

# PERSONAL SAFETY ON UNIVERSITY CAMPUSES – DEFINING PERSONAL SAFETY USING THE DELPHI METHOD

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Personal safety is an issue of increasing importance in the management of built environment facilities. This paper discusses research being undertaken by the Suzy Lamplugh Trust Research Institute (SLTRI) at the University of Glamorgan that focuses upon personal safety on university campuses. The aim is to improve the facilities and their management so that all its users are and feel secure. A review of current literature revealed that no rigorous, academically useful definition of ‘personal safety’ exists. It was therefore fundamental to define ‘personal safety’ in order to identify the principal focus of the campus study, and to delineate the scope of the project. The resulting definition of personal safety would serve as a basis for this research, and also for others within the academic and practice communities. The definition was formulated by means of a “Delphi Study,” a well-established social science research method that seeks the exchange of expert ideas and views about a given issue through a structured communication process - in this case through a series of emailed questionnaires. The responses were anonymously fed back to the expert group for evaluation and refinement until a consensus was reached and an accepted definition of personal safety was attained. The definition will be utilised in the study of campus users’ perceptions of personal safety on the university campus. Using virtual reality technology, a standardised virtual representation of the campus facilities will be used as the stimuli in a range of focus groups. This subjective approach utilises the perceptions of various users to the environmental setting and will offer potentially rich insights into personal safety issues in relation to the design and management of campus facilities. A pilot study has been completed that explored the impact of facilities maintenance and management on personal safety concerns.

Keywords: crime, fear, personal safety, risk, university campuses.

## INTRODUCTION

Personal safety on University campuses is an important research topic because of the propensity of campuses to have specific crime and personal safety concerns linked to their design and user profile. Fazacherley (2004) reported, in *The Times Higher Education Supplement*, that “three-quarters of female students do not always feel safe walking around their university campus at night.” Previous research has shown that university students are a vulnerable demographic who are substantially at risk of being victimized, demonstrating the pertinence of this as a research topic. The British Institute of Facilities Management (2004) states that “effective Facilities Management provides a safe and efficient working environment which is essential to the performance of any business.” An exploration of how user groups interpret the

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campus environment, how the management of university facilities correlate with feelings of personal safety and crucially, how this may affect behaviour, will clearly have both beneficial and functional consequences for campus users and the university itself.

The Suzy Lamplugh Trust Research Institute (SLTRI) was established at the University of Glamorgan in 1999 in order to provide a systematic and empirical research base that would underpin the important work of the Suzy Lamplugh Trust, the national charity for promoting personal safety. Although the meaning of the term 'personal safety' is intuitively obvious, it was necessary to establish its precise meaning in order to provide a definable and clear basis for the research into personal safety on university campuses. The lack of a rigorously attained and sound academic definition of 'personal safety' within the reviewed literature and the wider public domain meant that a specific study was necessary to attribute meaning to this concept. According to Vercic et al (2001: 381) "all the disciplines and professions we know struggle with the multiplicity of often contradicting definitions." This is particularly true of personal safety, a term which has been used in a variety of different contexts and whose meaning is therefore ambiguous.

An established research method, the Delphi Method, was identified as the most robust and rigorous method to reach a definition. This was to ensure that the definition would not be based solely on abstract theory but would be derived from an empirically based process. Beyond this, a conceptual framework for ascertaining the complex and dynamic facets of personal safety was developed that would provide a broader insight into understanding how people attribute meaning to personal safety. Such a definition and framework would usefully scope the study of how the maintenance and management of campus facilities shape feelings of personal safety, and how possible modifications and solutions could improve personal safety and reduce feelings of fear. Having defined and scoped the problem, the technique to be used in the campus study will be based on a 'Virtual Reality' (VR) Panorama Tool. This technique was pioneered by the SLTRI in a study of personal safety in relation to the design, appearance and maintenance of railway station environments and facilities (Cozens et al 2003). The project used Quick Time Virtual Reality (QTVR) technology to present innovative and dynamic representations of the station environments to respondents as the environmental stimuli. The study findings have thus far resulted in the installation of a range of design modifications on railway stations across the Valley Lines railway network.

## **PERSONAL SAFETY ON UNIVERSITY CAMPUSES**

The prevalence and incidence of student victimisation correlate with a number of characteristics of both the student body and the university campus. Students, the majority of whom are young people, are especially vulnerable to victimization and fear of crime. In a recent Home Office report, Barberet et al (2003) claim that one-third of students are victims of crime every year, while Fisher and Wilkes (2003: 528) maintain that "the university student population comprises of a large number of people whose demographic characteristics parallel those who are at high risk of being victimized." The design and layout of the university campus and facilities can also lead to a higher propensity of crime. Sloan et al (1996: 84) observed that "campuses are typically park-like and easily accessible day and night. This openness may create high levels of fear and perceived risk of victimization among members of the campus community." Universities can have difficulty reconciling an 'open access' ethos with

a safe environment and this inevitably has knock-on consequences for the personal safety of campus users.

The research will probe the untapped theme of campus users' subjective perspectives of personal safety in terms of how they perceive and decode the physical environment on and around campus. In terms of crime prevention research, official crime statistics continue to provide the main data source on which responses are based but this approach has been criticised. The problem, according to Pain (1997: 120), is that such research typically uses "an objective methodology to deal with a subjective phenomenon". The University of Glamorgan campus will be used as a case study for this research. It currently has over 20,000 students and employs over 1300 staff. Utilising the dynamic VR representations of the campus environments, along with an overall qualitative research approach, will ensure that thorough and insightful data will be uncovered as to how people perceive and decode the environment and will provide revealing insights into how the design and maintenance of campus facilities impact on personal safety.

## **THE RESEARCH STUDY – USING THE DELPHI METHOD**

Personal safety is a term that is often misinterpreted and the lack of an unambiguous and widely accepted definition has resulted in the term being used in a variety of different contexts. According to Fitzgerald (1990: 1), a definition has to encapsulate "the variety of experiences to which the construct refers, and yet be specific enough to be of practical use". Therefore, an empirical process was the most robust way of defining the concept of 'personal safety,' with a qualitative research approach being the most appropriate to exploring a subjective phenomenon.

The Delphi Method is a well-established, systematic qualitative research technique that was first used for forecasting technological developments in the US in the early 1960s. The basic method of a structured communications process is highly versatile and is well recognised as a robust and systematic approach to data collection. The aim of the Delphi method is to encourage the exchange of ideas and opinions about a particular issue through an ordered and anonymous interaction process, usually over consecutive rounds of questionnaires, until a consensus of opinion is attained.

Linstone and Turoff (1975: 3) provide the following broad description that summarises the method:

*"Delphi may be characterised as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem."*

The Delphi method typically uses a panel of experts in the particular field being researched as respondents. The first questionnaire often starts with an open-ended question that serves to generate broad ideas by probing the deconstruction of the issue relevant to the research topic. Respondents are sent successive semi-structured questionnaires, usually three or four rounds, until a convergence of opinion is reached. Each questionnaire is formulated from the results of the previous one; responses are therefore reiterated, enabling the experts to reassess their initial opinions in the context of what the other respondents' views are. The anonymous nature of the process provides the opportunity for respondents to reassess their opinions and possibly alter their viewpoints over successive rounds without being identified.

## **THE PILOT STUDY**

A pilot study was beneficial on a number of levels. It allowed the testing of the practical application of the formulated questions and how respondents related to and

understood them. It also provided an opportunity for practicing the Delphi Method and, by completing a pilot, understanding what was needed to produce results. A pilot study also provided an opportunity for self-development. Three participants were identified for the pilot study, and instead of using four rounds of questionnaires, the pilot study consisted of a semi-structured interview. The study was designed to identify what factors contributed to personal safety and an exploration of the concepts and themes associated with it. The purpose of using an initial interview was to generate rich and in-depth data on the various concepts of personal safety. A semi-structured interview also provided the flexibility to probe interesting and pertinent issues as they arose.

## THE MAIN STUDY

A rigorous procedure was used to find the expert respondents for the main study – the pilot study findings revealed over forty determinants of personal safety; things that could impact on both perceived and actual personal safety, for example ‘crime’, security devices, personal experiences and the social environment. The sampling frame of experts was methodically drawn up by cross-linking subject areas with the various and exhaustive list of determinants of personal safety elicited in the pilot study. Experts were then contacted and invited to participate by letter or e-mail. The process consisted of three rounds of successive questionnaires. The pilot study revealed that interviews were impractical for the main study because they generated such a wealth of information as to be unmanageable on a much larger scale and, bound by time constraints, would take too long and be too complex to condense into the next round questionnaire. The first questionnaire asked the same four open-ended questions as the pilot study. The respondents’ notions of determinants of personal safety (see **Appendix 1, diagram 1**) were very similar to those given in the pilot study, giving greater weight to the findings. The second questionnaire was based on the responses of the initial questionnaire; a list of nine definitions of personal safety was presented to the respondents. They were asked to rate each definition in relation to the other definitions. For the third round questionnaire, the three definitions from the previous round which had scored the highest value were presented to the respondents who were asked to reconsider these remaining three definitions and rate them once again in relation to each other, in order of their preference. Then, a fourth definition was presented to the respondents; a composite of the three highest scoring definitions, which served as a more concise, coherent and honed definition. The respondents were then asked to rate this against their favourite from the three previous definitions.

## RESEARCH FINDINGS

From the final round of the Delphi study, the most favourable definition was the composite. This was agreed by all respondents indicating a complete group consensus. Therefore, this definition of personal safety would serve as the basis for the research:

*Personal safety is defined as an individual’s ability to go about their everyday life free from the threat or fear of psychological, emotional or physical harm from others.*

However, the pilot study and main study also revealed the following “add on” statements that enhance our understanding of personal safety:

*Harm can be intentional or accidental, and includes harm against your property and personal effects as well as against the person. Personal safety*

*is freedom from perceived risk, actual risk and fear, where risk is the likelihood of coming to harm. Personal safety is distinct from health and safety.*

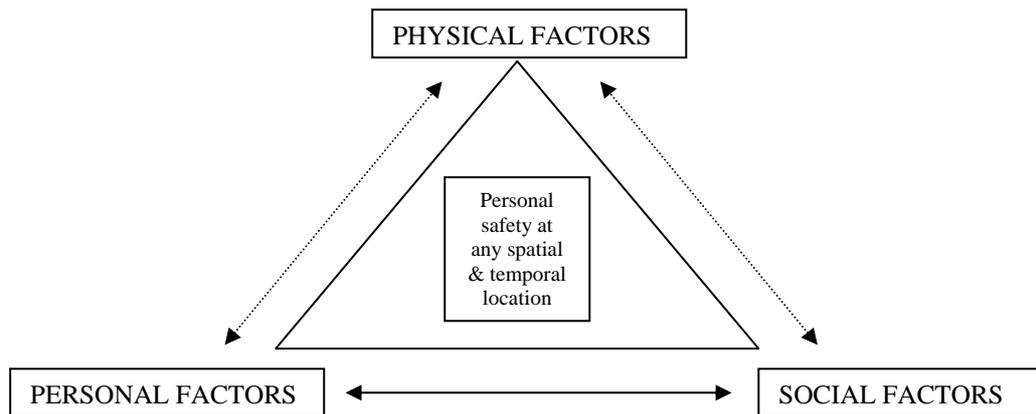
## **DISCUSSION**

Personal safety relates to the actual and perceived risk of coming to harm, and to the fear of being harmed, which have common determinants but are constructed in different ways. Actual safety is an objective measure of the risk while perceived safety is concerned with our judgement or assessment of the risk, while fear is based upon an emotional reaction to how you feel in a given situation. However, although the probability of being a victim can be empirically and statistically determined, from a practical point of view, the reality is that for each individual, in every space/time location, actual personal safety cannot be truly ascertained because of the unknown and unpredictable behaviour of other people. Therefore, to make a realistic assessment and use of the findings, the campus research will focus on the qualitative analysis of perceptions and feelings of personal safety and corresponding proximate solutions to reducing the perceived risk of harm in the campus environment. Our perceived personal safety (see **Appendix 1, diagram 2**) and actual personal safety (see **Appendix 1, diagram 3**) at any given time in any location is influenced by a combination of factors.

The causal factors that influence personal safety (both perceived and actual) can be usefully categorised into three groups:

- Social factors. The social environment is highly influential on an individual's sense of safety and well being. The presence, or lack of, other people in a certain physical environment can significantly affect the risk of harm.
- Physical factors. Features such as the design of the built environment, lighting and CCTV can impact on actual and perceived personal safety. These findings are echoed by Fisher and Nasar (1992) who discussed how certain physical characteristics of the university campus environment can increase vulnerability and feelings of fear.
- Personal factors. Personal safety fluctuates and is always constructed around personality and individual history. Pain (1997) found that life experiences and histories can have a significant influence on an individual's present day perceptions. Therefore they should not be disregarded when exploring personal the impact the physical and social environment has on personal safety.

The actual and perceived personal safety of an individual can therefore be explained using the personal safety triangle:



This model has similarities to the theoretical model discussed by Killias and Clerici (2000) to explore fear of crime. This identified personal, social and situational characteristics as contributors to vulnerability. In addition, Pain (1997) highlighted the tripartite relationship between individual identity, social interactions and the spatial environment as a way of fostering a clearer insight into causal determinants of fear. There are therefore parallels to be made between personal safety and the fear and risk of harm and the fear and risk of crime, an observation echoed by Austin et al (2002). They found in their study of neighbourhood conditions on perceptions of safety that although fear of crime and perceptions of safety were separate concepts, they had considerable theoretical and empirical commonalities.

## APPLICATION OF DEFINITION TO SAFETY ON CAMPUS

The study of personal safety on university campuses will reconcile three key issues that are related to personal safety; the problem of personal safety on university campuses, the importance of effective facilities management to sustain safe and efficient environments and the innovative VR technique that taps into subjective perceptions. The campus study will explore perceptions of personal safety in relation to the design and maintenance of the university environment using the innovative VR technique. By presenting a standardised ‘virtual-reality’ walk-through scene of a selection of campus locations or ‘stimuli’, the subjective viewpoint of campus users will be sought, from which a template of cost effective and practical campus design and management solutions can be attained. This method has already been utilised in a case study for the University (see **Appendix 2**)

## CONCLUSIONS

The Delphi study produced a definition that served to usefully scope the meaning of the term ‘personal safety’ in an unambiguous manner. It also provided a framework for understanding the complex factors that influence an individual’s personal safety, demonstrated that personal safety is a highly subjective and complex experience and indicated that there is difference between being safe and feeling safe. The Delphi study produced an empirically sound definition that can be usefully applied in a variety of contexts; it is succinct and functional and will be appropriate for application to the study of personal safety on the University of Glamorgan campus. For this study the focus will be on exploring the subjective perspective of campus users rather than a more statistical approach to actual personal safety. The subjective viewpoint of respondents’ perceptions and feelings of personal safety in response to a standardised ‘virtual reality’ walk-through scene of a selection of campus locations will be sought in a number of focus groups. This will contribute much to increasing our

understanding of how the very design, maintenance and management of the campus environment is interpreted and how this may affect behaviour, perceptions of risk and well being. By probing these perceptions, characteristic features of the campus environment that invoke feelings of fear can be identified. The study will further explore how such features of the campus can be modified to improve feelings of personal safety.

Future research would be necessary to monitor the perceived impact of any design and management changes to campus facilities that arise from the campus study. This would verify the preliminary findings and provide a sound basis for a more widespread application of such solutions. In addition, further studies could usefully exploit the methodology utilised in this study in a variety of other contexts. The definition of personal safety, the principle of effective facilities management and the use of Virtual Reality technology to probe personal safety concerns can be melded together to form a versatile, insightful and transferable research tool that could be used to explore personal safety concerns in relation to the facilities of any organisation or environment.

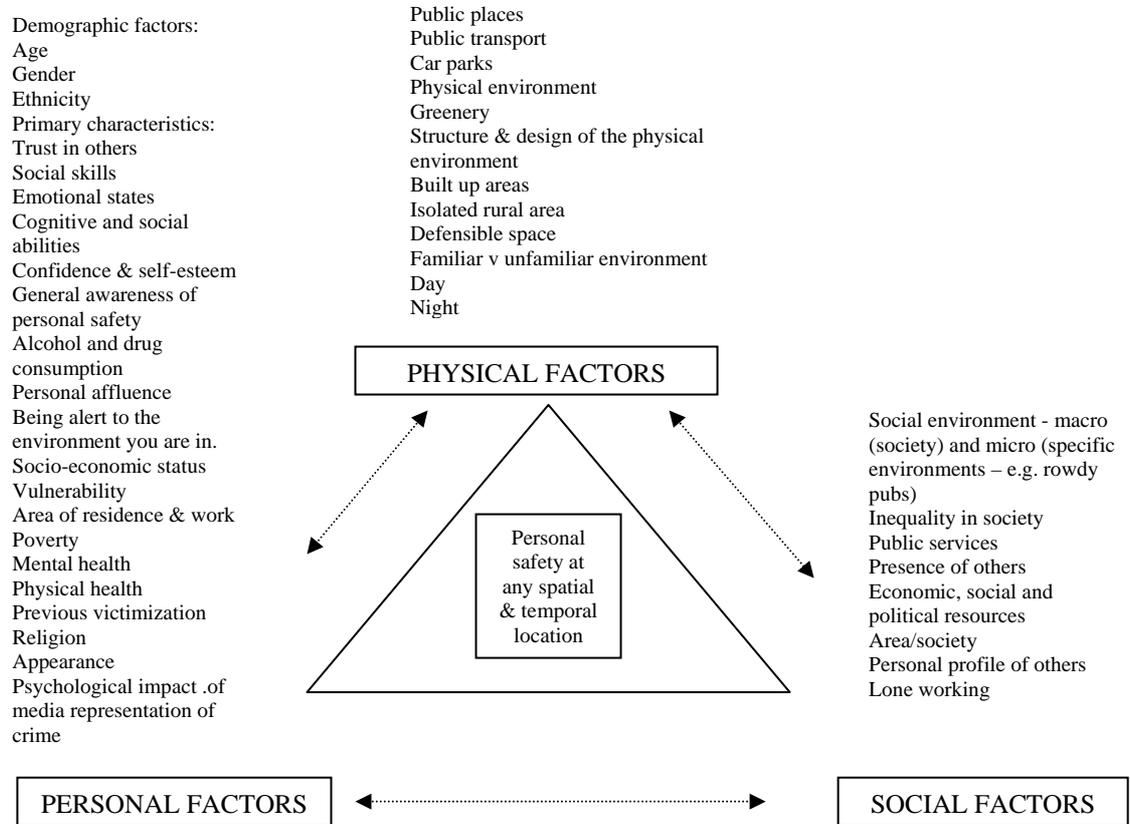
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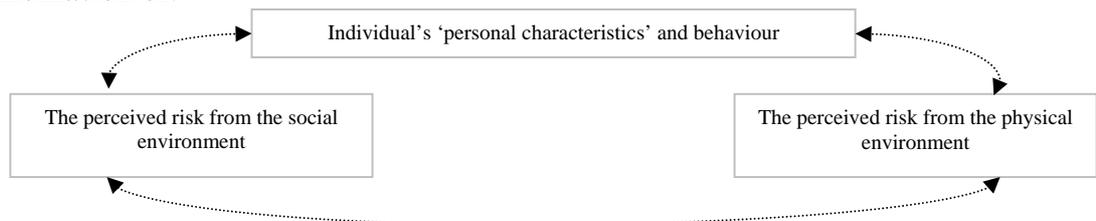
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## APPENDIX 1

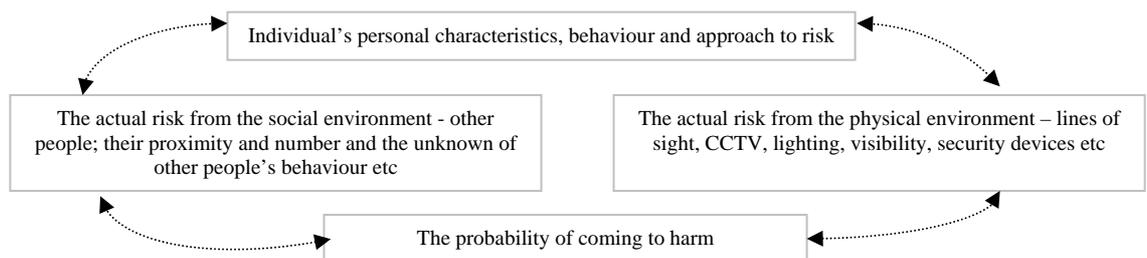
**Diagram 1 - Determinants of personal safety – findings from the main Delphi study**



**Diagram 2 – Perceived personal safety at any given time is influenced by a combination of:**



**Diagram 3 – Actual personal safety at any given time is influenced by a combination of:**



## APPENDIX 2

A summary of the perceptions of personal safety in relation to prospective university facilities

**Aim:** To explore how a representative sample of eight university staff and students perceived their personal safety on the route from a train station to a building that the University was considering purchasing to expand its activities.

**Methodology:** The group was first shown a virtual reality (VR) representation of the entire route on a projector screen, followed by individual consideration of each of the 13 VR panoramas. The respondents were asked to sum up their overall view of their personal safety on this route.

**Focus group findings:** Overall, the respondents did not have any major concerns about their personal safety: R1: *“No major concerns,”* R4: *“Nothing major for me, feel quite safe there.”* However, a number of issues arose that warranted attention. These were:

- Train station. Overall, the station was considered the weakest point in terms of personal safety; the station was a dead-end, the CCTV did not span the entire area and the help button point was not at all obvious.
- Quietness of the route. The route was perceived by the group to be eerily quiet. A number remarked that they were surprised by the lack of people and traffic and that this gave the area an almost sinister feel.
- Openness of route/ land development/empty spaces. The fact that the route was quite open, with wide roads and pavements, was perceived to promote personal safety because it allowed maximum visibility and an open space in which to walk. However, the waste ground was an issue because it didn't inspire positive senses of personal safety. R8 claimed that *“it is somewhere to lurk.”*
- Signage. A number of respondents stated that the lack of any signage indicating the route to the building was problematic since there was no obvious link to the University. R5 claimed that *“a big G would help psychologically on the university route to make me feel safer.”*
- Appearance of the building. The building itself was considered too austere in appearance. This could be improved by redesigning the paved area outside.
- Day-time v night-time. A key issue that emerged was that the VR walkthrough was only indicative of the route in daylight and it could have very different implications on personal safety if you walked the route in the evening. R1: *“if it's that quiet in the day, how quiet is it going to be in the evening?”*

**Conclusion:** Overall, the respondents perceived this to be a relatively safe route and did not have any significant concerns that would cause them to fear for their personal safety, or that would cause them to avoid the route or limit their behaviour. Many of the issues raised were cosmetic in that they could be easily and cheaply remedied (signage and making the building more student friendly). The building would fundamentally be a safe student environment and the route from the train station does not pose a significant risk to university students and staff.