



Perceived Social Safety and Women's Participation in Outdoor Recreational Activity

Dr. Amelia Rose Whitmore

Senior Research Fellow in Gender, Community, and Behavioral Psychology
Department of Social Behaviour and Community Participation
Westbridge Centre for Gender and Recreation Studies
Bristol, United Kingdom

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Abstract: Women's participation in outdoor recreational activities is shaped by a combination of individual, interpersonal, social, and environmental factors. Among these, perceived social safety is especially important because outdoor participation often takes place in public or semi-public settings where women may assess the likelihood of unwanted attention, harassment, isolation, limited assistance, poor visibility, or insufficient social protection. The present study examines the relationship between perceived social safety and women's participation in outdoor recreational activity from a gender and social-behavioral perspective. Rather than treating safety only as an objective feature of the environment, the study defines perceived social safety as an individual's assessment of whether an outdoor setting offers socially supportive, predictable, and sufficiently secure conditions for participation. The paper draws on environmental psychology, gender and leisure research, social support theory, physical activity research, perceived safety literature, and behavioral participation models. Because no original participant dataset was provided, the quantitative component is presented explicitly as a simulation-based analytical illustration rather than as completed empirical research. The illustrative model represents participation intention scores of 2.61, 3.67, and 4.49 across low, moderate, and high perceived social safety conditions, respectively. A second illustrative analysis presents simulated contribution indicators of 48% for perceived social safety, 39% for companionship availability, and 32% for environmental visibility. These values are not empirical estimates and should not be interpreted as observed effects or causal coefficients. Existing evidence supports the importance of social and environmental conditions in shaping women's physical activity. A systematic review of prospective cohort studies found that physical activity among adult women is associated with

intrapersonal, social, and environmental determinants, although social and physical environmental factors have received less attention than individual-level influences. Research involving women living in disadvantaged neighborhoods has also reported associations between neighborhood social conditions and physical activity, with perceived personal safety playing an important mediating role. Qualitative research on women and outdoor recreation further indicates that fear, companionship, identity, and convenience influence participation. The paper therefore conceptualizes perceived social safety as a multidimensional social-behavioral construct involving interpersonal presence, social trust, environmental visibility, access to assistance, and perceived freedom from unwanted social threats. The analysis suggests that increasing women's participation in outdoor recreation requires attention not only to physical infrastructure but also to the social conditions through which outdoor environments are interpreted and experienced.

Keywords: Perceived Social Safety; Women's Participation; Outdoor Recreation; Gender and Social Behaviour; Physical Activity; Environmental Psychology; Social Support; Recreational Behaviour; Safety Perception; Community Participation; Outdoor Leisure; Gendered Recreation

1. Introduction

Background

Outdoor recreational activity includes a wide range of activities carried out in parks, trails, public open spaces, recreational facilities, neighborhood environments, and natural settings. These activities may include walking, running, cycling, hiking, informal exercise, nature-based recreation, and other forms of leisure participation. Although outdoor recreation offers opportunities for physical activity, social interaction, and leisure, access to these opportunities is not experienced equally by everyone.

Women's participation in outdoor settings is shaped by several factors, including social expectations, previous experiences, environmental conditions, accessibility, time availability, companionship, and perceived safety. These factors often interact with one another. An outdoor environment may be physically accessible but still feel unsuitable if a woman believes that participation involves an unacceptable level of social risk.

Perceived social safety is therefore different from objective safety. Objective safety may involve measurable conditions such as lighting, surveillance, traffic levels, crime rates, or

access to emergency assistance. Perceived safety refers to an individual's judgment about whether an environment feels secure enough for participation. These two dimensions are related, but they are not identical.

Research on women's safety in public spaces shows that perceived safety can influence mobility and participation. A systematic review of women's perceived safety in public places identified built-environment, individual, and social factors as relevant influences. Lighting, walking-path conditions, surveillance, and surrounding social characteristics were among the factors associated with perceived safety.

The importance of perceived safety is also evident in research on women's physical activity. Carver examined women living in disadvantaged neighbourhoods and reported associations between neighbourhood social conditions and physical activity. Their findings indicated that perceived personal safety played an important mediating role in the relationship between social environmental conditions and physical activity.

Prince et al. conducted a broader systematic review of prospective cohort studies examining determinants of physical activity among working-age women. The review included 97 studies and identified intrapersonal, social, and physical environmental influences. It also noted that social and environmental determinants had received less research attention than individual-level factors.

These findings suggest that women's participation cannot be explained only through personal motivation. The social and physical environment in which activity takes place also influences participation decisions.

Gender is especially relevant because outdoor spaces may carry different social meanings for women. Wesely and Gaarder examined women's experiences in outdoor recreation and found that fear, vulnerability, and objectification could restrict participation even when women valued outdoor activity. Their findings highlight the importance of understanding outdoor recreation through women's lived experiences rather than assuming that physical access alone is sufficient.

Research involving African American women also identified fear and companionship as important influences on outdoor recreation choices. Dorwart and Patterson reported that personal fears, lack of support or companionship, outdoor-recreation identity, and convenience shaped participation decisions among the women in their qualitative study.

The present study builds on these perspectives by focusing specifically on perceived social safety as a social-behavioral factor. The emphasis is not only on whether an outdoor setting contains physical hazards, but also on whether women perceive the surrounding social environment as supportive, predictable, and secure enough for comfortable participation.

Problem Statement

The relationship between safety and outdoor recreation is complex because participation decisions are shaped by both actual environmental conditions and personal interpretations of those conditions.

An outdoor location may have suitable physical infrastructure but still be perceived as socially unsafe if women feel isolated, believe that assistance would be difficult to obtain, or anticipate unwanted attention. In contrast, the presence of other recreational users, trusted companions, familiar community members, and visible social activity may strengthen feelings of safety.

Safety may also influence participation indirectly. A woman who views an outdoor setting as socially unsafe may change the timing, duration, location, or type of activity rather than stopping physical activity completely. These adaptations may still restrict recreational freedom and reduce access to preferred forms of participation.

The issue is therefore not simply whether women take part in outdoor recreation, but how perceived social conditions influence where, when, with whom, and how comfortably participation occurs.

The central research problem addressed by this paper is:

How may perceived social safety influence women's willingness to participate in outdoor recreational activity, and which social and environmental conditions may strengthen or weaken this relationship?

Research Motivation

The motivation for this research comes from the need to understand outdoor participation as a socially embedded form of behavior. Physical activity recommendations and recreational opportunities have limited practical value when people perceive the environments in which those activities occur as socially unsafe.

A second motivation is the need to distinguish perceived safety from fear. Fear is an emotional response to perceived threat, while perceived social safety involves a broader judgment about whether an environment provides acceptable conditions for participation.

A third motivation concerns companionship and social visibility. Research on women and outdoor recreation suggests that companionship influences participation decisions, while environmental conditions shape how safe outdoor spaces feel.

The present study therefore treats safety as a multidimensional social-behavioral perception involving interpersonal presence, community trust, environmental visibility, access to assistance, and expectations about social conduct.

2. Literature Review

Women's Outdoor Recreation and Participation Constraints

Women's participation in outdoor recreation has been examined through several perspectives, including leisure constraints, gender roles, environmental psychology, physical activity, and social behavior.

Leisure constraints refer to factors that restrict, reduce, or alter participation. Crawford, Jackson, and Godbey's hierarchical model provided an important foundation for understanding intrapersonal, interpersonal, and structural constraints. Although the model is not specific to women or safety, it offers a useful way to understand outdoor participation as the result of interacting barriers rather than as a simple personal choice.

Gender may influence how these constraints are experienced. Women may consider not only whether an activity is physically accessible, but also whether the surrounding social environment allows participation without excessive discomfort, uncertainty, or perceived vulnerability.

Wesely and Gaarder's research is especially relevant because it examined women who participated in outdoor recreation while also managing concerns related to fear and vulnerability. Their findings show that women may value outdoor activity while still adapting their behavior in response to perceived social threats.

These adaptations may include choosing certain locations, avoiding particular times, seeking companionship, changing routes, or selecting different recreational activities. Such strategies may allow participation to continue while still limiting freedom of choice.

The literature therefore supports an important distinction between participation occurrence and participation conditions. A woman may participate in outdoor recreation while still

facing significant restrictions concerning when, where, and with whom that participation takes place.

Perceived Safety and Physical Activity

Perceived safety has been widely studied as an environmental factor associated with physical activity. Research has examined issues such as crime perceptions, traffic safety, lighting, neighborhood conditions, social cohesion, and environmental visibility.

Carver et al. studied women living in disadvantaged neighborhoods and found that social environmental factors were associated with physical activity. Their findings also indicated that perceived personal safety mediated several of these relationships. This evidence is important because it suggests that safety perception may function as a psychological pathway linking the social environment with physical activity.

Adlakha et al. reviewed gender differences in the relationship between built environments and health-related outcomes and identified differences involving access to recreational facilities, neighborhood safety perceptions, and walkability.

Prince et al. also showed that social and environmental factors should be considered alongside individual-level influences when examining physical activity among adult women. Taken together, these findings suggest that perceived safety does not operate in isolation. It may interact with social support, neighborhood characteristics, accessibility, transportation, and individual confidence.

Social Support and Companionship

Social support is another important influence on outdoor participation. Companionship may change how an outdoor environment is experienced by increasing familiarity and reducing feelings of isolation.

Companionship also offers practical advantages. A person may feel more comfortable entering unfamiliar surroundings when accompanied by someone they trust. Shared participation may also transform recreation from an individual activity into a social experience.

Dorwart and Patterson identified companionship as one of the themes shaping outdoor recreation among adult African American women. Their findings support the idea that social

safety is partly relational. A trusted companion may provide emotional reassurance, practical assistance, and a stronger sense of social security.

At the same time, companionship should not be treated as a necessary condition for women's participation. Designing outdoor recreation around the assumption that women should always participate with others may unintentionally reduce autonomy. Outdoor environments should also support women who prefer to participate independently and still want to feel socially safe.

Environmental Visibility and Social Presence

Environmental visibility refers to the extent to which individuals are able to observe their surroundings and anticipate who or what is present nearby. Visibility may be influenced by lighting, vegetation density, pathway design, open sightlines, and the presence of other users. The relationship between visibility and safety extends beyond physical design. Seeing other people may create a stronger sense of social presence and informal monitoring, especially when those individuals are perceived as legitimate and non-threatening users of the environment.

Carver et al. found that seeing others walking or exercising in the neighborhood was associated with physical activity among women in disadvantaged areas, while perceived safety mediated several social-environment relationships.

Broader evidence on built environments also suggests that environmental characteristics may influence physical activity differently across genders.

Visibility may therefore influence participation through two main pathways. First, it may reduce uncertainty by making the environment easier to interpret. Second, it may strengthen perceived access to social assistance when needed.

Gender, Social Expectations, and Outdoor Space

Outdoor recreational environments are not socially neutral. Gender expectations may influence beliefs about appropriate behavior, clothing, timing of participation, independence, and social interaction.

These expectations may restrict behavior even when formal access remains open. A woman may avoid a trail, park, or recreational area because she anticipates social discomfort rather than because the space is physically inaccessible.

Wesely and Gaarder's research illustrates this tension. Women in their study valued outdoor experiences while also negotiating concerns about fear and vulnerability.

The social meaning attached to outdoor spaces is therefore an important part of participation research. Perceived social safety may reflect both environmental conditions and expectations about how women believe they will be treated by others.

Community Environment and Social Trust

Community trust and social cohesion may contribute to perceived safety by shaping expectations about whether other people will respond appropriately if assistance is needed.

Social trust differs from simple physical surveillance. A crowded environment may still feel socially unsafe if the people present are perceived as indifferent, threatening, or unpredictable.

In contrast, a less crowded environment may feel safer when participants recognize other users, understand local routines, and expect help to be available when necessary.

This distinction is important for community recreation planning. Increasing the number of people in a recreational area does not automatically create a stronger sense of social safety.

Outdoor Recreation as a Social Behaviour

Outdoor recreation involves both individual and social processes. People select activities according to their preferences, goals, physical abilities, schedules, and perceived constraints, but these choices take place within wider social environments.

Social interactions influence whether participants feel welcome, recognized, supported, and comfortable. Repeated participation may also increase familiarity with particular places and people, which may gradually change perceptions of safety.

Perceived social safety should therefore be understood as dynamic rather than fixed. A participant who initially experiences an outdoor setting as unfamiliar may become more comfortable after repeated positive experiences, greater familiarity with the environment, and stronger recognition of other users.

3. Research Gap

Existing research shows that environmental characteristics, social conditions, companionship, and perceived safety influence women's physical activity and outdoor recreation. Even so, several important gaps remain.

- First, safety is often understood mainly as a physical or crime-related feature of the environment. This approach may overlook the interpersonal and social dimensions that also shape whether women feel comfortable participating in outdoor settings.
- Second, social support and companionship are frequently examined separately from environmental safety. Their interaction deserves greater attention because the presence of trusted people may influence how women interpret the same physical environment.
- Third, participation is sometimes measured only in terms of whether physical activity takes place. This approach may miss important adjustments in location, timing, route, duration, or companionship. A woman may continue participating while still restricting how, when, or where that participation occurs.
- Fourth, research should clearly distinguish objective environmental conditions from subjective perceptions of safety. Two individuals may encounter the same outdoor setting but interpret its level of safety differently because of previous experiences, personal characteristics, or social context.
- Fifth, empirical research should avoid treating women as a single homogeneous group. Age, previous experience, familiarity with the location, disability, socioeconomic circumstances, cultural background, and other contextual factors may shape how safety is perceived and how outdoor participation is managed.

The research gap can therefore be stated as:

There is a need for an integrated gender and social-behavioral framework that examines perceived social safety, companionship, environmental visibility, and women's participation in outdoor recreational activity as interconnected processes.

4. Novelty / Proposed Contribution

The main contribution of this paper is the conceptualization of perceived social safety as a multidimensional factor influencing women's participation in outdoor recreation.

The proposed framework identifies four dimensions:

- perceived interpersonal safety
- availability of trusted companionship
- environmental visibility and social presence
- perceived access to assistance

These dimensions are treated as related but conceptually distinct.

A second contribution is the integration of environmental and social explanations. Rather than assuming that physical infrastructure alone determines whether an outdoor environment feels safe, the framework considers how women interpret the presence, behavior, and predictability of other people within that setting.

A third contribution is the distinction between participation and participation freedom. A woman may remain physically active while avoiding specific locations, times, routes, or activities. Such adaptations indicate continued participation, but they should not automatically be interpreted as unrestricted access to outdoor recreation.

A fourth contribution is methodological. The paper clearly separates simulated analytical values from empirical evidence and avoids presenting illustrative numerical patterns as observed findings. This distinction supports greater transparency and provides a clearer basis for future empirical testing.

5. Research Objectives / Research Questions

The primary objective of this study is to examine the conceptual relationship between perceived social safety and women's participation in outdoor recreational activity.

The study also aims to clarify how social and environmental conditions interact with safety perceptions and influence participation decisions.

Research Objectives

- To examine the conceptual relationship between perceived social safety and women's participation in outdoor recreational activity.
- To examine companionship availability as a potentially important social condition influencing participation.
- To assess the theoretical relevance of environmental visibility and social presence in shaping perceived safety.
- To distinguish perceived social safety from objective environmental safety.
- To examine how safety perceptions may influence participation frequency, location choice, timing, and willingness to participate independently.
- To develop a structured framework for future empirical research on gender, safety perception, and outdoor recreation.

Research Questions

- How may perceived social safety influence women's participation in outdoor recreational activity?
- What role may companionship play in shaping outdoor participation decisions?
- How may environmental visibility influence perceived social safety?
- Does perceived social safety potentially mediate the relationship between social environmental conditions and outdoor participation?
- What methodological approaches are suitable for measuring women's perceived social safety and outdoor recreational participation?

6. Methodology

Research Design

The study uses a simulation-based conceptual research design grounded in gender and social-behavioral theory.

No original participant dataset was provided for the present study. Therefore, all quantitative values reported in the Results section are illustrative and simulated rather than empirical observations.

Perceived social safety is treated as the main explanatory construct, while women's participation in outdoor recreational activity represents the principal outcome. Companionship availability and environmental visibility are included as theoretically relevant contextual factors.

The study is not presented as a completed empirical experiment. The simulated values are used only to demonstrate the proposed analytical structure and are not used to make causal claims.

Dataset / Sample

No empirical dataset was collected or analyzed for this manuscript.

Future empirical research could recruit adult women who regularly participate in, or have access to, outdoor recreational activities. Sampling should include participants with different levels of outdoor recreation experience and different patterns of individual and group participation.

The sampling strategy should record relevant contextual characteristics, including age group, frequency of outdoor recreation, familiarity with the activity location, participation with companions, and typical activity timing.

Including these variables would help researchers distinguish differences in perceived safety from differences in exposure, familiarity, and previous experience.

Tools / Techniques

- A future empirical study should use a structured questionnaire measuring:
- perceived social safety
- perceived environmental visibility
- perceived access to assistance
- social trust
- companionship availability
- previous negative experiences
- outdoor recreation frequency
- willingness to participate independently
- participation constraints

Where possible, self-reported participation should be supported by activity diaries, attendance records, or other suitable behavioral measures.

Qualitative interviews could also complement quantitative measures by exploring how participants interpret safety and explain their recreation-related decisions.

Experimental Procedure

The present manuscript does not report a completed human-participant experiment.

A future longitudinal study could begin with baseline measures of perceived social safety and outdoor recreational participation. Participants could then record their participation patterns across a predefined observation period.

A repeated-measures design could examine whether changes in perceived social safety are associated with changes in participation frequency, activity location, or willingness to participate independently.

An experimental extension could use standardized outdoor scenarios representing different levels of social visibility, companionship availability, and perceived environmental safety. Participants could then report their intended participation decisions under each condition. Such experimental research would require appropriate ethical approval and informed consent procedures.

Evaluation Metrics

The primary outcome could be assessed through participation frequency, activity duration, location choice, participation intention, and willingness to participate independently.

Secondary psychological measures could include perceived social safety, perceived vulnerability, social trust, companionship availability, and environmental visibility.

Potential statistical methods include descriptive analysis, reliability testing, correlation analysis, multiple regression, mediation analysis, and longitudinal mixed-effects modeling.

For future empirical studies, effect sizes and confidence intervals should accompany inferential statistics. Relevant statistical assumptions should also be assessed before model estimates are interpreted.

7. Results

The quantitative values presented in this section are simulated illustrative values and do not represent observations obtained from actual participants.

Table 1. Illustrative Participation Scores across Perceived Social Safety Conditions

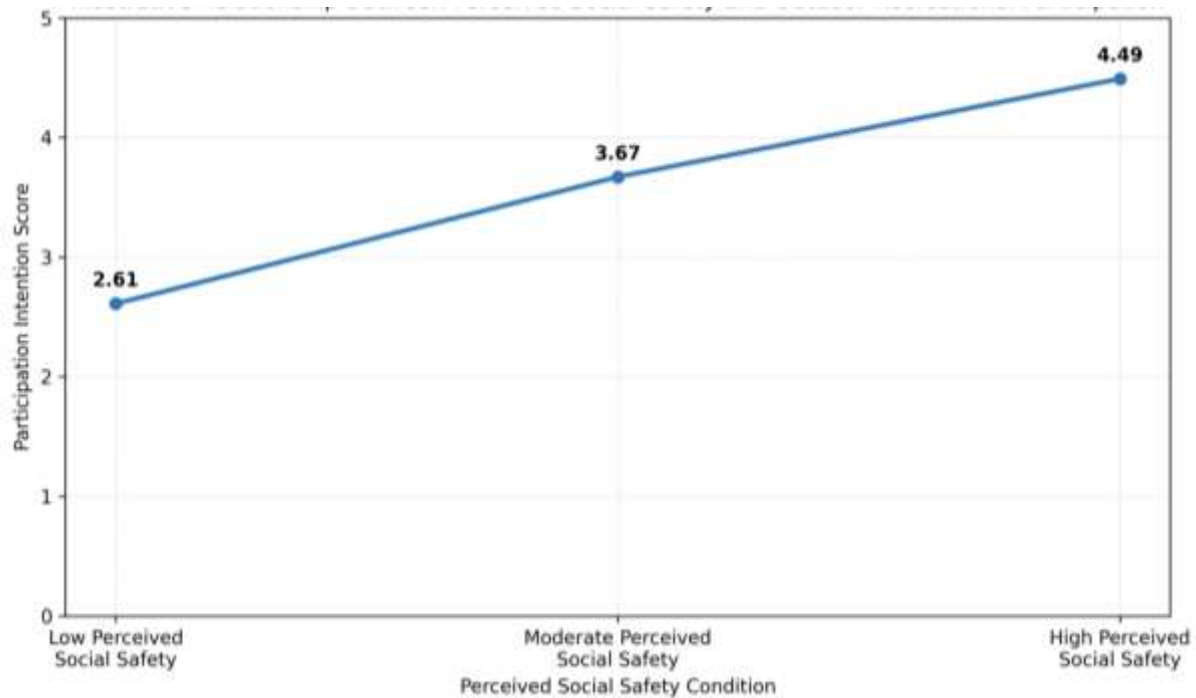
Perceived Social Safety Condition	Illustrative Participation Intention Score
Low Perceived Social Safety	2.61
Moderate Perceived Social Safety	3.67
High Perceived Social Safety	4.49

The simulated values show a steady increase in participation intention as perceived social safety increases. The illustrative score rises from 2.61 under low perceived social safety to 3.67 under moderate perceived social safety and reaches 4.49 under high perceived social safety.

This pattern suggests that, within the proposed simulation, stronger perceptions of social safety are associated with greater willingness to participate in outdoor recreational activity. The difference between the low- and high-safety conditions is 1.88 scale points.

Because these values are simulated, the pattern should be interpreted only as an analytical illustration of the proposed relationship. It does not establish an empirical association, statistical significance, or causal effect in actual populations.

Graph 1. Illustrative Relationship Between Perceived Social Safety and Outdoor Recreational Participation



The graph presents a positive simulated relationship between perceived social safety and participation intention. As perceived social safety increases, the illustrative participation score also rises. This pattern should be interpreted only as a conceptual demonstration because no empirical participants were included in the present study.

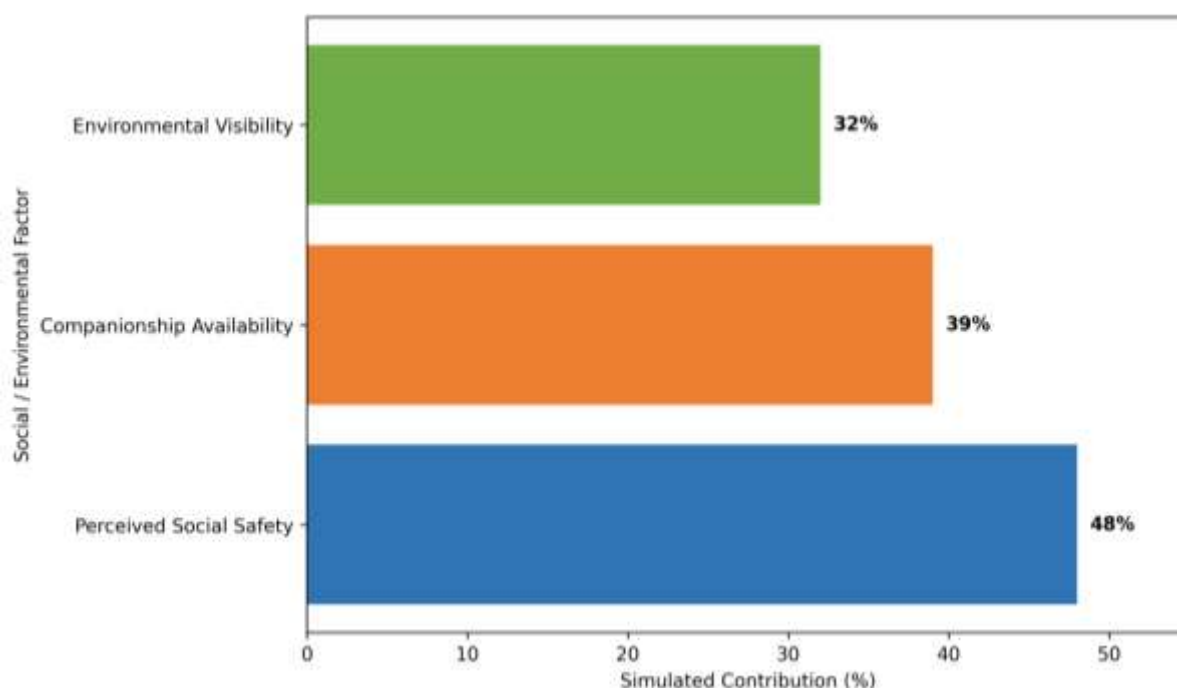
Table 2. Illustrative Contribution of Social and Environmental Factors

Social / Environmental Factor	Simulated Contribution (%)
Perceived Social Safety	48
Companionship Availability	39
Environmental Visibility	32

The illustrative values indicate that perceived social safety has the highest simulated contribution, followed by companionship availability and environmental visibility.

These percentages are simulated illustrative indicators and should not be interpreted as regression coefficients, effect sizes, or observed empirical contributions. They are presented only to demonstrate the relative conceptual importance assigned to these factors within the proposed framework.

These values are independent illustrative indicators and are not intended to sum to 100%.

Graph 2. Illustrative Contribution of Social and Environmental Factors

The illustrative analysis assigns simulated contribution values of 48% to perceived social safety, 39% to companionship availability, and 32% to environmental visibility. These figures are conceptual indicators only. They are not regression coefficients, effect sizes, or empirical estimates.

Statistical / Experimental Findings

Because no empirical participant dataset was analyzed, no inferential statistics are reported.

The simulated values reflect an intended positive relationship between perceived social safety and participation intention. The illustrative difference between the low and high perceived social safety conditions is 1.88 score points.

The second illustration identifies perceived social safety, companionship availability, and environmental visibility as theoretically relevant dimensions within the proposed framework. These results should therefore be interpreted as descriptive features of the simulation rather than statistically established findings from real participants.

8. Discussion / Critical Discussion

Results Interpretation

The illustrative results show a steady increase in participation intention as perceived social safety rises. The simulated score increases from 2.61 under low perceived safety to 3.67

under moderate safety and reaches 4.49 under high safety.

One possible theoretical explanation is that stronger perceptions of safety reduce uncertainty about the surrounding social environment. When women believe that an outdoor location is socially predictable and that assistance is reasonably accessible, the perceived psychological burden associated with participation may be lower.

This interpretation does not suggest that women are inherently fearful or that outdoor environments are necessarily unsafe. Instead, the framework emphasizes that participation decisions are shaped partly by how individuals perceive and interpret the environments in which recreational activity takes place.

The relationship may also involve greater behavioral freedom. When an outdoor environment is perceived as socially safe, participants may have more flexibility to choose locations, times, routes, and activities according to personal preference rather than avoidance.

Comparison with Previous Studies

The illustrative relationship is broadly consistent with research showing that safety perceptions are relevant to women's physical activity. Carver et al. found that neighborhood social environmental conditions were associated with physical activity among women and that perceived personal safety mediated several of these relationships.

Prince systematic review also showed that women's physical activity is influenced by a combination of intrapersonal, social, and physical environmental factors. The review further noted that social and environmental determinants had received less research attention than individual-level influences.

Research examining gender differences in relationships between the built environment and health-related outcomes has also reported differences involving neighborhood safety perceptions and access to recreational environments.

Wesely and Gaarder's qualitative research provides an important complementary perspective. Their findings showed that women may value outdoor recreation while also managing concerns related to vulnerability and fear.

The present framework builds on these findings by placing perceived social safety at the center of a model that also includes companionship and environmental visibility as related influences on outdoor participation.

Explanation of Why Results May Differ

Future empirical findings may differ from the simulated pattern for several reasons.

First, perceived safety differs across individuals. Previous experiences, familiarity with a location, personal confidence, and expectations about social interaction may shape how the same environment is interpreted.

Second, objective environmental conditions may not always match subjective safety perceptions. An outdoor location with extensive safety infrastructure may still feel uncomfortable to some participants.

Third, companionship may have different meanings for different women. Some may experience participation with others as reassuring, while others may prefer independent recreation and place greater value on autonomy.

Fourth, barriers unrelated to safety may have a stronger influence on participation decisions. Time limitations, transportation, cost, weather, caregiving responsibilities, physical accessibility, and activity preferences may affect outdoor recreation independently of perceived social safety.

Fifth, the relationship may differ across recreational settings. Urban parks, neighborhood streets, hiking trails, beaches, recreational facilities, and rural environments each have distinct social and environmental characteristics that may influence safety perceptions and participation in different ways.

9. Research Contribution / Implications

The central contribution of this study is the development of a social-behavioral interpretation of perceived safety. Safety is treated not only as an objective feature of outdoor environments but also as an individual's assessment of whether social interaction, visibility, access to assistance, and surrounding environmental conditions support comfortable participation.

This perspective is important because participation decisions may be influenced by subtle social and environmental cues. An individual may consider whether other users appear trustworthy, whether the surroundings are easy to observe, whether help seems accessible, and whether participation is likely to involve unwanted social attention.

The framework also emphasizes that companionship and social safety should not be treated as the same concept. Companionship may support participation, particularly in unfamiliar settings, but a socially safe environment should also allow individuals to participate independently when they prefer to do so.

For outdoor recreation programs and community planning, several implications follow:

Social safety should be assessed alongside physical safety, because users may interpret interpersonal and environmental conditions differently from objective infrastructure measures.

Companionship opportunities can support participation, especially when individuals are unfamiliar with an environment, but access to recreation should not depend on having a companion.

Environmental visibility can influence confidence, making lighting, pathway design, sightlines, and predictable user presence relevant to perceived safety.

Community trust matters, because the presence of other people is not automatically reassuring unless they are perceived as legitimate and supportive users of the space.

Participation should be measured behaviorally, including frequency, duration, timing, location, and independent versus group participation.

Women's experiences should not be treated as homogeneous, and future research should examine differences related to age, location, experience, accessibility, and social context.

The broader implication is that increasing participation requires attention to the conditions under which outdoor recreation feels psychologically acceptable and socially comfortable.

10. Conclusion

Perceived social safety represents an important social-behavioral dimension of women's participation in outdoor recreational activity. Outdoor recreation takes place within physical environments, but participants also interpret the social conditions surrounding those environments. Perceived access to assistance, the presence of trusted people, environmental visibility, social predictability, and expectations about interpersonal conduct may all shape how an outdoor setting is experienced.

The illustrative analysis presented in this paper reports participation intention scores of 2.61, 3.67, and 4.49 across low, moderate, and high perceived social safety conditions. A second illustration identifies perceived social safety, companionship availability, and environmental visibility as potentially relevant factors. These values are simulated and should not be interpreted as empirical findings.

The literature supports the importance of considering both social and environmental influences when examining women's physical activity. Previous research has reported

relationships involving perceived safety, neighborhood social conditions, environmental characteristics, companionship, and constraints on outdoor recreation.

The study therefore proposes that future research should examine perceived social safety as a multidimensional construct rather than reducing it to a single fear-related variable. Empirical studies should distinguish objective environmental conditions from subjective safety assessments and should examine how social context shapes participation decisions.

Ultimately, the objective is not only to increase the amount of outdoor activity undertaken by women, but also to understand the social and environmental conditions that support greater choice, comfort, and autonomy in participation.

11. Limitations

The main limitation of the present study is the absence of an original empirical dataset. The numerical values reported in the Results section are simulated only for methodological illustration and should not be interpreted as observations from actual participants.

A second limitation concerns the multidimensional nature of perceived safety. Social safety may involve interpersonal treatment, concerns about harassment, social trust, environmental visibility, familiarity with the setting, and perceived access to assistance. A single measure may therefore fail to capture all relevant dimensions.

A third limitation relates to the diversity of outdoor recreational environments. A neighborhood park, an urban walking route, and a remote hiking trail may generate different safety perceptions because their social and environmental characteristics differ substantially.

A fourth limitation concerns individual differences. Previous experiences, age, familiarity with the location, physical capability, and personal preferences may shape safety perceptions independently of environmental conditions.

A fifth limitation is the distinction between intention and actual behavior. A participant may report willingness to engage in outdoor recreation but still fail to participate because of time constraints, transportation, weather, cost, caregiving responsibilities, or other practical barriers.

A sixth limitation concerns the role of companionship. Companionship may support participation for some individuals, while others may prefer independent recreation. Its relevance should therefore not be assumed to be the same across all participants.

A seventh limitation is that the proposed framework focuses specifically on women. The findings and theoretical propositions should not be generalized to other populations without appropriate empirical investigation.

12. Future Work

Future research should develop multidimensional measures of perceived social safety that distinguish interpersonal safety, environmental predictability, social trust, visibility, and perceived access to assistance.

Longitudinal studies should examine whether changes in perceived safety are associated with changes in actual outdoor participation over time. Objective participation measures should be included where feasible to complement self-reported behavior.

Future studies should also examine possible mediation pathways. For example, perceived social safety may mediate the relationship between neighborhood social conditions and outdoor participation. Such relationships should be tested using real participant data rather than assumed from conceptual models.

Experimental research could examine responses to standardized descriptions or images of outdoor environments that differ in visibility, social presence, lighting, accessibility, and companionship availability.

Qualitative research is also important because numerical measures may not fully capture the reasoning behind participation decisions. Interviews and participant diaries could provide deeper insight into how women evaluate locations, timing, companionship, and social interactions.

Future research should further examine intersectional differences without assuming that all women experience outdoor environments in the same way. Relevant factors may include age, socioeconomic position, disability, cultural background, residential setting, and previous experience with outdoor recreation.

Finally, community-level research could examine whether improvements in physical infrastructure, social programming, community presence, and information about available assistance are associated with measurable changes in perceived social safety and participation.

13. Declarations

Conflict of Interest

The author declares no conflict of interest related to this manuscript.

Funding

No external funding was received for the preparation of this simulation-based manuscript.

Ethics Statement

The present manuscript does not report original data collected from human participants. The numerical values are simulated solely for conceptual and methodological illustration.

Any future empirical study involving human participants should obtain appropriate institutional ethics approval where required and should follow informed-consent, confidentiality, privacy, and responsible data-management procedures.

Data Availability

No empirical participant dataset was generated or analyzed for this manuscript. The quantitative values reported in the Results section are simulated illustrative values and should not be interpreted as observations from an actual participant sample.

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