktikler geliştirmekte, yolculukları ile ilgili hal ve tavırlarını; inmesi gereken durakta inmemek, seyahat zamanlamasını değiştirmek gibi güvenlikle ilgili yeni kırılma noktaları geliştirmelerine sebep olan belirli değişiklikler yaparak modifiye etmektedirler. Esneklik, büyüklük ve sunduğu hizmet açısından değerlendirildiğinde minibüs taşımacılığının potansiyelleri olduğu kadar zayıf yönleri de bulunmaktadır. 32 milyon günlük yolculuk hacmi olan metropoliten bir şehirde, basit bir arz-talep dengesine dayalı olarak gelişmiş enformel bir sistemin dinamiklerini anlamak önemlidir. Minibüs taşımacılığı, yolcu taleplerini, kentin mekânsal sınırlılıklarını ve ulaşım planlaması mekanizmalarını anlamak için önemli bir araştırma sahasıdır. Minibüs taşımacılığının iyileştirilmesine yönelik çalışmalar verimli olmayacaktır; ancak bu sistemin derinlemesine bir analizinin yapılması, mevcut toplu taşıma sistemlerinin geliştirilmesi için bir araç olma potansiyeli taşımaktadır.

**Anahtar sözcükler:** Ara toplu taşıma; güvenlik algısı; minibüs; İstanbul; toplu taşıma.

<sup>1</sup> For the sake of avoiding the loss of meaning, throughout the text the transportation means, the system and the vehicle has been referred as *minibüs*, as this word in Turkish carries stronger connotations than a bare translated word *minibus*.

## I. Introduction

Participant 3–03: “[in]my late-night travels... the discomfort I experience not as a passenger but as a female passenger... Although it is not an open harassment, when I hand on my fare, it bothers and tenses me that they call out<sup>2</sup> “The fare of the lady! The fare of the sister!<sup>3</sup>”. Harassment does not have to be physical. This is also harassment. Getting in as a female passenger, I attract everyone’s attention, and this is not something to be experienced in a bus. ... I can see why such a *kahvehane*<sup>4</sup> atmosphere emerges in the *minibüs*.”

Fear and concerns about personal safety determines travel preferences of passengers (Loukaitou-Sideris and Fink, 2009). Preferences of travel routes and stops for certain time intervals are critical for transportation planning for passengers as well as decision makers. Taking measures to eliminate or reduce concerns on passenger safety is expected to improve the daily temporal distribution of the demand for public transport. On that regard, reducing the number of passengers using private cars on certain routes and during specific time intervals due to security concerns, increasing the freedom of travel preference for non-car owners as well as for non-car-prefering passengers should be among the policy goals of every city.

Recent evidence from studies on safety and security suggest that design and perceptual characteristics of the public space play an important role in setting a sense of safety for people. My experience of working with migrant women has driven this research on public transportation, an important anchor to get connected to urban life. Why and how people feel safe in these systems display how the systems operate. Due to its irregular nature, intermediate public transportation -the unconventional, informally developed public transportation- in Turkey raises fears and concerns about personal safety.

On a general level, informal systems complement existing formal systems, especially when emerging demands due to changes in the social and urban structures cannot be met by formal ways. The officials often temporarily tolerate the informal solutions, if not completely overlooked. This study focuses on the features of *minibüs* in İstanbul as a form of intermediate public transportation that gets a substantial share

from public transportation; with a purpose to grasp insight on urban informal cultures complementary to formal urban mechanisms. It is crucial how such an intermediate public transportation element integrates with the formal transportation network and why it receives such demand despite all its un-reliabilities and weaknesses in terms of safety and security. With such point of view, this research claims that perception of safety and security plays a key role in finding solutions to existing problems of the interwoven urban mechanisms of formality and informality.

This study is built on a series of focus group studies conducted in January and February 2018. This article discusses the findings of these studies. The work presented here provides one of the first investigations on the issue with an intention to pave way for further scientific research on intermediate public transportation systems, which reveal insights of urban culture as well as urban development mechanisms. A wide range of fields from urban planning to public administration has been interested in informal urban settlements and the informal development of urban economy. I regard the way informal systems interweave with the formal system in Turkey to have similar underlying factors, be it *gecekondu*<sup>5</sup> or informal businesses. That is to say, scrutinizing one particular form of informality may reveal a lot about others.

The article first reviews literature on safety, security, urban crime and perception and later examines *minibüs* as an intermediate public transportation system. The research method includes the design of the focus group study and an analysis of participants’ profile. After the interpretation of the findings, the study aims to drive conclusions that may provide means to comprehend informal urban cultures.

## 2. Safety, Security, Crime, and Perception

Fear of crime is considered as one of the most important criteria in terms of urban living quality. It relies on how safe people feel, how satisfied they are with the services provided by the security units, and whether security measures are adequate. Ferraro (1995) describes fear of crime as “an emotional reaction characterized by a sense of danger and anxiety generated by the symbols that one associates with crime”. Personal experiences are a mutual product of memories in relation to a specific place or of personal perception about vulnerability to victimization (Koskela, 1997: 304).

<sup>2</sup> It is important to note the pick-up system of the fare in a *minibüs*. The passenger directly reaches out the fare as cash to the driver and gets the change back. If the driver is not within accessible reach, the passenger may ask other passengers to pass on the fare for him/her. As the fare is not constant for the whole ride, passengers need to pay the fare by calling out their destination stop. While doing this, there might be more than one passenger handing on the fare, so spontaneously and instantly the cash which is being handed on gets labelled by (1) the amount of the banknote (such as “Change of 100 TL”, “Change of 50 TL”, etc.), (2) the name of the destination (such as “Change of Kadıköy”, “Change of Bostancı” etc.), (3) a characteristic feature of the passenger, as in the case of the participant’s narrative.

<sup>3</sup> Here, in the Turkish narrative the participant was referring to callings of co-passengers as “*Bayanın ücreti! Ablanın ücreti!*” Paratransit systems are so culturally indigenous that bare translations lose a lot of sub textual meaning, as shown by focus group study narratives. Therefore, some wordings such as *minibüs* have not been translated.

<sup>4</sup> A neighborhood scale coffee shop, which only appeals to men of the neighborhood and is a very dominant patriarchal character.

<sup>5</sup> Shanty houses in Turkey.

**Table 1.** Public road transportation statistics

Transportation type	Average capacity	Registered routes	Registered vehicles	Passengers (*1.000/day)	Share in road trans.
Bus	107	436	2.781	1.431	19%
Private public bus	99	274	2.075	1.475	20%
<i>Minibüs</i>	20	121	6.360	1.850	24%
<i>Metrobüs</i>	193	3	334	715	10%
<i>Dolmuş</i>	9	26	590	70	1%
Service shuttles	14–20	N.A.	43.000	1.950	26%
Total		860	55.140	7.491	100%

İETT, Directorate of Public Transportation Services, 2010.

The important feature of fear of crime is the lack of a mathematical formula based on an actual risk. Fear of crime and actual crime cases are quantitatively and qualitatively different from each other. While fear of crime increases with the crime rates, it is proved that the opposite is not correct; a decrease in crime rates may not necessarily eliminate the fear of crime (Dolu et al., 2010). Studies show that people's travel preferences and their everyday life mobility are dominantly influenced by fear of crime, but not by actual crime rates (Bannister & Fyfe, 2001; Hale 1996). Fear of crime is a serious issue that causes negative effects on individuals such as withdrawal from society, introversion, and alienation (Blöbaum & Hunecke, 2005). Fear and anxiety in public space reduce the level of satisfaction that urban residents will experience in restricting the freedom of mobility, eliminating the possibility of enjoyment of the city's offerings. The factor influencing the length of routes and frequency of travel are directly related to security concerns and perception of safety (Oğuz, 2015).

### 3. *Minibüs* as an Intermediate Public Transportation System/Is there Place for Safety?

After 1960s, as an outcome of the rapid and mal-, un-planned industrialization prospects of Turkey, a massive migration from rural to urban areas caused the emergence of *gecekondu* areas. Local authorities could not meet newly emerging demands of the urban population, failing to deliver necessary infrastructure. Commuting to and from workplaces was one of the major obstacles that the *gecekondu* residents were facing. The lack of means gave rise to a brand-new way(s) of ridesharing. Just as *dolmuş*, *minibüs* started as an answer to the need for minimizing transportation costs (Tekeli & Okyay, 1980; *Dolmuş Nasıl Doğdu*, 1974). It was a two-way gain on people's side: (1) *gecekondu* residents have found a way to commute within the city and (2) a new urban (informal) economic activity was established.

As the city continued spreading and sprawling, local governments were even less capable of creating solutions for the

service needs of the informal settlers. Thus, *minibüs* got integrated into the formal public transportation as a support mechanism. Today as İstanbul's population reaches over 15 million, *minibüs* as an informal ride continues leading to disorder and irregularity with its unpredictable and malfunctioning structure.

According to data of İETT (2017) the daily travel capacity of İstanbul is about 32 million. BELBİM data reveals excluding weekends and holidays, the modal distribution of public transportation trips in İstanbul is sea transportation 3%, railway transportation 25%, and road transportation 72% (İETT, 2017). Among all the other road transportation means such as bus, *metrobüs*, private 'public buses' [*Özel Halk Otobüsleri*], taxis, and service shuttles; *minibüs* constitutes an integral part of the road public transportation, which takes 24% of all road travels in the city (Table 1).

The map below (Figure 1) shows the extension and sprawl of the *minibüs* routes throughout the city. According to 2010 figures of İETT, there are 6.360 *minibüs* operating and 124 registered *minibüs* routes in İstanbul. *Minibüs* can be categorized as a dominant public transportation phenomenon and therefore requires specific attention for research and study.

In their research on *dolmuş*, which resembles to and even paves the way for the evolution of *minibüs*, Tekeli and Okyay (1980) are pointing out to some features distinguishing intermediate public transportation from formal public transportation systems (pp. 8–9):

1. It is a vehicle, where passengers get on one by one, and which takes off when it is full.<sup>6</sup>
2. Departure of this public transportation system is not pre-arranged and is not bound to a schedule.
3. Transportation service supplied can be adapted to immediate travel demands.
4. It is a form of transportation management allowing people to purchase the provided transportation service collec-

<sup>6</sup> In Turkish *dolmuş* means "full" or "filled".



Figure 1. Minibüs routes in İstanbul.<sup>7</sup>

5. It is a micro-entrepreneurship. It originates employment opportunity having the characteristics of marginal economy.
6. Mostly it is designed to perform another form of logistics yet being adapted for *minibüs* type of service conditions sui generis.
7. It is an extremely crowded transportation vehicle, which carries passengers over its loading capacity.
8. It is a transportation system operated by small vehicles.
9. It operates in parallel with public transportation systems and provides an alternative to it.
10. It is an operating system, which is not peculiar to a specific transportation form (automobile, boat, etc.).

When public transportation systems are evaluated in respect to criteria on safety perception, it is observed that the daily public space interaction and cases in which people experience feeling “trapped” are higher in intermediate public transportation vehicles, as the distinction between private and public spaces in the in *minibüs* become ambiguous (Çelikoğlu & Çelikoğlu, 2012). The “security deficit” perception based on the feelings of vulnerability triggers fear of crime in public transportation (Jonston, 2001). That is to say, semi-enclosed public transportation, which are in the controlling hands of a “stranger” such as a *minibüs* driver, constitute a serious problem in terms of security perception. Compared to publicly

operated and controlled public transportation, the fact that the control is in the hands of a “public” authority ensures that the sense of vulnerability to this semi-closed situation remains at a more acceptable level.

By its very nature, *minibüs* stops are flexible and based on demand. Furthermore, in times of heavy traffic, even the routes can be altered slightly because of inter-vehicle rivalry. The *minibüs* passengers are subject to a deliberate transfer of rights via vehicle’s interior design, music, interior lightning, the driver’s route and the frequency of vehicles etc. In addition to the changes that can be made about the stops and the route, the familiarity level about this public transportation is lower compared to other public transportation systems such as a public bus or metro, where passengers feel more familiar because of a standardized interior design of such vehicles. Likewise, different model vehicles are modified and used by different drivers in different ways. Each ride is an adventure for *minibüs* passengers, as they cannot get a clue on what to do in an emergency; how will they exit, enter, take a seat, or even open a window on a hot summer’s day.

#### 4. Method

Academic literature on safety perception in intermediate public transportation systems in Turkey is inadequate. Besides

<sup>7</sup> This map was provided by Superpool.org. Research assistants has amended the route map according to the needs of this study.

*Dolmuşun Öyküsü* published in 1980's by Tekeli and Okay, there is another study by Sanlı investigating *dolmuş* and *minibüs* as low-cost transportation systems. There is no recent thorough investigation on the issue conducted in the field of urban planning or sociology but the two; on objects within *minibüs* using semantics as methodology by Cengiz (2013) and Çelikoğlu and Çelikoğlu (2012). There is a graduate thesis on evolution of intermediate public transportation systems and its implementation in Turkey by Özkurt (2012), which deserves a compliment as an attempt for an in-depth scrutinization, however it fails to coin new questions for further study.

On the other hand, literature on safety and transportation appears to be vast. However, their focus is either on crime problems on public transportation in general or on ways to reduce crime via specific planning and design interventions (see e.g. Kruger & Landman, 2007; Benjamin et al., 1994). There are studies focusing on vulnerability towards crime and/or perception of safety in public transportation taking gender or different age groups as the center of attraction (see e.g. Curie et al., 2013; Loukaitou-Sideris, 2009, 2014; Bhatt et al., 2015; Yavuz & Welch, 2010; Church et al., 2000). Another sub-cluster among transportation and crime studies concentrate on one transportation means such as the railway or bus (see e.g. Ingalls et al., 1994).

There is also a wide range of international research on paratransit, informal, and intermediate public transportation (see e.g. Cervero & Golub, 2007); however the level of informality and illegality changes in each context depending on parameters such as legalization processes, integration with the formal public transportation, ownership and licensing, regulations, etc. With such concern, this study aims to develop a parameter structure based on a qualitative analysis moving from a series of focus group studies focus group studies. The desire of this research is to explore the perception of safety and security problems on the part of those parties involved in the operation of *minibüs* (even as a non-user) from the perspective of civil participants.

The studies providing the basis of this paper have been designed to contribute beneficial information as an early stage of a research expedition. The author of this paper is developing a proposal for a continued research through employing additional methods and covering a more extended research field. Focus group studies, as the adopted method for this preliminary stage of research, have been employed to be explanatory to identify key areas for further studies, which will be complemented by in-depth interviews, surveys, observations, mappings as well as simulations based on the initial findings of focus group discussions. This paper will first discuss



**Figure 2.** Focus group studies.

the formation of the groups and the initial findings in order to present an infrastructure for a scientific research project on intermediate public transportation systems of İstanbul.

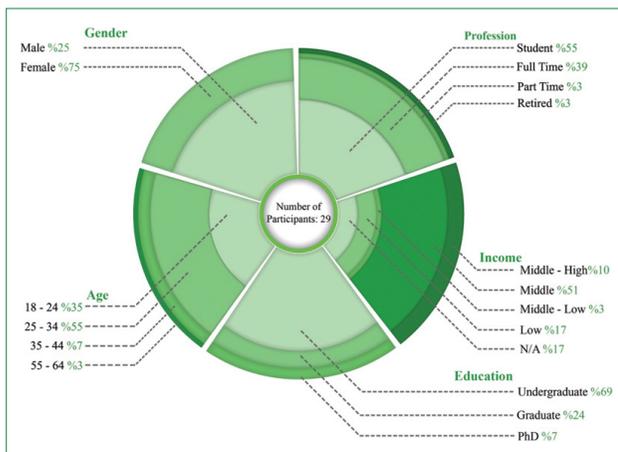
Careful selection of group participants is crucial for the efficiency of focus group studies (Krueger, 1998). For this reason, the focus group study has been conducted in cooperation with Tasarım Atölyesi Kadıköy (TAK)<sup>8</sup> to ensure the diversity of participants in a neutral environment. The announcement of the focus group study series and calls for participants has been broadcasted via TAK's social media accounts and an interview given to the local newspaper *Gazete Kadıköy*.<sup>9</sup>

Krueger (1998) describes the ideal group size for a focus group study as six to eight people. Based on this assertion, each focus group study was designed as a workshop conducted on three consecutive weekends (20 January 2018, 27 January 2018, 4 February 2018) (Figure 2). Designing the focus group study in conjoint with a seminar intended to control the sizes of the groups, as the pre-registration was not mandatory. First, the participants attended an hour-long seminar on intermediate public transportation and security perception. Then those who wanted to participate in the focus group joined a round table discussion. Each focus group study lasted around 1,5 hours.

Utmost care has been taken to ensure that meetings were held in a comfortable environment. Participants were served tea, coffee, water and some snacks during the break. Snacks were left on the table, so participants could help themselves during discussions. Participants were encouraged to express themselves anyway they feel convenient, and they were ensured that their anonymity will be respected. Video and audio recordings were taken later to be transcribed for an analysis

<sup>8</sup> TAK, an independent organization, is an innovation space welcoming citizens, designers, volunteers, and students to establish national and international collaborations to create ideas, products, programs and projects, which are based on volunteering and collaboration of a variety of designers from different disciplines.

<sup>9</sup> Oğuz, M. (2018, January 4). İstanbullu Ulaşmak İstiyor. (E. Demirtaş, Interviewer).



**Figure 3.** Participants' distribution by age, education and income levels.

of the findings. Memos taken during focus group studies by the group moderator and study assistants were also evaluated complementing the transcriptions of the recorded material.

Each participant was given a number to protect the anonymity of the participants during the focus group work. As an introduction to the focus group study, the participants filled in a basic form indicating their age, sex, income and education level as well as their weekly travel routines.<sup>10</sup> The age, gender, and education level distribution of participants can be seen on Figure 3.

The total number of participants of three focus groups is 29, 75% of which are female. Examining the profile of the focus group study participants, this paper should be read as an attempt to understand major concerns and key points about perception of safety about *minibüs*, bearing in mind that the profile of the group does not allow any generalizations or theorization of the findings.

First, research on transportation indicate that women tend to use public transportation more than men do (Rosenbloom, 2006). This information accords with the motives behind people's motives to take part in the focus group study as the majority of the participants were female. However, it should be noted that this may also be a result of the title, as it includes "perception of safety". Yavuz and Welch (2010) show that experiencing safety-related problems affects women significantly more than it does men. Women's experiences of various forms of assault and harassment makes them perceive risk more often than men, causing them to be more sensitive and feel more vulnerable (Pain, 1995; Painter, 1992; Warr, 1984; Loewen et al., 1993). Thus, it is not surprising for women to show more interest in participating such a study, to keep up with prospective results more and to hope more for a posi-

tive change in transportation systems than men do, since they would feel more secure and comfortable as passengers.

Second, the majority of participants were between the ages of 18–34. In parallel to this age distribution, 55% of the participants declared themselves as university students, which is also another limitation for the interpretation of the focus group study outcomes. Beyazit (2017) states that the age group between 19–45 travel more compared to other age groups. The author is fully aware of the fact that the results of the focus group discussions are not descriptive but explanatory, and they do not have a representative character. Although there is no solid data about the age distribution of public transportation users, careful observation exposes that younger people are more dominant within public transportation vehicles, especially during rush hours within crowded lines. In İstanbul, where daily commuting statistics are about 32 million (as of 2016), getting on a vehicle requires physical and mental performance. As the results of the study show, the purpose of the participants' daily commuting is work or education related, and their travel experience is "compulsory rather than optional". Their higher level of exposure to the problems of public transportation for longer hours explains why they express deeper interest in participating the focus group study sessions.

Third, most of the participants identified themselves as a member of middle-income class.<sup>11</sup> This may indicate that middle-income groups have more hope for changing current problematic situations and thereby participate to make their voices heard. The fact that the study took place in Kadıköy, where 69% of the population belong to A+B socio-economic group (<https://www.endeksa.com>) may also be an important criterion in the income level distribution of focus group study participants. In parallel to that, it is important to note that 69% of focus group study participants are either pursuing an undergraduate level study or have graduated from university. Beyazit's study (2017) on randomly selected travel journals reveals that students spend longer travel times. It is also important to note that *minibüs* and *dolmuş* as forms of intermediate public transportation has been part of and accepted by middle-income groups from the day it has entered İstanbul's urban agenda (Tekeli & Okyay, 1980).

Owing to the limitations mentioned above, generalizations are avoided in the comments, and all assessments made in this paper should be read within the scope and constraints of the research. Not being able to compare the target population of public transportation passengers in İstanbul with the profile of this study is a shortcoming, but not as much as for the official planning of public transportation programs of the city. This is both the cause and effect of the state of Turkish

<sup>10</sup> Any information is being kept confidential by the researchers and is only used for fully evaluation of qualitative data.

<sup>11</sup> The research did not involve any crosscheck of the economic status of the participants and relied solely on their indications.

public transportation mechanisms, where formal public transportation is integrated with the informal public transportation. It is almost impossible to collect data about the profile of transport means such as *minibüs*, as the fares are paid in cash and directly to the driver with no return of a receipt nor a ticket. On the other hand, the formal public system, where the passengers travel with a top-up card, *İstanbulkart*, does not fully allow to distinguish the profile of the passengers, as the possession of the card does not require personal information, unless for reduced fares for students, teachers, seniors or the retired as well as monthly passes to which one has to register with identification. Even then, the card system does not allow an origin-destination analysis, as the validation of the card is only required on the origin card reading machine.

Having noticed and being aware of all the above-mentioned issues, the analysis of the focus group study discussion shed light to multiple aspects of perception of safety within intermediate public transportation systems. Just a brief exploration for a data set to make an analysis of the public transportation passengers' profile, it is clear that further datamining is necessary, for instance using methods such as image recognition. The focus group discussions were built on six sub-headings, Table 2 shows the sub-headings and the detailed discussion topics.

## 5. Findings

### 5.1 About Appearance and Comfort

According to the findings of the focus group studies, appearance and comfort of the *minibüs* stand out as relative parameters that directly influence the perception of safety both among riders and non-riders. Most of the transit systems have established standards for transit facility appearance and cleanliness sustained by inspection programs. Appearance of formal public transportation vehicles and stations are usually defined -sometimes even voted and selected by the local citizens- by local legislations and directives, thereby making the vehicles be known to the local users and citizens. Even after a foreigner noticed and distinguished the localized specific signs and labels of the public transportation and vehicles, the signs and labels can be acknowledged easily by foreigners. Yet, intermediate public transportation vehicles have a certain amount of customized design both on the inside and out, despite all efforts of local authorities to unify and moderate the appearance of the vehicles as well as defining the stops.

The *Minibüs* Transportation Directive (İstanbul Büyükşehir Belediyesi, 2018) effective from 2008 defines the colors of

**Table 2.** Focus group study topics

Sub-heading	Discussion topics
Waiting for the <i>minibüs</i>	<ul style="list-style-type: none"> <li>• Conditions of stops</li> <li>• Behavior of other passengers/people</li> <li>• Existence of alike passengers/people</li> </ul>
Within the <i>minibüs</i>	<ul style="list-style-type: none"> <li>• Design of the minibüs</li> <li>• Driver's appearance</li> <li>• Behavior of other passengers</li> </ul>
During travel	<ul style="list-style-type: none"> <li>• Perception about self-protection</li> <li>• Perception about driver</li> <li>• Perception about other passengers</li> <li>• Possibility of escaping/exiting</li> </ul>
Malfunctions of <i>minibüs</i>	<ul style="list-style-type: none"> <li>• Reliability</li> <li>• Measures of safety</li> </ul>
Smart technology	<ul style="list-style-type: none"> <li>• Engagement with smart devices</li> <li>• Isolation/protection</li> <li>• Following the route/GPS – enablers</li> <li>• Perception of security</li> </ul>
Source of information	<ul style="list-style-type: none"> <li>• Perception/Actualization</li> </ul>

*minibüs* in İstanbul clearly as follows based on the operational regions:

- Region A (European side): Cream
- Region B (Beyoğlu): Light green
- Region C (Asian side): Light blue

The shades of colors are to be determined with the Chamber of *Minibüs* Drivers and *minibüs* are to be painted exactly to the determined color tone according to the directive. They are also recognizable by their license plates which contain (M) or (TM) initials<sup>12</sup> and these license plates have to be obtained from the Directorate of Public Transportation Services<sup>13</sup> of the Great Municipality of İstanbul. Within the scope of the same directive, the standards of the informative labels about the route of the *minibüs* are indicated. It is precisely specified that “No air horn, television, radio-tape, airplay devices, etc. are allowed within the *minibüs* except accessories mentioned in the directive and those as factory defaults” (Article 12/f). Nevertheless, it is common for the *minibüs* drivers and owners to decorate the vehicles according to their taste, using various ornaments and accessories such as toys, pictures, lighting, etc. As the vehicle is owned privately, the drivers and owners see nothing wrong in reflecting their own tastes in the interior and in the outer look of the vehicles. The decoration of *minibüs* does not only include visual ornaments, but also audio and olfactive elements.

<sup>12</sup> Turkish license plates start with a 2-digit number, each number referring to the city, where the vehicle is registered. “34” is the registration number for İstanbul. This number is followed by 1–3 initials. Certain vehicles such as taxis, public transportation vehicles, or military vehicles use pre-determined initials, which also makes them recognizable within the traffic. For minibuses in İstanbul these are determined as M and TM. Then these initials are followed by 1–4-digit numbers, which are given by the registration authorities.

<sup>13</sup> Toplu Taşıma Hizmetleri Müdürlüğü.

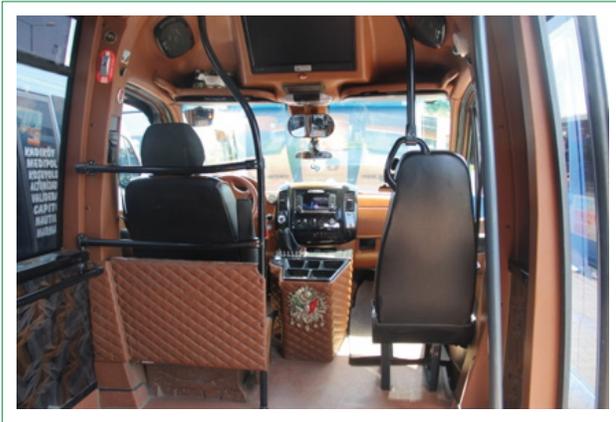


Figure 4. Interior decoration of a *minibüs*.

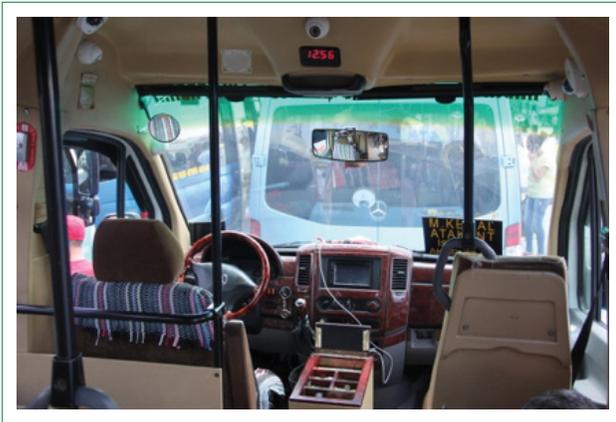


Figure 5. Interior ornaments of a *minibüs*.

The *minibüs* is not simply a vehicle for drivers through which they carry passengers on a specified route to earn a living. As drivers spend most of their days in their *minibüs*, the vehicle gains a home-like characteristic, just as a local shop would for a local shopkeeper. It is easy to notice that most of the drivers try to customize their *minibüs* using various objects – including prayer beads, CDs, aphorisms written on signboards, tulle curtains, colored lightings, etc. (Çelikoğlu & Çelikoğlu, 2012). These ornaments may hang on gear levers, rear view mirrors, windshields or rear windows of *minibüs* (Figure 4, 5).

The customization of the vehicle can also be seen in the colors of the *minibüs*. To the contrary of the *Minibüs* Transportation Directive's liabilities, the shades of the *minibüs* markedly vary from each other (Figure 6). This way vehicles become a medium of self-expression for drivers.

In his article, where he evaluates the objects, accessories, and writings inside and outside the *minibüs* as parts of material culture, Cengiz (2013) argues “accessories and modified objects target to demonstrate *minibüs* to be stronger, harder, and more different; *minibüs* give the impression sometimes of being a fast and furious sports car and sometimes a strong and



Figure 6. Varying shades of colors of *minibüs*.

heavy truck able to run over who- and/or what-ever comes its way. In-vehicle televisions, which actually are not built in for drivers' enjoyment, music systems and loudspeakers seem to enhance the quality of *minibüs* and suggest that the vehicle is technologically sophisticated.” While the customization of *minibüs* reflects the drivers' identities, it may weaken safety perceptions. Over-customization and “making-home” is not welcomed by public passengers. For the perception of safety, familiarity provided by the standardization of interior design and outer look of public transportation vehicles is an essential parameter. Stepping into a world of a stranger, the driver or the owner of the *minibüs* in this circumstance, constitutes a barrier between the passenger and the feeling of comfort. Some of the emphasis made by the focus group study participants on the appearance and comfort within the *minibüs* confirms the significance of standardization.

Participant I–10: “... In terms of appearance, some of them are vividly illuminated; they resemble nightclubs. It really feels weird. Besides, sometimes, especially during later hours there is too much music and I really feel like I am in a club... If I am traveling alone, I do not



Figure 7. Different organization of seats.

feel secure regardless of the nightclub appearance. To make matters worse, if I enter such an environment, then my subconscious says that it is not safe here.”

Participant I-08: “... Who are we afraid of, against whom do we feel insecure? Against strangers. We do not have a trust issue against those we are acquainted. At least, I do not, I overcome this trust problem. Thus, I feel that this feeling of insecurity is related with physical appearance.”

The appearance and the physical environments of transit vehicles are usually related with the broken windows theory, according to which people feel unsafe when the physical environment reflects non-attendance or non-maintenance (Nasar & Fisher, 1993; Coens, Saville, & Hillier, 2005). Yet, in the case of *minibüs*, the feeling of insecurity is not related to the physical and social incivilities that the vehicles exhibit, but to their over-personalization. The discomfort mentioned by the participants is pertained to the low level of publicness of the environment, although the environment carries all the usual parameters of publicness such as being

surrounded by strangers, non-ownership of the vehicle and having no control of the ride, etc.

Apart from the idea of familiarity, passengers also prefer to ride in comfort, which directly includes the seats; yet the will to have a different design also determines the form of the seats (Figure 7). The arrangement of the seats is subject to customization besides the differences of the vehicles due to their brand and model. Passengers do not know and cannot foresee what to expect from the interior space, e.g. a passenger with a luggage or pushchair cannot emancipate where to find an appropriate place for their belongings. Stopping a *minibüs* and then not deciding to step into it because of not being able to find an appropriate place can easily be a reason for a battle of words with the driver and/or other passengers. It is understandable that people try to avoid such situations by choosing not to take the *minibüs* either for that ride or not at all (Oğuz, 2015).

Apart from the interior design and outer look of the vehicles, the appearance of the driver also determines the perception of safety. In public transportation vehicles, passengers are not engaged with the driver at all, and therefore usually do not even notice the drivers' appearances. The

public transportation drivers' appearance and uniforms reflect a certain level of reliability and institutionalization. Passengers getting into visual contact with the driver feel that there is an authority or someone in charge who represents a higher institution. A UK study shows that the existence of the driver within eye level and the thought that the driver can intervene any time in case of need (as an opposition to e.g. train wagons where the conductor cannot be seen and be accessed) is a positive stimulator for the perception of safety (Carter, 2005).

Unlike formal transportation, the focus group study participants were hesitant whether or not they would feel safer with the driver in an emergency situation in a *minibüs*. Some of the participants clearly mentioned that they would not trust the driver at all and rather try to escape the vehicle. As *minibüs* is smaller compared to other land route transportation means, establishing contact with the driver is essential to the ride. The contact starts by waving a hand to the driver to stop the *minibüs* since they stop by demand rather than in pre-destined stations. The driver only takes cash money, unlike in other means of transportation. That is to say, *minibüs* is not integrated with the public transportation card system that allows passengers to get discounts by every additional transfer. Contact with *minibüs* drivers is somehow encouraged through cultural and social codes, which gradually emerged along with the development of the *minibüs* as a public transportation means. Kalpakçı (2013) mentions in her study, where she investigates the integration of intermediate public transportation systems with public bus system in Izmir, that *minibüs* has to be designed in a facilitating way for the driver to collect fares. Because contact with the driver is inescapable, passengers are more likely to notice personal features of the driver, which may endanger the perception of safety.

Participant I-07: "When *minibüs* are mentioned, I am reminded of an unpleasant and rude outlook; and also, the look of the *minibüs* driver -which is obvious. Most of them are rude, bearded, fat, and macho. I visualize directly such an appearance; one cannot feel safe."

The driver's and the vehicle's appearance contains a two-way self-expression; the driver identifies himself<sup>14</sup> with his *minibüs* and tries to reflect if not re-define his the vehicle itself. The *minibüs* with all these aforementioned features is more like a mobile domestic space in which passengers subconsciously have to accept the driver's authority. Thus, the vehicle loses its neutrality as a public transportation means, which in return becomes an important obstacle for the perception of safety of the passengers.

<sup>14</sup> The minibüs is a masculine space, which is driven by a man, who stresses and underlines his masculinity through objects, ornaments, decoration and his behavior and outlook.

## 5.2. State of Fear: Modifications in Attitudes and Behaviors

Fear of crime is extensively recognized as a barrier in public transport use (Crime Concern, 2002). There are various definitions of fear of crime. This study takes fear as a combination of conditions within the public space that passengers have no ability to control; in other words, where and when they feel vulnerable (Farrall et al., 1997; Killias & Clerici, 2000; Johnston, 2001; Crime Concern, 2002). Studies on gender and public transportation have shown that women's fear of public space limits their freedom and enjoyment of public life and restricts their ability to benefit from opportunities more than men's (Deegan, 1987; Day et al., 2003; Loukaitou-Sideris, 2005). There is little understanding on the fear men experience, in terms of its cause as well as ways to improve their perception of safety (Yavuz & Welch, 2010). However, in this study, primer findings of the focus group discussions have shown that this assertion is not valid in the case of *minibüs*; meaning fear of crime restricts many aspects of public life indifferent from gender. Men are as vulnerable as women, and because of the drivers' "subjected authority" men also feel threatened, alert and less in control riding the *minibüs*.

Within the scope of the focus group studies the center of attraction was not on distinguishing various levels of fear by Likert-scaling the questions and possible answers. Instead, the target was to comprehend the reflections of various levels of fear in behaviors as riders and non-riders. The indications of the discussions suggest that taking the *minibüs* predominantly is a requirement and not a preference. Therefore, *minibüs* riders develop their own strategies to reduce their level of vulnerability and try to turn their commuting-experience into something more controllable.

Participant I-10: "I continuously take the *minibüs* while commuting from school to home. My home is actually really close to the last stop, yet I usually get off on the previous station, as I do not want to be alone in the *minibüs*. I am quite scared. Actually, I have been using the *minibüs* for a few months; however, no trust relationship has developed between the drivers and me yet. I do not trust an inch."

As previous research on perception of safety shows, fear in public transportation as a sub-category of public spaces can be linked to concerns about confrontation with crime, unfamiliar environments, places with unfamiliar people, fears of getting lost or lack of knowledge about surroundings (Bixler & Floyd, 1995; Kaplan, 1987; Day et al., 2003). The strategy to overcome or mitigate the fear experienced in the *minibüs*

is to restrict the times and routes of travel - times to more crowded hours and “similar allies” are co-commuting and routes to familiar tracks.

Participant I-06: “I usually feel vulnerable when I am alone. Familiarity is important and about the question why we are scared... For instance, when I travel somewhere else than where I live. I live in 4. Levent, let's say I travel to somewhere like Beykoz, I get anxious. When I am approaching my neighborhood, I relax.”

Participant I-08: “The triggering factor for my perception of safety is time. What time I took the *minibüs*. Once I had to be at Okmeydanı at 7, I had to leave home at 5 and I took the *minibüs*, it was horrible. When we are scared, our body reacts. My hands were sweating, my heart beats rose. Regarding time, when it is dark in the evening, and if I am alone during later hours, if there is no one I know surrounding, then this affects me too. Also, I guess knowing the track is also effective. For instance, I am going home to Pendik, I know the route, I know there is no deserted areas, and there are people around me. I feel I can make myself heard somehow even if something happens. I feel like I can manage to escape. I hope I do not experience this in my life. Once we went to Ankara with a friend, there was a disco ball. We were three people and we were all dead scared. A city, I do not have a clue of, it is totally different, disco ball was really scary. But if the route is well-known to me, such as while commuting from Kadıköy to Kartal, it does not happen. I know the environment. I think people would not let happen anything to me in public.”

### 5.3. Maverick Routes, Self-ordained Frequency, Vagaries: Irregularity and Disorder

Participant I-10: “As far as I am concerned, biggest problems are that the routes are altered frequently, and that they [*minibüs*] move really slowly while waiting for customers.”

The flexible and irregular nature of *minibüs* is on the one hand providing alternative to the non-flexible formal land transportation, the operation hours of which are usually restricted. İETT buses operating on the same route with *minibüs* usually start later during the day and finish earlier in the evening, leaving space for less demanded time slots to *minibüs*. The *minibüs* not tied to specific schedules aim for profitability and they have the option of non-departing the first stop/station

until the *minibüs* is full. Non-flexibility also means to get stuck within the traffic during rush hours, whereas the amendable nature of *minibüs* allows to change the route and take by-passes to get ahead of the jam. In a city where the average commuting time takes 91 minutes and 92% of passengers spend more than 2 hours within public transportation (Moo-vit Toplu Taşıma İndeksi, 2018), benefiting from this flexibility becomes “a compulsion rather than a preference”.

While the flexibility shortens the average commuting time, it brings about safety concerns. As mentioned in previous sections the *minibüs* driver is in charge of controlling, amending, and setting the course of the journey as well as all the perceptive and sensual aspects of the vehicle. As such, the driver is also in charge of the speed of the travel depending on the number of “customers”. Undefined stops, vagaries about arrival/departure times, inconsistent speed limits of the drivers incur disorder and irregularity. While buses only stop at designated stations, minibuses do so anywhere randomly and frequently. Even though this makes passengers choose *minibüs* over buses, this irregularity has negative effects on passengers' perception of safety, as well as on the overall traffic of the city. Each stop/station affects passengers' boarding and alighting. In their study on “Determination Minibuses Stop Delay In İstanbul”, Sarısoy et.al. (2016) states, the number of these stoppings is directly correlated with travel time, and the stop delay is affected by multiple factors such as vehicle features, crowdedness, location, stopping point, weather conditions, passenger and driver features.

In a city of 15 million, where the commuting times are long and citizens usually feel an urge to hurry, *minibüs* drivers take advantage of the vehicles' features and make as many maneuvers as possible to recuperate the time lost due to random stoppings.

Each passenger is an additional profit for the same one-way journey, and the optimum number of passengers to ride within a specific vehicle at a specific time on a specific route is to be decided by the driver. Any outside intervention in the nature of warnings or requests such as not to take any more passengers, to speed up or to slow down are not welcomed by the driver.

It is also quite uncertain whether the co-riders would take a stand by the driver's decision or the objecting passenger. Therefore, any regular *minibüs* passenger, who is encoded with these unwritten rules of *minibüs* culture, develops his/her own coping strategies.

Participant I-04: “For instance when I am about to get off the *minibüs*... Another passenger is going to get off at point A and I am supposed to get off at point B. If the other passengers request the driver to stop before

me, I usually tend to get off at his/her destination. Otherwise, I know I am going to catch hell for it, for not having told earlier. I happen to get off by the forest, but not where I feel safe and secure.”

Participant I–10: “I definitely cannot tell [when the *minibüs* is going to come]<sup>15</sup>. Therefore, sometimes I arrive at the university I–1,5 hours earlier, sometimes I just arrive on time.”

Participant I–04: “I would like to add something about the time *minibüs* drivers set aside for themselves. For instance, he drives slowly first and then very fast to catch up with the time. When I was younger, I was on the *minibüs* with my cousin. The driver does not have much time; he has to drive fast. The *minibüs* was very crowded as well. The driver did not wait long enough for us to get off, and my cousin fell off the vehicle. They want to gain time, but they are not trustworthy. People in the *minibüs* reacted, yet the driver did not care a bit.”

In his graduate study on *minibüs* focusing to the case of İstanbul, Kahraman (2010) found out that 69,6% of his research participants do not desire *minibüs* to have defined stops and stations as İETT buses. The focus group study participants of this research stated that they choose *minibüs* over other land based public transportation as they can get in and get off at locations on demand. On the other hand, drivers taking initiatives about where and for how long to stop can be annoying from passengers’ point of view, as well as threatening under certain circumstances as can be seen on the statements of focus group participants below.

Participant I–08: “Speed is the monopoly of the driver. We, as passengers, have no say about it; and it is a constraint on our rights. *Minibüs* drivers decide how fast to drive, where to stop, where to take a passenger. This is a stronger statement of a private space. This affects us more than sensual features such as light, sound, and decor.”

... In Maltepe, when it is school break, the drivers do not take students in, for example. This means, he decides who to pick as a passenger.”

Its irregular nature providing advantages in terms of commuting time and flexibility of stops, the same features stand out as problematic in terms of safety perceptions. Still, even such an irregular system requires some adjusting which is provided by *kahya*<sup>16</sup>s. *Kahya* is the chef or master of operation, waiting on crowded stations or intermediate stops. Their main duty is to organize a schedule and timing via collecting and distributing information from various *minibüs* drivers. For this line of work, they get paid by the *minibüs* drivers. *Kahya* gets paid for advertising the *minibüs* (shouting for the destination to summon customers), for informing drivers where traffic is heavy, how much time the driver should spend until destination, and telling when to take off, etc. They work as checkpoint watchers. If a *minibüs* driver violates and trespasses the time of another driver, *kahya* takes a fine from one to pass it on to the other.

Dealing with *minibüs* drivers and trying to set a fine tune, *kahyas* are usually vulgar with a threatening appearance. Kahraman (2010) investigated whether the research participants were aware of *kahya*’s tasks and responsibilities. A significant number of participants did not have a clue and did believe that these men actually have no mission. The same study revealed that 66% of participants were not happy with the existence of *kahyas*; and 84% of the participants agreed to the idea that *kahya* should work as a legal entity. These findings prove that an irregularity being tried to be adjusted by another is not welcomed by the passengers.

## 6. Primer Discussions in Lieu of Conclusion

The aim of this study is to examine the reasons behind the preference of intermediate public transportation despite the negative security perception of *minibüs* in İstanbul. One of the main arguments of focus group study participants was that the formal public transportation capacity of meeting the demands of everyday workplace-housing commuting is not sufficient and the vehicle-passenger relationship during peak hours reflects negatively on the quality of urban life in terms of safety and reliability. Yet, *minibüs* in this regard “stands not as a preference” but as a “compulsion”, since the formal alternatives are slower, inflexible, and do not cover the whole city so that the stops are accessible in walking distances.

Analyzing the *minibüs* as a critical road transportation means in İstanbul’s everyday urban life allows the researchers to understand the strengths of this structure – which are at the same time the weaknesses of the existing formal public transportation organization. That way it will be possible to make suggestions for both the intermediate and formal public transportation in İstanbul.

<sup>15</sup> Researcher’s additional note for clearance of participant’s statement.

<sup>16</sup> Referred also as “*çığirtkan*” or “*değnekçi*”. *Kahya* could be translated to Turkish as butler; and *çığirtkan* as tout. *Değnekçi* is apparently a very specific word for this occupation, and there is no real translation of this word. All these different labels refer to the features of the occupation and the characteristics of the men fit for this occupation.

Focus group study discussants indicate that the formal bus system falls behind in the competition with other types of public transportation means in terms of performance, reliability and efficiency. When looking at the İETT statistics about the share of transportation means these statements become obvious. Average operating speed is very low compared to *minibüs*, because buses do not have any priorities in traffic and larger, so the maneuver capability is lower. For this reason, faster systems such as private cars and *minibüs* are preferred during daily commuting trips.

This study has shown that an important problem in terms of security perception of *minibüs* passengers is this blurred notion of public transportation within a private establishment. A “stranger” -the *minibüs* driver- controls the decisions regarding the route and frequency and the physical conditions of the interior sphere. The focus group study documented that the internal environment of this intermediate public transportation system, which has both public and private qualities is negatively evaluated in terms of security perception, whereas the spatial organization of the *minibüs* operating system constitutes a serious problem in terms of safety. This study hopes to be a benchmark for future studies on intermediate public transportation systems and urban informal cultures.

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