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Surveillance as a variable explaining why other people's presence in a park setting affects sense of safety and preferences

Abstract

Research on preferences towards urban parks very rarely takes into account the impact of other people's presence in a park setting. We examined how the number of people in the vicinity and their distance affect sense of safety and preferences towards park space, and what role surveillance (being seen or heard) plays in these relationships. We analysed the correlations between the variables and the mediating effects. For this purpose, we employed a within-subjects design in which 194 participants evaluated a set of 112 eye-level photographs of park landscapes with regard to perceived safety, landscape preference and surveillance. We calculated how many people were in the field and determined their distance on the basis of photos. We analysed a number of mediation models testing hypotheses about the mediating role of surveillance and safety in the impact of other people's presence on safety and preferences. Most of the hypotheses presented, and verified by the analysis of indirect effects, were confirmed. The number of people does not affect preferences, but does affect safety, and this explains why the sense of being monitored (being seen or heard) grows along with the number of people present. On the other hand, the influence of distance on preferences is explained by a sequential model — greater distance is associated with less surveillance; in turn, surveillance increases sense of safety, which also leads to stronger preferences.

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1 Introduction

1.1 Motivation and goals of the study

As public spaces, urban parks play an important role in the life of city dwellers, especially in an era of increasing urbanisation. By enabling contact with nature, they have a beneficial effect on the regeneration of mental and physical health (Hoyle, Jorgensen, & Hitchmough 2019; Kaplan & Kaplan, 1989). Moreover, parks serve as places of social interaction (Cassels & Guaralda, 2013) or for recreation, sports and relaxation (Adinolfi, Suárez-Cáceres, & Cariñanos 2014; Bedimo-Rung, Mowen, & Cohen, 2005). Research on quality of life often focuses on its direct relation to the sense of contentment and satisfaction that result from the extent to which needs are met (Costanza et al., 2007; Badiora, & Abiola, 2017). One fundamental human need is sense of safety, which Maslow (1943) described as, inter alia, protection against danger, or lack of fear.

It seems that this need may be very important for those who visit public spaces, however, in cases where issue of safety was addressed, the research focused primarily on the impact of a park's spatial features (Amin, Alela, El-Fiki, & Emara, 2013; Lis & Iwankowski, 2021b) rather than the impact of people. And one might certainly assume that park visitors affect how people feel and evaluate the area, and this consequently impacts their decision to visit a particular park or not. We also know little about causality in terms of how other people's presence in a park area influences the feelings of visitors, including their sense of safety and evaluation of the attractiveness of the park space.

This study investigates whether sense of safety and landscape preferences towards park scenes vary by social cues, which are related to other people's presence in a park setting, and examines how the feeling of being monitored by other people affects the mechanisms under investigation.

1.2 The relationship between the number of people and their distance away and safety and preferences

Although studies on landscape preferences, including park landscapes, have yielded various results, they rarely take into account the impact of other people's presence on how other visitors perceive that space (Harris, Kendal, Hahs, & Threlfall, 2018; Liu & Schroth, 2019). In studies of people's feelings based on an assessment of photo representations of landscapes, it is taken as a rule that the landscapes shown must not contain people whose presence may have an uncontrolled influence on the test result (Herzog & Miller, 1998; Hofmann, Westermann, Kowarik, & Van der Meer, 2012). As a result, a respondent evaluating a park sees a representation of it that rarely reflects reality. After all, a park is a public space where physical and social layers coexist (Jennings & Bamkole, 2019), which both co-create a setting that influences our feelings, preferences and choices. Moreover, both are shaped by designers, either directly or indirectly. The physical aspect is a direct result of design decisions, and perhaps that is why it has received more attention and research on social preferences. However, the social aspect is also 'designed' through appropriate functional solutions – objects, types of equipment and their location, the course of communication routes, the location of entrance zones, etc. (Gump, 1971; Studer, 1970). Therefore, taking into account the influence of the social aspect in the form of other people's presence in a park setting on how it is evaluated could be considered to be a valid direction of research whose results may be used when designing urban parks.

As mentioned, studies that consider how the presence of people may influence preferences towards a park landscape are few and far between (Lis & Iwankowski, 2021a). The results obtained so far require more rigorous confirmation by replicating and extending research. Many more studies have been conducted how the presence of people in a given area affects sense of safety. This topic has been most widely developed in the field of environmental criminology (Brantingham & Brantingham, 1981), particularly focusing on criminal-types treated as components of social incivilities (Gobster & Westpahl, 2004; Skår, 2010). Social incivilities are included in the general concept of incivilities and disorder thesis, which explains that local physical deterioration and disorderly social behaviour significantly reduce city residents' sense of safety (Taylor, 2001, pp. 93-120). The two terms *social incivilities* and *physical incivilities* were coined to describe the elements they

incorporate (Hunter, 1978; Lewis & Maxfield, 1980). They are also often interconnected – physical decay and disorder give a signal to potential criminals (or people prone to antisocial behaviour) that a given area is out of control and that they can do whatever they want. Research clearly shows some tangible links between physical disorder and actual, officially reported crime and social disorder (e.g., Perkins, Wandersman, Rich, & Taylor 1993; Taylor, 2001; Taylor, Shumaker, & Gottfredson, 1985). So, Wilson (1975) gives some examples of physical incivilities: abandoned housing, graffiti, litter, abandoned cars, vacant trash-filled lots, unkempt greenery or housing exteriors. Social incivilities include rowdy and/or unsupervised teen groups, public drinking or drunkenness, neighbours arguing or late-night parties. Social incivilities understood as behaviour that is unpredictable, troublesome and threatening to people (Acuña-Rivera, Uzzell & Brown, 2011) constitute a crime-related social cue, and potentially dangerous-looking individuals are often associated with them (LaGrange, Ferraro, & Supancic 1992; Lis, Krzemińska, Dzikowska, & Anwajler 2014; Price-Spratlen & Santoro, 2011; Robinson et al., 2003). This means that there is a strong connection in public awareness between the aforementioned behaviours and their manifestations (vandalism, litter) with specific people and social groups such as disorderly youths (Fisher & May, 2009), drunks (Lindgren & Nilsen, 2012) or homeless people living in the park (Jorgensen, Hitchmough, & Dunnett, 2007). Researchers believe that the mere presence of these people in a given space significantly impairs sense of safety, because their appearance is often associated with problematic and socially unacceptable (not only criminal) behaviour. This is not the case for people who are seen engaging in expected and acceptable uses of a space. This acceptable, and often desirable, use of space is related to the proper use of certain areas and elements of park equipment or compliance with generally accepted social norms (Zalewska, 2021). Visitors who manifest positive (e.g., recreational – encouraging interaction or activity (Bedimo-Rung et al., 2005)) or neutral behaviour (e.g., walking through the park, eating a meal, fishing) from the point of view of other park users are people whom researchers tend to consider to have a positive impact on safety (Özgüner & Kendle, 2006) and which is associated with increased informal social control (Bellair, 2000; Jacobs, 1961; Newman, 1972). Social control can be understood as the reaction of other users of a given space to behaviour that breaks social norms, is unacceptable or poses a threat. This form of reaction may be, for example, pointing out someone who is littering the park or calling for help in an emergency (Chekroun & Brauer, 2002). A perfect example of social control is Jane Jacobs' so-called 'eyes on the street' – natural control over a given space that functions when there are numerous users of this space (1961). In theory, the mere presence of people in a given area should have a positive effect on sense of safety. However, little is known about the cues associated with the presence of other people in a park setting – how many of them there are and how far away – on perceived sense of danger. The distance between individuals is relevant for many reasons – for example, related to survival instinct and social relationships within the herd. These issues incorporate many different aspects, including individual and social distance (Hediger, 1961) as well as the concept of personal space (Hall, 1969). Breaching these distances may lead to fight of flight due to violation of territoriality and therefore the safety felt by an individual (excessive reduction of personal distance or intrusion into personal space) or the feeling that contact has been lost with the herd because the distance is too far (social distancing). We humans, like many other species, have a strong need to safeguard our boundaries and quickly grasp the spatial situation. The main senses involved are sight (observing and analysing other people in a given place) and hearing (catching and interpreting sounds, e.g., conversations). Two people may maintain a conversation at a distance of 7 metres. At a distance of up to 35 metres, words may still be audible but a conversation will be impossible, and at a distance of more than 35 metres a scream can be heard but the content will not be understood (Gehl, 2009). We may therefore wonder what distance from other people will offer us a sense of security (the chance that someone might respond to our call for help or that we will hear alarming or potentially dangerous noises) while at the same time allowing us to maintain our comfort (the chance that no one may overhear our conversations, ensuring a sense of privacy and freedom). In terms of distance,

at 100 metres, referred to as the social field of view, we can distinguish individual human beings. So we can see that there are other people in the space, but we cannot see who they are or what they are doing. As we get closer, we can determine gender, approximate age and activity performed (70–100 meters), facial features, hairstyle (approx. 30 meters) and feelings and moods (20–25 meters) (Gehl, 2009). This issue would appear to be highly relevant. On the one hand, people at a distance are less dangerous than potential attackers – seeing a potentially dangerous person in the distance, we have time to react, to run away or call for help, etc. (Lis, Ziemiańska, & Weber-Siwirska, 2016). On the other hand, people who are far away have less chance of being able to help effectively in a dangerous situation. It is similar when it comes to the number of people in an area. When they are treated as potential attackers, the more of them there are, the lower the sense of safety. However, when they are considered as a potential source of help, their number works to our advantage, boosting the possibility of receiving assistance. So we have reasons for considering the number of other people recreating in a park setting (e.g., walking, jogging, playing with a dog or children, relaxing on a bench etc.) and the distance they are away as both a positive and negative predictor of sense of safety.

To sum up, precious little research has been conducted on the relationships between the number of other people recreating in a park setting and their distance apart and the feelings of other visitors. So far, the focus has largely been on various forms of using space (including recreation), and therefore also on the impact of the mere presence of people in a given area (Antic, 2019; Han & Lee, 2022; Junker & Buchecker, 2008; Noël, Landschoot, Vanroelen, & Gadeyne, 2021; Schroeder & Anderson, 1984). The feelings of other users are ambiguous regarding this presence – when it comes to sense of safety, the presence of other people can have both a negative and positive effect (Goffman, 1971; Jorgensen, Ellis, & Ruddell, 2013). A few studies have taken into account the distance between people in a given space (e.g., Lis et al., 2024; Lis & Iwankowski, 2021a), but their results remain unconfirmed. Therefore, we believe that consideration of this aspect and the number of other park visitors present will offer new data that might set the direction for further analyses. More importantly, this is also because we do not know enough about the mechanisms of these relationships. Not only are we unfamiliar with the impact of social cues on the feelings of park visitors, but also what causes it – which explains that other people's presence in a park setting affects safety and preferences in a specific way. While looking for the key variable that would explain this impact, we acknowledged that it could be a question of surveillance (awareness of being observed and heard). The significance of this variable can also be understood as sense of freedom (which is mentioned as a component of being beyond surveillance) (Eroglu & Michel, 2018). This freedom, in turn, may be associated with a lack of control over our personal data (anonymity) or not being monitored in a public space (Kremer, 2017). Surveillance is therefore strongly related to sense of privacy (Kim & de Dear, 2013; Lis et al., 2019; Nichols, 2015; Noël, Landschoot, Vanroelen, & Gadeyne, 2021).

Social cues in the form of the presence of other park users are undoubtedly a form of informal control and, consequently, supervision over a given area and the people who use it. The close connection between social control and sense of safety has been repeatedly emphasised (Acuña-Rivera, Uzzell, & Brown, 2011; Okunola & Amole, 2012). In recent years, one of the few studies on privacy in parks by Lis, Zalewska and Iwankowski (2019) confirmed the impact of surveillance (or more precisely, the feeling of not being monitored) on sense of privacy and sense of safety. However, this study, like most others, did not take into account the presence of people. On the other hand, a surveillance can influence preferences. Admittedly, apart from the aforementioned, there have been no studies explaining whether and how being monitored (or not) influences preferences. However, since safety (affecting preferences) is related to surveillance, we can assume that the latter will also explain the causes behind the relationship between other people recreating in a park setting (their number and distance away) and preferences.

Taking the above into account, we established a hypothesis illustrated by the relationship models shown in Figure 1 and 2:

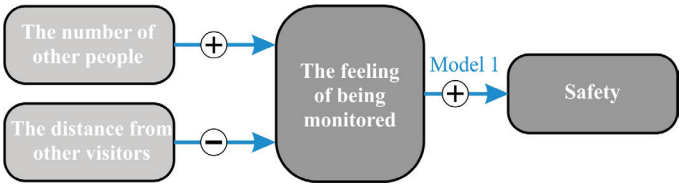

Figure 1. Models of test relationships in which surveillance is a mediator in the relationship between the number of people recreating in the park, their distance and safety.

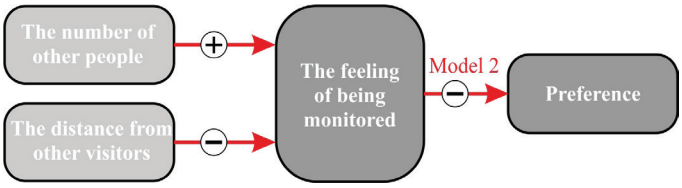

Figure 2. Models of test relationships in which surveillance is a mediator in the relationship between the number of people recreating in the park, their distance and preference.

H1: Surveillance explains the relationship between: (H1a) the number of other people recreating in a park setting and (H1b) their distance and sense of safety

The first model, illustrating hypothesis H1 (Fig. 1), shows how (according to our assumptions) the number of people recreation in the park and their distance affect safety. The relationship is one of cause and effect, with supervision being the mediating link. This works in two ways. Firstly, the number of people has a positive effect on supervision – the more people in a space, the greater the social control. The increase in social control enhances sense of safety because we can count on help in the event of a threat. So, surveillance explains why the number of people boosts the feeling of safety.

In turn, the distance between ourselves and other park users has a negative impact on supervision – the further away potential observers are, the less we feel observed (less supervision) and the smaller the chance that a threat will be noticed and acknowledged (less sense of security). To summarise the model: the effect of the number of people and distance on sense of safety is mediated (explained) by supervision – supervision is therefore the cause of the relationship between the number of people and distance and sense of safety.

H2: Surveillance explains the relationship between: (H1a) the number of other people recreating in a park setting and (H1b) their distance and preference.

The second model, illustrating hypothesis H2 (Fig. 2), shows how (according to our assumptions) the number of people recreating in the park and their distance affect preferences. This model illustrates a cause and effect relationship, where supervision is also an indirect link. Initially, it is analogous to the first model – the number of people has a positive impact on supervision due to increased social control, while distance has a negative impact on supervision since the further away potential observers are, the less observed we feel. However, the model also takes a different turn. According to previous research, people do not like being watched – it affects preference negatively, not positively as with safety according to model 1.

To summarise the model: the effect of the number of people and distance on preference is mediated (explained) by supervision – supervision is therefore the cause of the relationship between the number of people and distance and preferences.

1.3 The relationship between the surveillance and preferences for a given area (mechanisms of the relationship)

As mentioned, little is known about how the surveillance (being seen, observed, heard) affects sense of safety and preferences in parks. Several studies have been developed that investigated the impact of similar variables – the feeling of not being monitored and privacy – on preferences and safety (Lis & Iwankowski, 2021a, 2021b; Lis et al., 2019). These studies indicate that the effect of these variables (safety and privacy/not being monitored) in certain situations is opposite. Spatial situations offering a sense of privacy (e.g., intimate, sheltered places in a park) are generally associated with a reduced sense of safety (Fisher & Nasar, 1992; Wang & Taylor, 2006). Conversely, spatial situations in which we feel safe (e.g., open, visible spaces) do not offer a sufficient sense of privacy (Hammitt, 2002).

We can predict a similar mechanism in the case of how surveillance (being seen and heard) influences preferences. Just being monitored by others disrupts and impairs our sense of privacy, so it can be considered a negative predictor of preferences. We expect that spaces where we feel watched tend not to be

popular (Lis & Anwajler, 2004; Lis et al., 2019). However, if we assume that surveillance enhances sense of safety (Heek, Arning, & Ziefle, 2014; Patton, 2000) and that safety has a beneficial effect on preferences (Herzog & Miller, 1998; Lis, Pardela, Iwankowski, & Haans, 2021), then we can expect that situations that offer a sense of surveillance will be popular because they foster a feeling of safety.

We can adopt similar reasoning when considering the impact of sense of safety on preferences. Sense of safety per se may be considered a positive influence on the assessment of the area where we find ourselves. However, if we take into account the fact that in safe spaces we usually feel that we are seen and heard, we could give such safe spaces a lower evaluation. So we may expect that situations offering a sense of safety will not be popular because they are associated with the feeling that others may watch or hear us.

We have no basis to predict which of these two variables – surveillance or safety – will work more strongly in relation to the photos assessed in our study. As a result, we cannot predict whether safety and the feeling of being monitored in a given park space will have a positive or negative impact on the evaluation of this space. However, we can assume that the two relationships described above do exist and explain the mechanisms of how surveillance and safety influence preferences. Therefore, we formulated another hypotheses, which are illustrated by the relationship models in Figure 3 and 4:

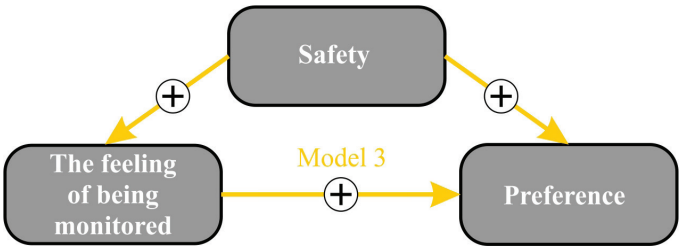

Figure 3. Model illustrating how safety explains the impact of surveillance on preference for park landscapes.

H3: Sense of safety explains how and why surveillance influences preference for park areas

The third model, illustrating hypothesis H3 (Fig. 3), shows how (following our assumptions) supervision affects safety. The mediating variable in this situation is safety, and the relationship is one of cause and effect as follows: supervision has a positive impact on safety, because when we feel watched and know that there are other people in the vicinity, so in the event of danger, there is a hope that someone may come to our assistance. In turn, safety has a positive impact on preference because people tend to like landscapes where they do not feel threatened. Therefore, supervision has a positive effect on preference. In other words, the effect of surveillance on preference is explained (mediated) by safety, which is the cause of this relationship.

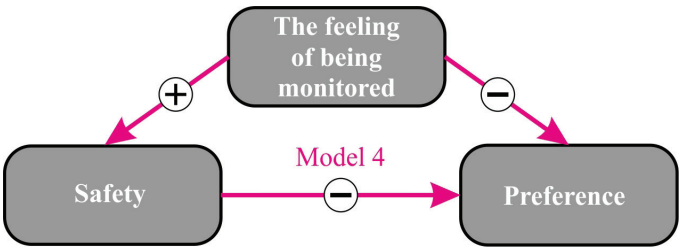

Figure 4. Model illustrating how safety explains the impact of surveillance on preference for park landscapes.

H4: Supervision explains how and why safety influences preference for park areas

The fourth model, illustrating hypothesis H4 (Fig. 4), shows how (according to our assumptions) safety affects preference. The relationship is one of cause and effect, with supervision as the mediator. The relationship is such that surveillance has a positive impact on safety due to increased social control. However, the feeling of being watched reduces sense of privacy and, therefore, preference. This is because people generally like landscapes that offer the comfort of unrestrained and free behaviour unrestricted by outside observers. As a result, the positive impact of sense of safety on preferences is inhibited by the feeling of surveillance that accompanies safe spaces – these would be liked if it were not for the sense of being watched and monitored. Surveillance therefore explains the link between safety and preference – the reason why a safe place under the supervision (observation) of others may not be liked.

2 Methods

2.1 Questionnaire design

We employed a design in which participants evaluated a set of 112 eye-level photographs. The photos showed park landscapes and were randomly selected from a larger sets 903 photos. All photos were taken between August and October 2021 in city parks in Wrocław in Poland. The selected parks were neither very popular nor deserted areas, receiving what might be termed an average daily footfall. We decided not to study spaces with a large number of visitors (crowded), as they have been demonstrated as safe (e.g., Jacobs, 1961; Cozens, 2008; Crowe & Zahm, 1994). In less crowded parks the situation is more ambiguous.

In our study, the unit of analysis is the park landscapes presented in the photos. They do not represent specific places or locations – just the internal features are relevant to this particular study. As a result, the photos were selected randomly from a large collection, which means that they constitute a representative sample for a given class of landscapes. On the basis of the presented park scenes, the relevant features (variables) were measured in the field and based on photos. The evaluations made by the respondents, treated as competent judges, were another measurement tool. These ratings were averaged to give a final total for the measured characteristic. Comparing these measurements for individual photos helped establish correlations between variables, and the use of mediation models made it possible to determine complex relationships. Such a method is already well-established and often used in research on how landscape features affect people's feelings (e.g., van Rijswijk & Haans, 2018; Lis et al., 2019; Pardela, Lis, Iwankowski, Wilkaniec, & Theile, 2022; Herzog & Bryce, 2007; Masoudinejad & Hartig, 2020).

We took the photos with a camera with the focal length set to 35 mm. Each photo had to include people in the frame – we avoided people who might evoke negative feelings in other visitors due to their appearance (e.g., homeless people or representatives of certain subcultures) or behaviour (e.g., consumption of alcohol). At least one person had to be visible in each photo; therefore, we did not include empty photos. We assumed there should be 1–20 people in the frame. In the end, the number of people visible in the frame ranged from 1 to 17 people, and the distance ranged from 5.2 to 99 metres. Furthermore, none of the photos showed decorative elements such as flowers or water features or eyesores such as litter or dilapidation. We took the photos on sunny days from 10:00 to 16:00. We took 987 photos in total as the base, which were then sorted by eliminating photos that did not meet the criteria (e.g., photos containing people who might arouse fear or dilapidated small architecture). As a result, 903 photos remained.

2.2 Research variables

Our study included two independent variables (the number of other people recreating in a park setting and their distance) and three dependent or mediating variables (safety, preferences, surveillance).

We measured independent variables as follows – measuring the 'number of other visitors' variable consisted in counting all the people captured in a photo. The 'distance of other visitors' was measured by one person. The first measured the distance from the park visitor who was supposed to be in the frame of the photo with a laser rangefinder, while the second person simultaneously took the photo. Whenever there were more park visitors in the frame, the measurement always involved the visitor closest to the photographer. As a result, the distance measured in this way referred to the size of the zone without the presence of other people.

Measurement of dependent and mediating variables (safety, preference, surveillance) was based on the perceptual assessment made by the participants of the study. For individual categories (variables), the average scores given for each of the 112 scenes included in the questionnaire constituted the basis for statistical analyses. Ratings were made using a 5-point Likert scale, where 5 was the highest for each variable and 1 was the lowest (e.g., Herzog & Kropscott, 2004; Lis et al., 2021; Pardela et al., 2022). Each respondent was informed in the survey invitation that the questions concerned evaluations made from the perspective of someone visiting the park

Exemplary urban park setting (No 2)

Values of the dependent and intermediary variables:
Safety - 3.37
Surveillance - 2.32
Preference - 4.14

Values of the independent variables:
The number of other visitors - 2
The distance of other visitors - 63.4 m

Exemplary urban park setting (No 10)

Values of the dependent and intermediary variables:
Safety - 3.68
Surveillance - 3.35
Preference - 2.91

Values of the independent variables:
The number of other visitors - 6
The distance of other visitors - 12.2 m

Exemplary urban park setting (No 109)

Values of the dependent and intermediary variables:
Safety - 2.88
Surveillance - 1.85
Preference - 3.29

Values of the independent variables:
The number of other visitors - 1
The distance of other visitors - 78.0 m

Exemplary urban park setting (No 103)

Values of the dependent and intermediary variables:
Safety - 3.56
Surveillance - 3,23
Preference - 3.16

Values of the independent variables:
The number of other visitors - 9
The distance of other visitors - 15,2 m

Figure 5. Sample photos of park landscapes with the values of the dependent and intermediary variables (safety, surveillance, preference) and independent variables (the number of other visitors and their distance).

alone. This was because the perception of variables, especially privacy and safety, will differ when we are in the company of other people in the park (Bedimo-Rung et al., 2005; Crewe, 2001; Pedersen, 1997). For safety, the task read: 'Rate how safe or unsafe you would feel in the place from where the photo was taken. Answer the question on a scale from 1 to 5, where 1 = very unsafe and 5 = very safe.' For preference, the task read: 'How much do you like the setting? This is your own personal degree of liking for the setting, and you don't have to worry about whether you're right or wrong or whether you agree with anybody else. Answer the question on a scale from 1 to 5, where 1 = not at all and 5 = very.' For

surveillance, the task read: 'Rate how much you feel that others can monitor you here – see, observe, hear, accost, start a conversation with you, even if you don't want to. Answer the question on a scale from 1 to 5, where 1 = not at all (no one can see/hear/accost you) and 5 = very (you can be easily seen/heard in this environment and you may encounter an unwanted form of contact).'

2.3 Sampling method

We recruited the respondents with the help of assistants – safety engineering students (43 people were willing to participate in the study), who conducted surveys with friends and acquaintances. The students (interviewers) were properly trained by us. The respondents were assumed to be people of different ages (minimum 18 years old), representing various professional groups and backgrounds. Each student was to conduct a survey with at least three people. The questionnaires were randomly assigned to the respondents. All surveys were conducted using computers with at least a 15.6-inch screen. The answers were marked by the respondent in the presence of the interviewer. The students recruited 194 voluntary participants for the study (99 females and 95 males, age range = 18–72 years; Mage = 28.34; SDage = 12.03). Each participant evaluated the photos in terms of one dimension only. As a result, the participants evaluated photographs of landscapes for safety (n = 57) or preference (n = 56) or surveillance (n = 81). This procedure helps to avoid false correlations between the assessments of individual variables and has been used many times in studies where landscape evaluations are analysed (Herzog & Kirk, 2005; Lis et al., 2019; van Rijswijk & Haans, 2018). Moreover, this method allows participants to evaluate a large number of photos. By answering only one question, they evaluate only one landscape feature (variable). In order to facilitate the above-mentioned assessment, the photos were grouped and presented in the form of a set of four photos per slide in order to prevent excessive fatigue (4 photos viewed simultaneously give an additional opportunity for comparison, thereby facilitating and accelerating the evaluation of the photos – Harris et al., 2018; Lis & Iwankowski 2021a, 2021b; Pardela et al., 2022). The order of photos in the survey was selected randomly. So, each respondent had 28 slides to evaluate, each one containing 4 photos viewed simultaneously. The questionnaire took an average of 15 minutes to complete.

2.4 Data analysis

Analyses were based on settings as the units of analysis and setting scores as raw scores. For independent variables, the 'setting score' for the setting was an appropriate measurement made in the field (the distance of the closest person to the observer taking the photo) or on the basis of the photo (the number of people visible in the photo). For dependent variables and mediators (danger, surveillance, preference), the setting score was the mean score for each setting based on all respondents who completed one of the rating tasks. Thus, for each rated variable, each of the 112 settings displayed on the photos had a setting score. Internal consistency reliability coefficients (Cronbach's alpha), based on settings as cases and participants as items, ranged from 0.988 to 0.990 (αsafety = 0.989, αsurveillance = 0.990, αpreference = 0.988).

We conducted statistical analyses using the JAMOVI 2.2.5 package to perform a number of Pearson's r correlation analyses as well as mediation analyses using the GML Mediation Model module. Mediation analysis tests the existence of an intermediary relationship by performing a series of regression analyses. The analyses include: path a – between the independent variable and the mediator; path b - between the mediator and the dependent variable, path c - between the independent variable and the dependent variable and finally path c - between the independent variable and the dependent variable, but taking into account the mediator in the model (Baron & Kenny, 1986). A mediator was used in the model as a control (maintaining a constant). This makes it possible to determine the independent influence of independent variables on the dependent variable. The results are interpreted as follows: when with a statistically significant path c, path c' ceases to be statistically significant - the mediator can be considered as an intermediary variable explaining why there is a relationship between the independent variable and the dependent variable. This method is usually complemented by the Sobel test and

the superior bootstrap method (Hayes, 2009). The bootstrap method involves estimating the distribution of estimation errors. This estimation is possible thanks to repeated sampling (Efron, 1982).

We assumed α = .05 as the level of significance. We concluded the statistical significance of the mediating effects on the basis of 95% confidence intervals determined via the bootstrap method with a randomisation of n = 5000 samples and the Sobel test.

3 Results

3.1 Descriptive statistics, correlation analyses

Before starting on the analyses aimed at testing the hypotheses, we checked the distributions of the variables to check whether they meet the normality of distribution criterium (Appendix A). Since normality of distribution is a requisite for using parametric tests, including those based on regression analyses, we performed the following steps: 1) a Kolmogorov-Smirnov test, which checked whether the distribution of values of individual variables did not differ significantly from the normal distribution; 2) visually assessment of histograms showing the distribution of values for each variable; 3) verification of the distribution features – skewness and kurtosis. The test results indicated that the distributions of the dependent variables did not differ statistically significantly from the normal distribution. Moreover, the lack of distribution asymmetry that might distort the statistical tests was evidenced by skewness and kurtosis not exceeding an absolute value of 1 (George & Mallery, 2019). However, we noticed a strong asymmetry for both independent variables – the number of other people recreating in a park setting and their distance. The distributions were strongly left-skewed, so we decided to transform these variables by their logarithmisation (natural logarithm). After this procedure, both variables had a distribution consistent with the Gaussian curve, as confirmed by a skewness and kurtosis not exceeding an absolute value of 1.

Subsequently, we analysed Pearson's r correlation (Appendix B), which revealed that the independent variables (the number of other people recreating in a park setting and their distance) are correlated with most of the dependent variables. The number of people correlates the strongest with safety (r = 0.59, p= < .001), slightly weaker with surveillance (r = 0.46, p= < .001), but does not correlate with preference. The distance of the other people recreating in a park setting is most strongly correlated with surveillance (r = -0.63, p= < .001), weaker with preference (r = 0.41, p= < .001), but does not correlate with safety. In the group of dependent variables, the strongest correlation is between the surveillance and safety (r = 0.59, p= < .001), while the relationship between the surveillance and preference (r = -0.46, p= < .001) is weaker. There is no statistically significant correlation between safety and preference. None of the ratings were affected by the age and gender of the respondents.

3.2 Analyses of relationships mediated by surveillance (model 1 and 2 – hypothesis H1)

In order to test hypothesis H1 (H1a, H1b) and H2 (H2a, H2b), we performed a series of mediation analyses. We conducted an initial analysis of two mediating relationships (model 1 – Fig. 1 and model 2 – Fig. 2). In this model 1, we checked whether surveillance is a variable that explains the relationship between the number of people and their distance away in a given setting and safety. The conducted analysis (Table 1) indicated that both mediating effects are statistically significant. In the case of the number of people in the environment (H1a), this is mediation: the positive correlation between the number of people and safety becomes significantly weaker when we control for surveillance in the model (the relationship between the number of people and safety also occurs without the mediation of surveillance). This result means that social control is one of the variables explaining why the number of people in the environment has a positive effect on safety. This is because the number of people in the environment increases the feeling of surveillance, which in turn has a positive effect on safety. If not for the increased social control, the number of people in the environment would also have a positive impact on the sense of safety, but this impact would be significantly weaker.

Table 1. Results of the analysis of the mediating effect of Control in the relationship between Number/Distance and Safety (model 1, hypothesis H1), *SE* = standard error, *β*= standardised regression coefficient, *z* = z-score, *p* = significance level. The bold confidence interval was determined on the basis of the bootstrap method with a drawing of n = 5000 samples.

				95% C.I. (a)				
Type	**Effect**	**Estimate**	*SE*	*Lower*	*Upper*	*β*	*z*	*p*
Indirect	In(Number) → Surveillance → Safety	0.07	0.017	**0.04**	**0.11**	0.24	4.29	< .001
	In(Distance) → Surveillance → Safety	-0.12	0.028	**-0.18**	**-0.07**	-0.33	-4.43	< .001
Component	In(Number) → Surveillance	0.23	0.027	0.18	0.28	0.46	8.50	< .001
	Surveillance → Safety	0.31	0.067	0.18	0.44	0.53	4.74	< .001
	In(Distance) → Surveillance	-0.39	0.033	-0.46	-0.33	-0.63	-12.00	< .001
Direct	In(Number) → Safety	0.10	0.024	0.06	0.15	0.35	4.39	< .001
	Distance- Transform 1 → Safety	0.06	0.037	-0.02	0.13	0.15	1.53	0.126
Total	In(Number) → Safety	0.18	0.023	0.13	0.22	0.59	7.86	< .001
	In(Distance) → Safety	-0.07	0.028	-0.12	-0.01	-0.18	-2.40	0.016

The second path, demonstrating the mediating effect of surveillance in the relationship between distance and safety (model 1, hypothesis H1b), reveals that a mediation effect exists: when in the model we control for the surveillance, the relationship between distance away and sense of safety disappears (becomes statistically insignificant). The indirect effects of surveillance in the relationship between distance/number of people and safety are statistically significant, as indicated by both the Z-test result ($p < 0.001$) and the confidence interval created using the bootstrap method that does not contain any 0 in its interval. This result means that social control is also a variable explaining why the distance of people in the environment a positive effect on perceived safety has – as the distance of other people increases, the sense of surveillance decreases, which negatively affects sense of safety. The distance of other people in the environment would not affect sense of safety, if not for the fact that it reduces the feeling of not being monitored.

The second analysis from this group (model 2 – Fig. 2, hypothesis H2) concerned models where surveillance is a variable that explains the relationship between number of people and distance away and preferences. It turned out that the number of people in the vicinity (H2a) did not affect preferences towards a landscape – the relationship between the number of people and preference remains statistically insignificant also when we control for surveillance in the model (Table 2). On the other hand, the second tested area concerning the relationship between distance (H2b) and preference, similarly to model 1, revealed a mediation effect: when in the model we control for surveillance, the relationship between distance away and preferences disappears (becomes statistically insignificant). This means that social control is a variable explaining why the distance of people in the environment has a positive effect on preferences – as the distance of other people increases, the sense of surveillance decreases, and this (opposite to sense of safety) positively affects

Table 2. Results of the analysis of the mediating effect of Control in the relationship between Number/Distance and Preference (model 2, hypothesis H2). All abbreviations and acronyms as in case of the Table 1

				95% C.I. (a)				
Type	**Effect**	**Estimate**	*SE*	*Lower*	*Upper*	*β*	*z*	*p*
Indirect	In(Number) → Surveillance → Preference	-0.06	0.021	**-0.10**	**-0.01**	-0.17	-2.60	0.009
	In(Distance) → Surveillance → Preference	0.10	0.038	**0.03**	**0.17**	0.23	2.50	0.012
Component	In(Number) → Surveillance	0.23	0.027	0.18	0.28	0.46	8.45	< .001
	Surveillance → Preference	-0.24	0.091	-0.42	-0.07	-0.37	-2.65	0.008
	In(Distance) → Surveillance	-0.39	0.033	-0.46	-0.33	-0.63	-11.87	< .001
Direct	In(Number) → Preference	0.01	0.031	-0.05	0.07	0.04	0.41	0.681
	In(Distance) → Preference	0.07	0.053	-0.03	0.18	0.18	1.41	0.158
Total	In(Number) → Preference	-0.04	0.028	-0.10	0.01	-0.13	-1.50	0.133
	In(Distance) → Preference	0.17	0.035	0.10	0.24	0.41	4.80	< .001

preferences. The distance of other people in the environment would not affect preferences, if not for the fact that it makes us feel less monitored.

3.3 Analyses of relationships mediated by surveillance (model 3 and 4 – hypothesis H3 and H4)

A second group of analyses were run on mediating effects in order to test hypothesis H2 H3 (model 3 - Fig. 3) and H4 (model 4 - Fig. 4). We checked how safety explains the relationship between surveillance and preference (model 3, hypothesis H3) as well as how surveillance explains the relationship between safety and preference (model 4, hypothesis H4).

The first analysis (H3), in which safety plays a mediating role, revealed the effect of cooperative suppression (Table 3). The negative correlation between surveillance and preference becomes stronger when we control for safety in the model. This means that safety acts as a suppressor in this relationship – the feeling of being monitored would lower preferences to a greater extent if it did not have a positive effect on sense of safety. The mediating effect is statistically significant. An even stronger effect is observed in the relationship between safety and preference (H4), where surveillance acts as a suppressor (Table 4). By removing part of the variance that is responsible for the negative impact of surveillance on preferences, safety has a positive effect on preference. In contrast, without controlling for surveillance as a suppressor variable in the model, the relationship between safety and preference is statistically insignificant. This result means that situations that enhance safety do not improve preferences because they involve more surveillance, which negatively affects preferences.

As shown in Model 2 (Table 2), surveillance explains the positive effect of distance on preferences. However, at the same time, taking into account the relationship between distance and safety, mediated by surveillance (shown in the tested model 1 – Table

Table 3. Results of the analysis of the mediating effect of Safety in the relationship between Control and Preference (model 3). All abbreviations and acronyms as in case of the Table 1.

				95% C.I. (a)				
Type	**Effect**	**Estimate**	*SE*	*Lower*	*Upper*	*β*	*z*	*p*
Indirect	Surveillance → Safety → Preference	0.15	0.048	0.06	0.24	0.22	3.05	0.002
Component	Surveillance → Safety	0.35	0.045	0.26	0.44	0.59	7.80	< .001
	Safety → Preference	0.41	0.121	0.17	0.64	0.37	3.38	< .001
Direct	Surveillance → Preference	-0.45	0.079	-0.60	-0.29	-0.68	-5.66	< .001
Total	Surveillance → Preference	-0.30	0.055	-0.41	-0.20	-0.46	-5.50	< .001

Table 4. Results of the analysis of the mediating effect of Control in the relationship between Safety and Preference (model 4). All abbreviations and acronyms as in case of the Table 1.

				95% C.I. (a)				
Type	**Effect**	**Estimate**	*SE*	*Lower*	*Upper*	*β*	*z*	*p*
Indirect	Safety → Surveillance → Preference	-0.44	0.092	-0.63	-0.28	-0.40	-4.79	< .001
Component	Safety → Surveillance	0.98	0.120	0.75	1.22	0.59	8.21	< .001
	Surveillance → Preference	-0.45	0.077	-0.60	-0.30	-0.68	-5.84	< .001
Direct	Safety → Preference	0.41	0.119	0.17	0.64	0.37	3.43	< .001
Total	Safety → Preference	-0.03	0.104	-0.24	0.17	-0.03	-0.32	0.751

Note: Confidence intervals computed with method: Bootstrap percentiles

Note: Betas are completely standardized effect sizes

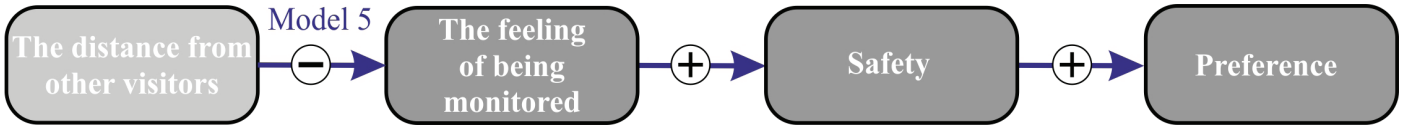

Figure 6. A model where surveillance and safety sequentially explain the influence of distance from other people on preference towards a park landscape.

Table 5. Multiple sequential mediation – effect of Control and Safety in the relation between Distance and Preference (model 5). All abbreviations and acronyms as in case of the Table 1.

				95% C.I. (a)				
Type	**Effect**	**Estimate**	*SE*	*Lower*	*Upper*	*β*	*z*	*p*
Indirect	In(Distance) → Safety → Preference	0.05	0.022	0.01	0.09	0.11	2.07	0.038
	In(Distance) → Surveillance → Preference	0.16	0.046	0.08	0.25	0.38	3.45	< .001
	In(Distance) → Surveillance → Safety → Preference	-0.07	0.028	**-0.13**	**-0.02**	-0.17	-2.52	0.012
Component	In(Distance) → Safety	0.12	0.040	0.04	0.20	0.31	2.96	0.003
	Safety → Preference	0.38	0.129	0.13	0.64	0.35	2.94	0.003
	In(Distance) → Surveillance	-0.39	0.046	-0.48	-0.30	-0.63	-8.60	< .001
	Surveillance → Preference	-0.40	0.106	-0.61	-0.20	-0.61	-3.80	< .001
	Surveillance → Safety	0.47	0.061	0.35	0.59	0.79	7.71	< .001
Direct	In(Distance) → Preference	0.04	0.047	-0.06	0.13	0.09	0.79	0.428
Total	In(Distance) → Preference	0.17	0.036	0.10	0.24	0.41	4.75	< .001

1), and the relationship between surveillance and preference mediated by safety, we can assume that safety may also mediate the relationship between distance and preference. Therefore, we additionally tested sequential model 5 (Fig. 5) with the following scheme: Distance → (negative impact) Surveillance → (positive impact) Safety → (positive impact) Preference (Fig. 4)

The analyses performed (Table 5) indicated that in this model the mediators act as multiple sequential mediation. All paths are statistically significant. The greater the distance between people, the less the surveillance. Surveillance would have a negative impact on preference were it not for the fact that it boosts safety. As a result, there is a sequential model that works in such a way that greater distance is associated with less surveillance. The latter, in turn, enhances sense of safety, which also boosts preference. Including mediators in the model makes the relationship between distance and preference statistically insignificant.

4 Discussion

4.1 Models of mediating relationships – the impact of social cues on safety (models 1)

The first group of analyses on mediating effects (model 1) looked at sense of safety. These analyses show that the number of other people in a given area is positively linked with sense of safety, and this relationship partially explains why the more people there are in the vicinity, the greater the sense that others might observe and hear us. This result is in agreement with, for example, Jane Jacobs (1961), who states that the safety of public space is ensured by a large number of random observers ready to react in an emergency. Therefore, it also confirms the role of social control – the presence of other people in a given space – on sense of safety (Cozens, 2008; Crowe & Zahm, 1994). At the same time, mediation analyses have indicated that the distance of other people in the park is negatively linked with sense of safety because the feeling that others might be monitoring us decreases along with increasing distance. Were it not for this, distance would not impact safety. This conclusion, while not counterintuitive, is also not obvious. Precious little research has been conducted on the influence of distance from other people in the park on sense of safety. Such research conducted in recent years by Lis and Iwakowski (2021a) offered a different outcome – distance from other people turned out to have a positive impact on sense of safety. It is difficult to judge why these differences arise. They may be related, for example, to the selection of photos for research. The assessment could have been influenced by spatial factors, among others. For example, viewing obstructions and hiding places in the form of dense groups of plants may exacerbate sense of danger in a situation of close proximity to other people – who may then be treated more as potential attackers than potential defenders (Andrews & Gatersleben, 2010; Fisher & Nasar, 1992). So if the set of photos assessed in Lis and Iwankowski's study contained more (compared to ours) photos with viewing obstructions or hiding

places, the assessors may have evaluated other people's presence lower in the safety category. Another possibility is that further distances may limit vision and hearing – we may be afraid that no one will hear if we scream, or we will not be able to make a quickly and precise appraisal of whether a silhouette looming in the distance should cause us concern (Gehl, 2009). Moreover, we do not know the factors related to the appearance or type of activity other park users are engaged in. As mentioned earlier, we avoided photos of dangerous-looking individuals, but we do not know whether more of a given gender or age group (numerous males or young people) affects the perception of risk when such people are observed in a given space. The situation is similar with behaviour – for example, neutral activities such as sitting on a bench or walking and their precise impact on park visitors' feelings are seriously understudied. The literature tells us a great deal about the impact of incivilities, and a little about purely recreational behaviour, on safety and preferences, but this topic also seems to remain underexplored. However, identifying the causes of these differences is mere speculation – more research is needed to fill the gaps in this area of knowledge.

4.2 Models of mediating relationships – the influence of the studied variables on preference (models 2, 3, 4 and 5)

The second variable included in our assumed group of indirect effects was preference. At the outset, we examined the indirect influence of surveillance in the relationship between social cues (number of people and their distance) and preference. The first line of analyses showed that the number of people in the vicinity did not affect preferences – also taking into account the mediating variable of surveillance. How many people are in a given area probably does matter to us, but the assessment of this aspect (whether we prefer spaces with more or less people) depends on other factors not included in this study. Such variables may be personal – for instance, stronger or weaker inclinations to observe other people and their behaviour (Mean & Tims, 2005), social factors such as who they are and how the people visible in an area are behaving, and whether these behaviours clash with ours (Lis, Burdziński, Gubański, Walter, & Bocheńska-Skałecka, 2014; Wilson & Kelling, 1982), or spatial considerations in terms of how the space is organized, whether it is more conducive to social contact or privacy (Lis & Anwajler, 2004; Ibrahim, Omar, & Nik Mohamad, 2019; Robson, 2008). It would be worthwhile to extend the research in the future by introducing new variables to be controlled for.

The second line of analysis indicated that the distance of other people in the park is positively linked with preference because as distance increases, the feeling that others might be monitoring us decreases. Were it not for this, distance would affect preference. In fact, this outcome is in line with the conclusion drawn by Lis and Iwankowski (2021a), who also demonstrated that we prefer spaces where people are at a distance. In that study, this relationship was explained by the notion that sense of privacy grows as distance from other people increases. In this research, we used another variable – the feeling of surveillance by other people (visual and auditory). One may wonder if it was worth introducing a new variable to the research instead of just using privacy that had already been used in previous studies. However, in our opinion, privacy is a category more subjective and more difficult to measure (Leino-Kilpi et al., 2001; Newell, 1998) and therefore of less practical importance. The surveillance can be assessed in a given area by determining the probability of contact with other people in an auditory sense, resulting from the distance of stationary or moving people, and visual, resulting additionally from their position in a particular space (where our gaze is directed). Moreover, the operational definition that we used in the survey question appears to be more precise and specific. We can assume that it left the respondents with fewer doubts as to understanding the concept compared to the general question about the extent to which (in the surroundings visible in the photo) our need for privacy is satisfied (Lis & Iwankowski, 2021a, 2021b; Lis et al., 2019).

The results of testing the next two models (models 3 and 4) explaining how safety and surveillance mutually influence their relationship with preference was an intermediate step towards constructing the final sequential model (model 5). This model explaining the relationship between the distance of other people and preference reveals that this rela-

tionship depends on the surveillance as well as on safety. Acting sequentially, these two variables explain how and why distance from other people affects our evaluation of the attractiveness of a given space. We know that this distance reduces surveillance, which is perceived favourably. Yet, on the other hand, reducing surveillance lowers perceived safety, which is considered unfavourably. Although our research has shown that, as a result of the sequential operation of both variables, preference increases the further away people are, these results should be approached with caution. Given these two opposing lines through which we perceive other people's presence at different distances, we have no reason to believe that our research results prove that social cues have a positive or negative effect on preferences. Probably this would depend on the situations assessed. Depending on the situation, either our inclination to not be monitored or to be safety will 'win out'. Certainly, further research is needed in this area – still very poorly researched and, at the same time, undoubtedly important when it comes to recognising the impact of social factors on the landscape of feelings of city park users.

4.3 Limitations

Our research presents a number of limitations, mainly related to the research method used. First, in most studies on landscape evaluations, the unit of analysis is people, while in our study, the unit of analysis was landscapes (Herzog & Kirk, 2005; Lis et al., 2019; van Rijswijk & Haans, 2018). The photos for each of the variables were assessed by a different group of respondents who acted as competent judges. This enabled analyses to be made based on the average ratings given to park landscapes by respondents for each of the analysed variables. However, at the same time and for this reason, determining how the respondents' characteristics (such as gender, age) influence their assessment of the landscape was possible only within individual groups of judges (in our case, we did not find any impact of this type).

We are aware that the above-mentioned feelings of park users are certainly influenced by socio-demographic factors – for example, researchers highlight the effect of cultural origin, level of education and living environment (Molnarova et al., 2012; Yu, 1995; Van den Berg & Velk, 1998) on how people perceive their surroundings. When it comes to sense of safety, two very commonly mentioned factors that influences its perception are age (Jorgensen & Anthopoulou, 2007; Maas et al., 2009) and gender (Madge, 1997; Farrall, Bannister, Ditton, & Gilchrist, 2000; Jorgensen, Hitchmough, & Calvert 2002; Li, 2018). However, in this study, landscapes are the unit of analysis. Therefore, we believe that in the future it is worth considering these differences when studying other research schemes – where the unit of analysis is people (rather than landscapes, as in our study). This will enable us to check whether gender and age have a significant impact on the variables and relationships under study. Another possibility is to conduct research involving respondents who evaluate photos in terms of all the variables (not just one, as in our study) – gender and age may then be controlled for in the models. However, it would then be necessary to apply procedures limiting the influence of the evaluation of one variable on the evaluation of another variable (e.g., by introducing a longer time interval between the evaluations of different variables and changing the order of the displayed photos). To this end, it might be possible to use film instead of photography, which may offer a promising direction for future research.

Moreover, we opted against field research, which offers greater opportunities for landscape observation. This was mainly for financial reasons and the fact that this solution can involve a larger number of participants. However, it should be borne in mind that field studies take into account factors that may not be captured in the photos – for example, sounds in the vicinity (Carles, Barrio, & De Lucio, 1999) or smell (Zhao, Huang, Wu, & Lin, 2018), weather conditions (Półrolniczak & Kolendowicz, 2021), including temperature (Shahzad, Calautit, Hughes, Satish & Rijal, 2019) or dynamic view (Gao, Liang, Chen, & Qiu, 2019). Therefore, it might be worth extending the research in the future by attempting to determine the relationships between the studied variables in an actual situation (in a park).

Thirdly, the park photos were taken at specific times of the day, months and during sunny weather, which did not take into account the seasonal variability of park landscapes over time and thus the impact of

these variables on the perceptions of the respondents. In addition, the photos of park landscapes were taken in one Central European city, so this limitation also applies to geographic conditions. Despite the fact that similar park landscapes may be encountered over a wide geographical area and the features of the landscapes shown in the photos are not location-specific, the outcomes may be different for parks from other climatic zones of a clearly different nature.

Finally, we would like to mention that our research is, at least in some way, pioneering. The obtained results may be partially dependent on the sample selection; therefore, it is necessary to replicate the tests many times in order to reliably assess these results. The discrepancies demonstrated here give some indication of this, for example. We have included suggestions regarding which studies need to be developed or replicated in the discussion section.

5 Conclusion

The results of our research and their interpretations permit us to formulate some theoretical and practical conclusions – relating to how city parks might be shaped:

1. The presence of other people in an area affects our sense of safety, which is **stronger, the more people there are in the vicinity and the closer they are.** This influence is explained by the feeling that others can see and hear us (hypothesis H1 – model 1).
2. **The number of people does not affect how an area is evaluated** (social preferences). At the same time, t**he further away other people are, the more popular the space**. This is because the close proximity of other people creates a feeling of being monitored that we dislike (hypothesis H1 - model 2)
3. The presence of other people in the vicinity increases safety, but at the same time the feeling that others might be monitoring us adversely affects preference. We are faced here with two contradictory mechanisms (hypothesis H2: a stronger sense of safety related to the presence of other people **would enhance perception of space were it not related to surveillance** (model 4). On the other hand, we **do not like the feeling of being watched despite the fact that it gives us a greater sense of safety** (model 3).
4. In summary, the number of people and their distance away influence safety and preferences differently. The number of people has a clear positive effect on safety, a weaker influence on the surveillance, and then has no impact on preference. It is a different story when it comes to distance from other people: distance has a strongly negative impact on the surveillance, a weaker influence on preferences, but does not impact sense of safety. This means that **sense of safety is best ensured through activities that increase the number of people in the vicinity**. This can be achieved by boosting the appeal of a given place (introducing water features, plants, or perhaps street furniture) or by arranging active zones – addressed to specific groups of users (e.g., children) or dedicated to a specific activity (e.g., recreational, with appropriate equipment). Then, sense of safety will be enhanced without undermining the evaluation of a given space (preferences). On the other hand, **the feeling that we want of not being monitored is better achieved by increasing the distance of the places where we seek privacy from areas occupied by other people**. Therefore, places that are to satisfy our need for privacy, intended for peaceful rest, contact with nature rather than other people or close, intimate contact with companions, should be distanced from places occupied by other people. However, at the same time, in order to provide the necessary sense of safety, it would be a good idea to locate such places within the sight of active places where more people are present. In this way, ensuring safety will not come at the expense of losing the feeling of not being monitored by other people. For this purpose, partially transparent visual partitions – either plant or architectural – may be installed, which could be openwork or suitably adjusted in height to allow visual access. Another solution may be to emphasise the boundaries of such a space by, for example, shaping the surface of the land or linear objects (an element of small

retention). However, this would work more on a psychological level than an actual restriction of visual access.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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