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A Cross-Institutional Evaluation on the Supply and Demand of the Security Function

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A Cross-Institutional Evaluation on the Supply and Demand of the Security Function

By

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A Thesis Submitted in Partial Fulfilment of the Requirements
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At the Faculty of Communications, Health and Science
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Abstract

The security industry has undergone dramatic changes over the last twenty years due to a continually increasing demand for security services and products. Internal organisational pressure to the security function has forced a rethink in the way security managers conduct business.

Traditionally, security managers have only been aware of the level of service that customers receive by procedures these managers initiated. The availability of a comprehensive study detailing customer attitudes towards security supply is useful for understanding the security demand from the end user perspective, and providing knowledge to fine-tune the service.

A security manager with realistic and recent end user information concerning the security supply could be empowered with superior levels of operational decision-making knowledge. The ability for the security supply to be better matched to the security demand suggests that the service could operate with an enhanced degree of efficiency, for both the security provider and consumers.

Security management will benefit from this study, as the conceptual framework for identifying the supply and demand of a security function may be used to assess the validity of security services across the entire security industry. Furthermore, as the security industry and discipline develops, tools for the analysis of security services must also be advanced. Exploration of the supply and demand of the security function will provide the security discipline with a practical methodology for end-user evaluation.

The end user component of the study required the administration of an attitude assessment tool to a distinct group of customers utilising the tertiary security service. The Likert test comprised of twenty questions exploring five different issues that related to the security service. Combined, the emerging results provide an indication of security demand. Security supply was also assessed through the utilisation of a structured interview that was administered to security professionals

from each university. This facilitated in the understanding of each university's supply and demand on security.

Mean statement scores, standard deviation scores, correlation analysis (dimensions and gender) and the depth interview analysis technique were used throughout the data analysis phase of the study. Comparisons could be deduced between the supply and demand of the security service in relation to the associated dimension group.

Results of the Likert questionnaires required analysis in order to extract the most useful information from them and make comparisons between the associated security supply and the contrastive university. Murdoch University appears to offer their students a security service superior to Edith Cowan University and this was likely to be the cause of the consistently greater endorsement of the security issues from Murdoch University residents.

A framework for the identification of the supply and demand was developed to assist the university security manager to better identify anomalies in the provision of security in the future. This framework provides superior levels of justification towards the concept of enhancing the university security service.

A likely example of the potential for this study to support the security manager is with consideration for security outsourcing. The framework can support for and against arguments for outsourcing the security service, by drawing on educated evaluations of both the security supply and demand.

The procedure for this study demonstrates the effectiveness of analysing end user attitudes of a security service as a means to develop greater levels of understanding for the security manager on the differences between supply and demand. This method is designed to assist the security manager to better focus the service towards the most prevalent customer issues.

Declaration

I certify that this thesis does not, to the best of my knowledge and belief;

    i.   Incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;

    ii. Contain any material previously published or written by another person except where due reference is made in the text; or

    iii. Contain any defamatory material.

Signature   _____

Date   30 - 01 - 2001

Acknowledgements

Definition of Terms

Security: "...implies a stable, relatively predictable environment in which an individual or group may pursue its ends without disruption or harm and without fear of destruction or injury" (Fischer and Green, 1992, p.3).

Outsource: "...is the process, set by a contract, to transfer some of an organisation's recurring internal activities and decision rights to outside providers" (Greaver, 1999. p. 2).

Proprietary: Activities of an organisation that are held and conducted in private ownership, usually by the said organisation. Also referred to as "in-house".

Student: An individual who is currently attending full time tertiary education.

Resident: An individual who is currently attending full time tertiary education and is residing in university student accommodation.

Residential Assistant: An individual who is currently attending full time tertiary education, is residing in university student accommodation and is employed by the student village office to provide assistance and support to other residents.

Table of Contents

List of Visual Aids

Figures

Tables

Research is the art of seeing what everyone else has
seen, and doing what no-one else has done.

Anonymous

CHAPTER 1

Introduction

Background

The security industry has undergone dramatic changes over the last twenty years due to a continually increasing demand for security services and products. Community concern for the protection of people, information and assets have been influential in governing the evolution of the security industry. Today, crime is a commonplace occurrence and security has become an integral component of domestic, commercial and industrial environments, which provides services and products capable of combating this threat.

Just as the nature of crimes has escalated over the years, security has responded to these concerns through the rapid development of a wide range of products and services. In this way, security has moved from providing basic physical protection of assets to a dynamic security industry capable of protecting material and non-physical assets throughout a wide range of situations. Forces affecting change in the security industry can be externally or internally sourced. External pressures from the community concerning the increase in crime, as well as internal organisational pressures such as the economic obligation from upper management, are representative of these forces.

Internal organisational pressures to the security function have forced a rethink in the way security managers conduct business. These pressures are compounded, as the security function must justify itself as a revenue-generating department where security managers then have the difficult task of providing a service that matches the requirements of its customers. The apparent trend that is common across many organisations in Australia is upper management's continual cost cutting and efficiency expectations (Dalton, 1995, p. 195). Therefore, Burstein (1996, p. 32) suggests a popular option for managers (including security) when presented with economic or performance obligations is to outsource some or all of that particular function.

Greaver (1999, p. 2) refers to outsourcing as, "the process, set by a contract, to transfer some of an organisation's recurring internal activities and decision rights to outside providers". These recurring functions can include food services, cleaning, maintenance, security and even accounting and legal representation. Reasons for organisations opting to outsource non-core functions will depend largely on their strategic and operational objectives (Dalton, 1995, p. 242). Outsourcing has become a commonplace practice in many organisations and security appears to be a suitable candidate.

Some debate is evident as to whether outsourced security is a viable alternative to proprietary security (Dalton, 1995, p. 225; Burstein, 1996, p. 25; Minoli, 1995, p. 3; Domberger, 1998, p. 49). This is can be indicated by the differences in security functions within the same genre. For example, Perth universities have different types of security functions even though they are protecting similar

assets. Perth universities operate a security service in the way they best feel provides an efficient service for their customers. Campus security departments will typically comprise of a team of security officers who provide security services for on-campus environments, as well as providing 'customer service roles' for staff and students. In effect the issue of contract versus proprietary guard services is significant, as selecting the correct managerial options can increase the effectiveness security. This can be a complex decision that is further compounded by the lack of decision-making tools available to the security manager.

The popularity of outsourcing non-core elements, which can include the security function, has many senior managers believing it is a cost effective technique for their organisation. This belief can result in a failure to sufficiently provide services to the organisation if careful analysis of the organisation's operational objectives and an evaluation of the functions interrelationships are not properly considered before making an outsourcing decision. Given the diversity of security functions between Perth universities, it appears that each senior management group has assigned them different levels of consideration and value. This study will provide a method to assist tertiary security managers identify differences in security supply and demand with the aim to ultimately provide enhanced operational knowledge to manage security service concepts such as outsourcing.

The Significance of the Study

Security as an academic discipline is still very much in its infancy and has recently taken its first steps towards being fully recognised as an entity (Fischer & Green, 1992, p. 47). As a result, the body of literature and conceptual tools available for analysis are limited when compared to other, better-established disciplines (McClure, 1997, p.1). The outcomes of this study will contribute towards the development of security as an academic discipline by building on the knowledge and tools available to individuals.

However, there are a number of related theories from other disciplines, as well as specific security theories, that have been adopted, evolved or developed over the years. A complex interrelationship has resulted between technology, people and management processes within a security function and because of this, a variety of differing fields have been utilised to aid in the provision of effective security (McClure, 1997, p.1). Each of these areas will influence the practicing of security and are of considerable assistance for this reason. This study further utilises a number of theories and practices originating from other disciplines to achieve the research objectives.

An objective of this study is to increase the body of security management knowledge by developing and demonstrating a method of end user evaluation. The intention is to prove the reliability of the method for determining the differences in security supply and demand. Determining the most pressing security function issues will involve a study, including the security customers, in

order to assess the supply and demand. This will provide an indication of security suitability from a customer perspective. The core component of the study will concentrate on analysing and comparing the attitudes of two Perth universities' residential population towards the security function.

Security management will benefit from this study, as the conceptual framework for identifying the supply and demand of a security function may be used to assess the effectiveness of security services across the entire security industry. Future adaptation of this technique may prove to be a useful indicator for security effectiveness. Furthermore, Fischer & Green (1992, p. 56) suggest that as the security industry and discipline develops, tools for the analysis of security services must also be advanced. Exploration of the supply and demand of the security function will provide the security discipline with a practical method for end-user evaluation.

Purpose

The purpose of this study is to provide security managers from tertiary institutions with a comprehensive method for identifying the differences between the supply and demand of a security function. The ability for the security manager to make accurate and effective decisions will depend on an understanding of the issues relevant to the function's supply and demand. This study will provide a conceptual framework for that understanding to be accomplished.

Research Questions

A number of applicable questions must be answered to ensure that issues relating to the supply and demand of the security function are considered. Upon completion of this study, the research questions will be sufficiently addressed with consideration for limitations and the scope of the study (O'Loughlin, 1998, p. 4). This study aims to answer each of the following key questions during the course of the research:

1. What are the attitudes of residential students towards the services that proprietary university security provides?
2. Which issues provide the greatest difference in university security supply and demand?

3. What are the differences in supply and demand between two similar university security services?

4. How can customer security service issues be identified?

The study will explore solutions to each of the above questions in order to gather a comprehensive representation of residential customer security service issues. It is expected that analysis of end-user's attitudes will provide a more accurate indication of a security function's service and suitability towards its customers. Identification of these end user issues can equip security management with improved knowledge to facilitate their operational decision-making capabilities.

CHAPTER 2

Literature Review

The literature review will outline a number of factors that must be considered in a study concerning the effects of the security function's supply and demand. The information contained in the review demonstrates the foundation of existing knowledge on which the study is based. The review will focus on methodology, attitude measurement and gender considerations.

Methodology Literature

A broad overview of the methodology that has been adopted for the type of research being completed is necessary. Wadsworth (1997, p. 107) and Tuckman (1978, p. 89) refer to methodology as commonly understood to mean an overall or under-lying theory of research practice. This simply refers to an abstract but logical mentality that governs the format of the research, sometimes called philosophy of science (Wadsworth 1997, p. 107). Further detail and specifics of the processes utilised throughout the research are detailed in Chapter 3. This review focuses on a discussion of the methodology adopted for this study: the exploratory research belief.

Burns & Bush (2000, p.130) identify three types of research design: exploratory, descriptive and casual. Exploratory methodology is commonly used in an

unstructured, informal research procedure with the aim of gaining background information about the general nature of the research problem. This is usually initiated when the research topic is relatively new and uncharted and there is a desire to explore possible hypotheses generated by new information (Lin, 1976, p. 137). While this approach may be informal, the research still exhibits systematic and structured procedures flexible enough to allow the researcher to investigate components to the extent where sufficient understanding of the problem is achieved. Burns & Bush (2000, p.131) suggest that exploratory research is used to satisfy a number of situations:

1. Gaining background information to the problem at hand.

2. Helping to define terms and concepts.

3. Allowing a clarification of the definition of the problem and hypotheses.

4. Helping the organisation for whom the research is been conducted to prioritise problems in order of importance.

This research will to some extent utilise exploratory research to satisfy all these aspects. However the study will be primarily operating in situation one, with the presentation of the findings capable of assisting university security managers, hence satisfying situation four. Use of a quantitative measurement tool to elicit this information will be instrumental in satisfying the methodological requirements.

Exploratory research can be completed through the utilisation of a number of different tools. Burns & Bush (2000, p. 132) identify these as:

1. Secondary Data Analysis

2. Experience Surveys

3. Case Analysis

4. Focus Groups

5. Projective Techniques

The Experience Survey tool is adopted as the primary method of gathering information concerning residential perceptions of security supply. Ary et al (1979, p. 297) suggests that Experience Surveys are used to extract information from groups of people who are most knowledgeable on the issues relevant to the research problem, in this case, residential students. The information gathered from the utilisation of this method makes no formal attempt to ensure they are representative of any defined group of subjects (Best & Kahn, 1989, p. 78). In addition the information gathered from the residential students will not be benchmarked to an existing framework, as none presently exists. Instead, the information will be used to propose a framework for utilisation by tertiary security managers to identify differences in security supply and demand.

Attitude Measurement

This study employs an attitude measurement tool in the form of a Likert test, to efficiently extract the attitudes of the student village community residents. Lemon (1973, p. 8) describes attitude as, "a mental state of readiness, organised through experience exerting a directive or dynamic influence upon the individual's response to all objects or situations with which it is associated". The use of the Likert test is well accepted and a large volume of literature is readily available that discusses this attitude measurement technique (Likert, 1974, p. 233; Anderson, 1990, p. 211; Tuckman, 1978, p. 179; Chadwick et al, 1984, p. 385; Mason & Bramble, 1978, p. 293; Blalock & Blalock, 1968, p. 94; Payne, 1974, p. 189; Lemon, 1973, p. 72; Gay, 1976, p. 98; Ary et al, 1979, p. 186; Lin, 1976, p. 183).

Henerson et al (1987, p. 11) suggests the process of utilising attitudes, as a form of measurement is arguably the most ambiguous of all techniques available to social scientists. However, everyone has attitudes and these in turn can be elicited and processed to form gauges for particular topics (Girod, 1973, p. 2). In order to form a result, the extraction of attitudes must be made by analysing individual's statements of opinion indicated through the use of a scale (Maranell, 1974, p. 231).

Likert tests consist of a series of statements that are related to an individual's attitude toward a particular topic. The statements consist of two types, ones that indicate a favourable reaction and others that indicate an unfavourable reaction

to a particular subject (Ary et al, 1979, p. 186). The intention of a Likert test is to administer it to people in order for them to indicate the extent to which they endorse each statement. Anderson (1988, p. 427), Keats (1988, p. 258), Dunn-Rankin (1983, p. 8) and Lin (1976, p. 183) suggest that the typical response options are strongly agree, agree, undecided, disagree and strongly disagree.

The following is an example of a Likert test statement:

It is safer for pregnant mothers to drive without a seatbelt.

Strongly Agree   Agree   Undecided   Disagree   Strongly Disagree

A successful Likert questionnaire will contain an array of positively and negatively phrased statements used to stimulate the mind of the respondent. Tuckman (1978, p. 181), Payne (1974, p. 189) and Hopkins et al (1990, p. 293) suggest a positively worded statement would be assigned scoring values as:

$$SA = 5, A = 4, U = 3, D = 2, SD = 1$$

A negatively worded statement would be assigned scoring values as:

$$SA = 1, A = 2, U = 3, D = 4, SD = 5$$

The reverse polarity of the scoring values for negative statements is intended to provide a total positive score, for someone who agrees with the subject in question. Lin (1976, p. 184) suggests an individual with opposing attitudes towards the subject statements will disagree with positive items and agree with

negative items, thus returning a lower, signifying a negative total score. Results that return scores in close proximity of three are statistically insignificant.

Construction of a Likert test must be evolved over a number of stages. The topic to be explored may be broken into a number of subtopics or dimensions, where each will assess attitudes towards an assortment of interrelated categories. This test is administered to a pilot test group of people and each individual survey result is correlated against the total results. Tuckman (1978, p. 181) suggests this provides an indication of the degree of agreement where the most strongly endorsed statements will yield the greatest degree of internal consistency. Statements that do not return strong responses are either reworded or eliminated.

A mean statement score is then calculated from the total individual statements of the completed questionnaires (Payne, 1974, p. 190). This average will indicate the average attitude of the respondents for that particular statement. Additionally, the individual dimension means is also calculated to generate information on the difference of attitude between the sub-topics. Likert (1974, p. 238) indicates the standard deviation is also calculated for all corresponding statements to provide an indication on the variability of the statement responses. Although a standard deviation score close to zero will suggest that the variation of responses was very limited, increasing values will imply that the responses for that statement were increasingly fragmented. Hence, the standard deviation of a set of responses can be used as an indicator towards the overall confidence of those results.

The Likert test has been chosen because it offers the respondents a scale from which to choose a response that most closely represents their attitude. Anderson (1990, p. 212) suggests collating and analysing the data is made easier because numerical values are assigned to each response in order for statistics to be calculated. However, while this test allows some flexibility in answers, it does not allow for independent thinking. For instance, respondents can only consider what is presented to them. This discrepancy relates to an inherent disadvantage of the Likert test as outlined by Best & Kahn (1989, p. 198) and Gay (1976, p. 99) where it is suggested that people select the implicit response option that they think should be selected instead of what they truly believe.

Furthermore, Lewin (1979, p.163) suggests that each respondent may read the interpretation of the same Likert statement differently. Just as Likert scales depend on an individual's attitude assessment, these attitudes may also be responsible for people to approach and interpret situations differently. For example, the definition of "agree" may have a different level of meaning for individual respondents.

Overall, the nature of the Likert test is ideal for this research situation because of the basic flexibility it offers the respondents and the ease of data processing for the administrator. The use of a relatively small number of Likert statements administered to a large number of participants decreases the level of effort and inconvenience to the individual while increasing the validity of the processed results for the researcher. For a survey of residential students, the requirement for a test procedure that is easily understood by the respondent and one that

possesses a fast completion rate is paramount. For this reason, the Likert scale is believed to be the most suitable technique for assessing the attitudes of residential students.

Gender Considerations

The nature of this study requires some understanding of gender attitudes since a core component of the study will be evaluating the attitudes of the female population. Information pertaining to the feminist mentality is beneficial when constructing and administering the Likert test. Research in this field has found that females typically tend to be more expressive than males, with regard to feelings and emotions (Lorber & Farrell, 1991, p. 78). This needs to be considered because greater and more flamboyant results can be obtained from testing females. Additionally, Samuels (1995, p. 132) suggests females tend to be more sensitive and conscious of issues relating to security and safety compared to males. The literature highlights feminist considerations that are useful for appreciating the female perspective when conducting mixed-sex research.

Alder & Denmark (1995, p. 156), Bromley & Territo (1990, p. 91) and Fischer & Sloan (1995, p. 167) suggest that men commit the majority of crimes in the community. It is therefore reasonable to assume that many females are the victims of these crimes. This is supported by Kendrigan (1991, p. 12) who suggests that females are victims of violence at a rate of three times that of men. The fact that females are more vulnerable as victims of crime is likely due to the

15

power differences between males and females (Lorber & Farrell, 1991, p. 25). Groups of people, who are physically week, are more open to the threat of violent crime (Eisenstein, 1991, p. 103). One can appreciate the heightened concern about personal safety that females possess as a result of this trend evident in many communities.

This trend that is apparent in the wider community is expected to be reflective in the smaller residential settings of universities, since the individuals that make up this population are sourced for many different areas of society (Bromley & Territo, 1990, p. 11). Fennelly (1989, p. 543) suggests that precautionary measures that university students ought to adopt, for the avoidance of violent acts against them, should be no different to those practiced in the wider community. Warren (1988, p. 29) indicates that females demonstrate an understanding of personnel safety by removing themselves from situations that may be precarious. The perceived vulnerability of residential female students is likely to demonstrate the existence of attitudinal differences in a small-scale population.

The acceptance of the difference between males and females, particularly with regards to attitudes, is pivotal on a number of key factors. Hooks, (1984, p. 86) suggests that females think and act differently, conceptualise power differently and therefore have inherently different value systems. The more passive female mindset differs from the controlling instinct of males and as a result, females are more likely to identify subtle differences that males will overlook. The representation of the attitudes in student villages is likely to produce a difference between gender feelings, with females expressing more passionate responses.

Reliability

Reliability refers to the tendency in a respondent to answer in the same or in a very similar manner to an identical or near identical question (Carmines & Zeller, 1979, p. 11). A measure is deemed to be reliable when it elicits an identical or very similar response from the same person with successive administrations. Hemerson et al (1987, p. 147) suggests reliability occurs when an instrument is free from random response error or when individuals are consistent in their responses and do not answer randomly. Unreliable response values cannot be depended upon as useful information and the cause of the unreliability should ideally be eliminated.

Determining the cause of unreliability is a difficult task because there may be any number of reasons as to why an individual is not returning reliable information. Henerson (1987, p. 147) suggests the questionnaire statements may be interpreted incorrectly, the respondents may not be paying enough attention when completing the survey or there may be confusion as to what the questionnaire is asking. While it is extremely difficult to remove the likelihood of unreliable returns completely, the researcher is able to use reliability assessment methods to minimise unusable responses.

A number of different methods are used to assess the level of reliability of the responses to a study. However, the Likert instrument employed in this research project utilises the Equivalent Forms Reliability measure. This technique relies on a similar aspect as the definition of reliability and presents the same

statements, which are worded differently, within the same questionnaire (Carmines & Zeller, 1979, p. 40; Henerson et al, 1987, p. 148; Tuckman, 1978, p. 162). The aim is to let the respondents believe they are answering different questions although they are actually answering the same statement several times. The masking of the same statement can also be achieved through reversing the polarity of one version. This method is also referred to as control statements, where the researcher can control the repetitive answering of some statements in an attempt to assess the respondents' level of reliability (Balock & Balock, 1968, p. 56).

Additionally, a further indication on the reliability of a set of results can be indicated through the statistical calculation of the standard deviation (Mason & Bramble, 1978, p. 269). The standard deviation will provide a numerical result that represents the level of confidence of a particular array of responses. Calculating the standard deviation can support the Equivalent Forms Reliability measure during the data analysis phase by providing a numerical value that facilitates data comparison for total individual responses.

Burns & Bush (2000, p. 332) suggest the development of a reliable measuring tool requires statement changes and evolution over a number of questionnaire versions. This is best achieved through the refinement of the testing procedure utilising a pilot study, where inconsistencies are identified and eliminated. The use of the Equivalent Forms Reliability measure coupled with standard deviation calculations can assist with verifying and improving the reliability of the assessment tool.

Validity

Burns and Bush (2000, p. 332) and Bryman (1988, p. 28) define validity as the actual accuracy of the measurement, that is, exactly how closely the study measures what it is intended to measure. A strong difference exists between validity and reliability, as validity is an indication of the questions' level of consistency in returning valid answers. For example, a wristwatch set to the wrong time will be reliable (it constantly maintains the wrong time) but the time it displays will not be valid (it is inaccurate). A researcher can choose to utilise a number of different types of validity to identify the accuracy of results. However, this study has employed the face validity method.

Face validity is concerned with the degree to which a measurement appears to measure what it is designed to measure (Thorndike & Hagen, 1977, p. 60; Lemon1973, p. 37). Basically, it is a judgement call based on the superficial evaluation of the research tool by a suitably qualified professional. An expert can award face validity by closely inspecting the research tool through subjective evaluation and recommending changes accordingly to increase the face validity level. Appendix D contains the face validity assessment.

While face validity is considered to be the easiest to perform on a research tool, and often the least effective, large research projects should utilise the results of at least two validity methods in order to maintain integrity (Burns & Bush, 2000, p. 335). However, the nature and time constraints of this honours study permits only the use of face validity, yet it seeks to be effective.

Justification

Attitudinal assessment of customers as a tool for security managers has been largely ignored primarily because of the time and resources involved to successfully carry out such a project. However, the adoption of the findings from this study will assist the security manager in the decision-making processes concerning the security supply to its customers. Traditionally, security managers have only been aware of the level of service that residents receive by procedures these managers initiated (security supply). Therefore, the availability of a comprehensive study detailing customer attitudes to security supply is useful for understanding the security demand from the end user perspective with the intent to fine tune the security service.

A greater understanding of residential security requirements is useful during times of increasing pressure from upper management to provide a security service that operates in terms of efficiency, effectiveness, and equity and in an economical manner. This study seeks to provide a developed understanding of these aspects from a specific end user perspective within the university community.

A practical application for the information obtained throughout the course of this study is to provide an argument either for or against the case to outsource security. The identification of elementary issues of the security supply, and how these impact on residential students, can assist the security manager to evaluate whether a proprietary or outsourced security service can best supply an

acceptable level of security. The definition of "best" is the provision of the fairest balance of security components that satisfies the requirements of end users (in this case residential students) and upper management.

The inherent difficulties that have been prevalent in the past in relation to a university security service is the discrepancy between the supply of security determined by upper management and the demand for security services from end users. This tendency may be caused by upper management's failure to recognise the needs of its end users. So, this study will provide customer information designed to assist management in security decision-making, by providing an insight of end user requirements so as to enable effective security with enhanced evaluative judgment.

CHAPTER 3

The Study

Some level of formal research design is required throughout the study period to maintain investigation goals and ensure that useful information is available at the concluding stages. Wadsworth (1997, p. 27) defines research design as the overall strategy of how the study is organised with consideration for the research questions and procedures required to answer these. The type of research questions proposed by a study will ultimately determine the project direction and research design. This study aims to determine the attitudes of residential students towards their security service and compare this data to related circumstances to elicit useful information. An analysis of data sets such as male-female attitudinal differences, differences of supply and demand and of universities allows for determination of outcomes and conclusions.

Requirements for this study and the information that needed to be revealed determine the structure of the research process. Burns & Bush (2000, p. 71) describe a research process as steps that comply with the operational parameters of a study, where such a process was subsequently adopted for this study. The following is a brief discussion highlighting the steps involved in this research process.

The definition of the research problem is signified by the belief of a difference in opinion between the supplier and end users with consideration of a university security service's appropriateness.

The objective of the research is to determine the magnitude of the differences in attitudes between the supplier and a specific end user group of the security service. Satisfactory exploration of this objective over a number of issues will satisfy the research questions.

The exploratory nature of the study is defined as an informal process of collecting information in an unstructured manner (Lin, 1976, p. 137). An informal approach was determined to best suit the residential students and was considered the easiest technique to elicit the required information. This method determines the research design.

Utilising residential students and security professionals from two different Perth universities necessitated the identification of information types and sources. Residential students were chosen as an end user group representing the customers of the security service.

The attitudinal survey nature of the primary data source is indicative of a quantitative research approach (Bryman, 1988, p. 34). This required the use of effective and efficient methods to collect and analyse the data from the sample population. This stage determined the techniques for accessing data.

Designing the data collection forms required several adjustments to ensure the forms elicited effective data to analyse. The design of these forms required a short, simple format that would minimally inconvenience the participant.

Determination of sample plan and size ensures that a sufficient number of primary data participants were surveyed where the results represent an acceptable range of attitudes, indicative of the entire sample population. Planning for the sample population to be surveyed ensured that attitudinal contamination between subjects would not occur and thus result in the highest quality responses.

A procedure to collect the data was needed to consider the different subject types and the physical distances between campuses. Also the reliance of other key individuals towards the success of the study required that each sample population be surveyed at a mutually agreed time.

Several analytical techniques were employed to provide a breakdown of the data collected and highlight the most significant findings. This enabled data to be assigned significant meaning, hence transforming it into information.

The final stage required the entire research process to be compiled into a written manuscript for publication. This involved the assemblage of the research into a document that facilitates inspection of the research procedure, methodology and findings by security professionals, academics and end users.

It is thought that this research procedure ensures that all research questions are answered, and that the study's outcomes are valid and comprehensive. The following sections describe each stage in more detail.

Study Procedure

The study procedure consists of sequential progression through a number of fundamental stages, which develops the study so that appropriate information is finally accessible. A detailed overview of the instrumental stages and their respective components is discussed below. Figure 1 represents a linear flow diagram of the study procedure.

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┌─────────────────────────────────────────┐
│       Establish the Need for Research    │
├─────────────────────────────────────────┤
│              Define the Problem          │
├─────────────────────────────────────────┤
│         Establish Research Objectives    │
├─────────────────────────────────────────┤
│          Determine Research Design       │
├─────────────────────────────────────────┤
│     Identify Information Types and Sources│
├─────────────────────────────────────────┤
│     Determine Methods of Accessing Data  │
├─────────────────────────────────────────┤
│         Design Data Collection Forms     │
├─────────────────────────────────────────┤
│        Determine Sample Plan and Size    │
├─────────────────────────────────────────┤
│                Collect Data              │
├─────────────────────────────────────────┤
│                Analyse Data              │
├─────────────────────────────────────────┤
│   Prepare and Present Final Research Report│
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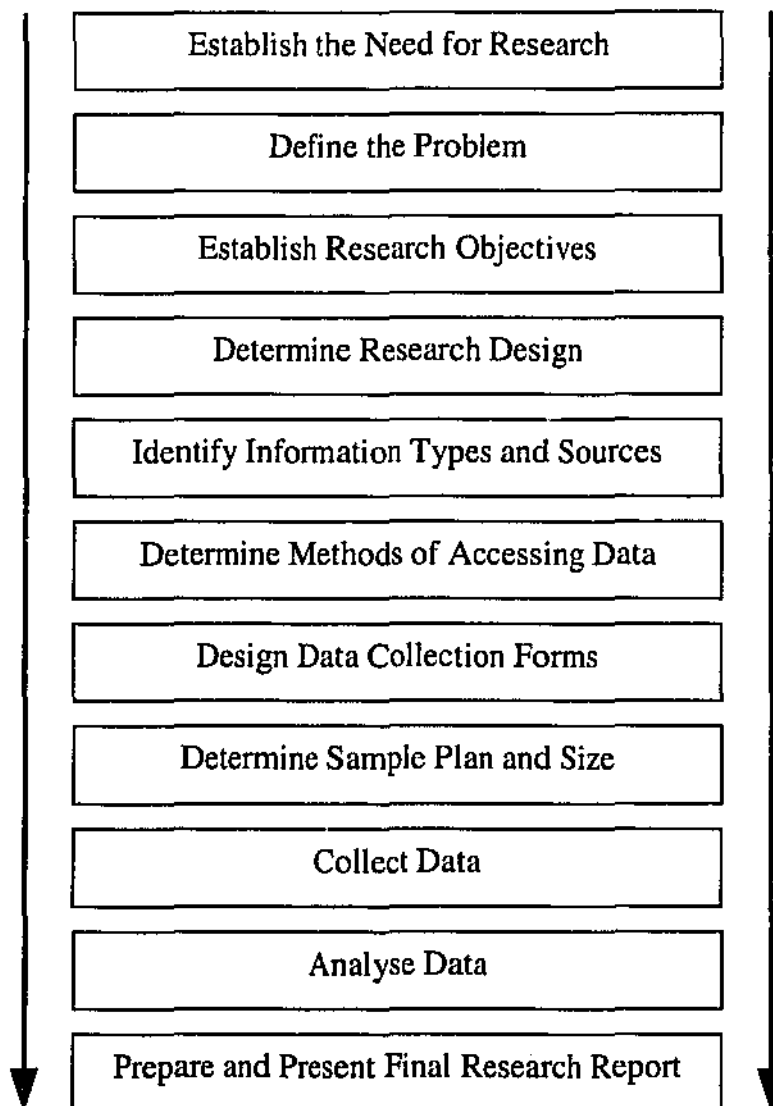
Figure 1: Linear Study Procedure (Burns & Bush, 2000, p. 71)

Stage 1: Establish the Need for Research

1. Commence research component for Bachelor of Science (Security) Honours Award.

2. Explore feasibility of assessing end users of a security service (Feasibility Study).

Stage 1 is the commencement of the study and the initial search for a research problem. It provides scope for the preliminary considerations of the research project. This phase permits the researcher to explore various avenues and narrow the study topic into a definable and achievable size.

Stage 2: Define the Problem

3. Explore how security management may benefit from the research.

4. Define and justify how end user attitudes can assess the suitability of the security service.

Definition of the problem requires an introduction of background considerations. The study proposes to empower security management with enhanced operational knowledge, so an exploration of potential situations that could employ such knowledge must be indicated. The consideration for outsourcing the security service was presented as the background example for this study. In order for the research problem to be quantified, justification of how end user attitudes could be used, as a suitability measure of a service, was essential.

Stage 3: Establish Research Objectives

5. Identify scope of study by defining research questions.

A number of research questions were defined early in the research process to guide the study and ensure that significant objectives were achieved at the conclusion. This approach assures that the study provides the correct information to solve the research problem illustrated by demonstrating an end user evaluation method for use by security managers.

Stage 4: Determine Research Design

6. Decide on a quantitative study approach utilising an exploratory research design.

While there are a number of different research designs available, the exploratory research approach best suits the objectives of this study because of the unstructured and informal manner in which information is collected. In this study, when dealing with such a large number of residential students, information can more effectively be elicited informally. In addition, the nature of utilising the Likert questionnaire and subsequent data analysis methods as the attitude measurement technique, results in a quantitative study focus.

Stage 5: Identify Information Types and Sources

7. Determine security service customer population best accessible for study purposes.

8. Contact Perth universities for research support.

9. Utilise Edith Cowan University and Murdoch University residential students and security professionals for study purposes.

A university security service provides support to a number of discrete customer groups. For this study, the residential student population was identified as the most suitable, as they possess knowledge of the security service and their accessibility as research participants is desirable. Also, the centralised nature of residential students was attractive to this study because it allowed expedient administration of the surveys, thus allowing more students to be surveyed within a short time frame. This resulted in a fairer representation of the overall residential attitudes.

In order to provide a comparison between security services and respective attitudes, two universities needed to consent to participate in the research. Of the four public Perth universities, two were eliminated: The University of Western Australia contains student colleges that differ in function and operation from student villages and Curtain University chose not to participate in the research based on an ethical standpoint. The resulting selection of Edith Cowan University and Murdoch University is most suitable as their residential students and security functions are comparable.

Stage 6: Determine Methods of Accessing Data

10. Identify and define security service issues (test items).

11. Determine instrument most suited for test situation.

Security service issues were categorised into five sub groups, or dimensions, and each contain four statements to be integrated into the Likert questionnaire. These dimensions have been designed to provide attitudinal data that can be analysed to present the most useful information concerning the security service. Security professionals at both universities were issued with similar dimension topics for the extraction of information. The most suitable exploration of attitudes towards security, governed the use of Likert questionnaires for residents and unstructured interviews for security professionals.

Stage 7: Design Data Collection Forms

12. Predict attitudes relating to the university security service.

13. Construct statements from predetermined attitudes.

14. Phrase statements in both favourable and unfavourable tenses.

15. Submit pilot Likert test to Associate Professor Clifton Smith for face validity evaluation.

In order to elicit useful information concerning the security service, statements in the Likert test were aimed at stimulating attitudinal responses. Construction of the Likert test required a prediction of attitudes likely to be expressed by residential students. Random statements in the Likert test were expressed both in the negative and positive tense, in order to provoke thought and consideration for each statement (Ary et al, 1979, p. 186). The initial Likert test was presented for face validity appraisal to a professional with knowledge of attitudinal assessment.

Stage 8: Determine Sample Plan and Size

16. Portion of student village population is decided as sample size.

17. Pilot test is administered to mutually exclusive test group.

18. Statements found to return statistically insignificant scores are modified.

19. Arrange for Residential Assistant help and Housing Office approval on all campuses.

The pilot-testing phase required a mutually exclusive test group that resided among the sample population. This pilot group was a selection of six housing units containing twenty participants at Mount Lawley Student Village. Feedback from this pilot group enabled the questionnaire format to be modified and a basic means analysis determined the statements that returned statistically insignificant scores. These statements were amended in order to provoke a stronger response for the main test group. Housing Office approval for the main testing phase and recruitment of local Residential Assistants for help with the administration of the main study was also organised at this stage.

Stage 9: Collect Data

20. Conduct main Likert test at Mount Lawley, Joondalup and Murdoch Student Villages.

21. Conduct interviews with Edith Cowan University Security Manager, Mr Eddie Alzier and Murdoch University Security Supervisor, Mr Dave Meyger.

The main study was administered to all three campuses under similar conditions. Each campus was administered the test during the hours of 1700 to 2030 with the support of a local Residential Assistant. Unstructured interviews were held with the security professionals on separate occasions in their offices. All components of the main study were completed over a period of 4 weeks.

Stage 10: Analyse Data

22. Input raw Likert data into computer for processing.

23. Calculate statistical information from Likert tests.

24. Evaluate results to provide study outcomes.

The data input component was a time consuming and repetitive task utilising the software package Microsoft Excel 2000. A number of statistical calculations were performed within the spreadsheet package, including mean, standard deviation, gender differentiation and dimension calculations. An evaluation of the study results will explore likely outcomes and provide suggestions to justify the response choices.

Stage 11: Prepare and Present Final Research Report

25. Compile all appropriate information into draft thesis.

26. Submit draft thesis to key personnel for content check.

27. Recompile and submit final thesis for assessment.

Draft thesis compilation involved the culmination of all research material into a form that enables conclusions to be produced by the presentation of logical steps

taken throughout the research and reference to the study outcomes. Final submission involves the assessment of the thesis by an individual examiner, followed by final document publication. The published document will be made available for interested parties to study.

Logical progression through the procedural steps described above provides justified evidence of the systematic and academic requirement of standards indicative of an Honours thesis. This study methodology achieves the objectives set by the initial research questions and provides the opportunity for the development of a practical tool for assessment of the supply and demand of a security function.

Sample and Subject Selection

Target Population

People who most benefit from, and are able to consider the use of the results of this study, represent the target population (Ary et al, 1979, p. 130; Anderson, 1990, p. 196). Therefore, the primary target population of this study is tertiary institution security managers that have a vested interest in ensuring that the security service they provide to their customers actually meets their requirements. The study also provides the opportunity for adaptation of the methodological framework for deployment in other organisational environments comprising of a security service and associated customers. This is the study's secondary and broader target population.

Primary Sample Population

The study required a sample population to elicit data as a gauge of demand for institutional security. Gay (1976, p. 65) suggests the purpose of selecting a sample is to gain an understanding of the entire population that constitutes the sample. The sample population was designed to : commodate two mutually exclusive test groups, situated in two different Perth universities. The following section describes the makeup of the two groups:

Group One: Edith Cowan University Residents

Group One comprised of residential students living in the student villages located on the Mount Lawley and Joondalup campuses of Edith Cowan University. Overall, 100 residents from Edith Cowan University were surveyed, with equal numbers from each of the two campuses. The decision to survey a selection of residents from both campuses was to determine whether the attitudes from each were to be reflective of the same security service that they receive. The source of 100 students was randomly collected from both Mount Lawley and Joondalup campuses without bias towards the recruitment process, excluding however, subjects at Mount Lawley campus that had already participated in the pilot test. The aim of this split campus approach was to collect attitudinal information that best represents residential attitudes towards security at Edith Cowan University in general.

Group Two: Murdoch University Residents

Group Two comprised of residential students from the student village located at Murdoch University, Murdoch Campus. In total 100 residents were surveyed on their attitudes towards the Murdoch security service. The source of the 100 students from Murdoch student village was a random selection of individuals with no bias for gender, course of study or nationality. Scherer (1969, p. 10) adds that student villages consist of very diversified populations. The aim of this approach was to collect attitudinal information from a wide variety of residential students that best reflects the total population of Murdoch student village.

The main study involved the administration of the test instrument to the randomly selected respondents with the help of Residential Assistants from the associated student village. The use of Residential Assistants was advantageous to the success and effort required to administer the test, and reassured the resident's during the testing phase. The Likert tests were administered to the groups on the three different campuses under similar conditions.

Assessment of residents' attitudes across two universities allowed for comparisons to be made between the supply and demand for security at that university. The use of selecting participants from both Mount Lawley campus and Joondalup campus of Edith Cowan University permitted the results to be more indicative of all Edith Cowan University residents' attitudes. Wide recruitment of the sample population for this study reinforces the confidence of the overall attitudes of residential students and allows a sound demonstration of the use of attitudes towards the supply and demand of security in the wider community.

Secondary Sample Population

To support the findings from the primary sample population concerning the demand for the associated university security, it is reasonable to suggest that an indication on the supply will facilitate the final findings and place the analysis of the study's data into perspective.

The second sample population involved the recruitment of Edith Cowan University's security manager and Murdoch University's security supervisor to provide information on the security supply that residential students receive. This was achieved through telephone contact with the security professionals where a meeting was convened. During these meetings, security supply information was elicited through the use of a structured interview. The administration of each interview for both security professionals was conducted under similar conditions.

The choice to recruit Murdoch University's security supervisor instead of the security manager was made with consideration to this university's hierarchy structure. At Murdoch University, the security manager position is not a dedicated role as it is at Edith Cowan University. Murdoch University employs an individual to perform the function of a general manager, of which security is one of these functions. It was thought that because the Murdoch security manager was involved in tasks other than security, and only with security at a strategic level, the security supervisor was most appropriate to satisfy the requirements for this study. The Murdoch University security supervisor is

better versed with the day-to-day operations of the security service and as such, was expected to be able to provide a better insight into the security supply.

To satisfy the original objectives of this exploratory study, the focus of the research techniques and results will be biased towards the primary sample population. The aim of this study is to produce a framework for the security manager to use to identify supply and demand differences; the security manager will find the security supply techniques of lesser interest. In practice, the security manager should be well aware of the service that is being provided to customer groups and need not go about formally collecting the information. For the purposes of this study, the researcher is not affiliated with the security of the universities, and was required to collect this information. Data acquisition, analysis and outcomes of this study will primarily focus on the security customer group.

Instruments

The instrument used to assess the attitudes of the primary sample population was in the form of a Likert test. The test contained the recommended compilation of 20 statements (Chadwick et al, 1984, p. 386; Balock & Balock, 1968, p. 94) modelled around different issues of security service assessment. The test contained 4 statements each relating to a specific dimension where all the statements where arranged in random order. All the statements provided the respondent with the opportunity to answer either in a negative or positive context, providing a 5-point scale to gauge their level of endorsement of the statement. Statements were phrased both in the positive and negative tense to stimulate the individual's reactions and to diversify the presentation of the statements.

Use of the commonly accepted response options of "strongly agree", "agree", "undecided", "disagree" and "strongly disagree" were employed to elicit the respondents attitudes to each statement. The choice to present each participant with only 20 statements concerning the security demand was made on the basis of the requirement to achieve a high participation rate and simultaneously minimise any inconvenience when partaking in the study. The higher throughput rate of administering surveys allowed the researcher to reach the high goal of 100 participants per university in a short period of time.

The final Likert test administered to Edith Cowan University and Murdoch University residents can be found in Appendix F.

The instrument used to elicit information from the secondary sample population was in the form of a structured interview. Questions comprising the interview where directed at obtaining information about the security supply from the perspective of Edith Cowan University's security manager and Murdoch University's security supervisor. The interview consisted of 17 questions designed to guide conversion towards the security service relevant to the student village. Information gathered from the structured interview was used to compare and contrast the information extracted from the Likert test. This facilitated in the understanding of each university's supply and demand on security.

The structured interview administered to the Edith Cowan University Security Manager and the Murdoch University Security Supervisor can be found in Appendix E.

Data Analysis

A selection of different data analysis techniques were utilised to extract valid and useful information from the collected raw data. This allowed meaning and relevance to be assigned to the information through the comparison of data. Mean statement scores, standard deviation scores, correlation analysis (dimensions and gender) and depth interview analysis techniques were used throughout the data analysis phase of the study. A discussion of these data analysis techniques will be presented.

The basic level of data analysis was the calculation of mean scores for particular data sets. This provided a useful value to gauge the average response to a particular statement in the Likert test and was also a required value on which to base further analysis (Edwards, 1957, p. 152; Thorndike & Hagen, 1977, p. 36). Use of mean statement analysis allowed for the validation of total Likert responses for particular questions in both the pilot and main tests. Mean scores were calculated for responses to statements, dimension groups and as a method of assessing the balance between genders.

Standard deviation was calculated for each statement and for the assessment of the difference in attitudes between males and females. Plus or minus the standard deviation from the data set mean describes 95 percent of responses that form the bell shaped curve. If the standard deviation was a small value, this gave an indication of the similarity of responses from the participants for a particular statement. In effect, the standard deviation was interpreted as a measure of the

confidence of the data (Thorndike & Hagen, 1977, p. 46). A smaller standard deviation with a narrow bell shaped curve, indicates an effective Likert statement. The three highest average standard deviation scores for individual statements across the two universities were also used to determine the greatest difference between male and female attitudes.

Correlation analysis was utilised to study a collection of similar statement results and compare these as a related group or dimension. The analysis of the correlation between related statements indicated attitudes associated with that particular dimension. The dimension mean identified the overall level of endorsement and provided a ready way of distinguishing the spread of attitudinal intensities. Use of correlation analysis facilitates extraction of the research's most useful information. It also provides easily comprehendible results by concentrating the responses into related and comparable groups.

The depth interview analysis technique was performed when conducting the security supply structured interview. Use of depth interview analysis allows unrestricted comments or opinions to be obtained and to ask questions that will help the researcher better understand the various elements and reasons for these opinions (Burns & Bush, 2000, p. 251). The interview is focused so that common themes can be extracted from the compiled data summary. The focus of the interview is to assess the security supply in relation to the dimension groups utilised in the Likert analysis procedures. Comparisons can be deduced between the supply and demand of the security service in relation to the associated dimension group.

Limitations

This research is comparable to all studies in the way that there are some omnipresent limitations that cannot be overcome. Surmountable limitations that were expected to cause adverse affects on the success of the study were identified and accounted for early in the research development phase. A description follows of the most significant limitations that are inherent to this study and its methodology.

Payne (1974, p.154) suggests that attitudes are learned through a culmination of life experiences: training, education, and formal and informal social interactions. As such, an individuals' attitude towards an unfamiliar topic can be inconsistent and unreliable. A person who has little or no experience with a university security service will provide undependable responses. Individuals who have had a recent or vivid experience with the topic in question are more likely to express their attitudes in a more accurate manner. Attitudes vary with salience and the ease with which they can be aroused. Salience is an attitude's proximity to the surface of a person's mind and this governs its speed of retrieval (Payne 1974, p. 155).

Questionnaires exhibit innate structural characteristics that relate to their functionality and ease of use. Lemon (1973, p. 60) suggests th . identical statements may not have the same meaning to all respondents. Based on an individual's life experiences, the interpretation of a statement may vary from person to person. This study has accounted for this limitation by surveying as

great a number of participants as possible, in order to determine an average response to a statement that reflects the majority of individuals. Furthermore, identical statements may mean something different to the researcher compared with a respondent (Lemon, 1973, p.64). This limitation has been contested through the employment of the face validity evaluation technique to ensure the test will return valid responses.

Henerson, et al (1987, p. 29) suggests that the questionnaire format does not allow response exploration through discussion. The respondent is supplied with a predetermined scale on which to gauge their answer and the Likert test will not allow further opportunity for individuals to detail their responses. In effect, an individual may hold further comments towards a statement but is denied the chance to express them. Blalock & Blalock (1968, p. 95) reinforce this limitation by indicating that due to the response constrictions, Likert scales cannot evaluate the reason why people select a particular response.

Lack of ability for Likert scales to return an indication on an individual's orientation to the topic is important. The greatest information that the scale can elicit from participants is the extent to which they either agree or disagree with the topic but not how they manifest these attitudes. Blalock & Blalock (1968, p. 96) suggest that the Likert procedure does not differentiate items according to their degree of implied affect. The assumption is made that the implied affect of the topic is consistent across all participants. That is, the assessment of the respondent's attitude towards a particular statement implies a common affective orientation to the topic on which the attitude was made.

Balock & Blalock (1968, p. 95) suggest that the Likert means analysis technique assumes decision criteria employed by respondents to be homogenous in quality, although differing in degree from one another. That is, each respondent processes the statement in the same way, factoring the same considerations with which they make a decision. This assumption is made because of the Likert scales' inability to determine the decision-making criteria that each individual utilises in order to provide a response. An acceptance of the generality of the decision criterion permits the feasibility of the same Likert test to be administered to other sample groups. The fact that this study requires the submission of the same Likert test to 200 participants from 3 different subgroups suggests that this limitation cannot normally be overcome.

Ethical Considerations

Due regard for ethical considerations was a major requirement during the preliminary and operational phases of this study. The nature of attitudinal assessment requires the mandatory use of many human participants and the testing process was required to be able to accomplish the elicitation of attitudes in a way that the general population would consider acceptable. Honours thesis projects that involve human subjects must comply with the guidelines set by the Edith Cowan University Ethics Committee, which are identical to the requirements for Masters and PhD students.

The application for ethical clearance is sought during the research proposal phase where the completed form, entitled "Application to Undertake Research

Involving Human Subjects", is forwarded to the committee. The aim of ethics clearance is to assist the researcher to appreciate the ethical aspects of their research and enable members of the committee to fully understand the ethical implications of the research project. Project commencement may not proceed until clearance is received in writing from the committee. The ethics application form requires significant consideration and justification of the following four key issues.

1. **Consent.** "Information given to participants should be presented in such a way that they have a clear understanding of what is to be involved and should include a description of the fundamental aspects of the research project" (ECU Human Ethics Policy, 2000, on-line). A disclosure statement was included in the questionnaire instructions that clearly state the intentions of the project, the non-compulsory nature of the survey and the requirements for survey anonymity. This information was presented to the individual so as to encourage consideration of these elements before the commencement of the survey. Participants needed to be informed that they were free to withdraw from the research program with no obligation.

2. **Deception.** "The researcher must justify any procedure in which essential information is withheld from the subjects, or in which the subjects are deliberately misled as to the procedures and purposes of the research" (ECU Human Ethics Policy, 2000, on-line). The anonymous nature of the questionnaire resulted in no personal or private information concerning individuals who participated in the study to be kept. There was no intention to deliberately mislead subjects and the survey

instructions where presented in such a way to minimise the chances of participant misunderstanding.

3. **Risk and Benefits.** "When considering the risks and benefits of any research, consideration must first be given to the rights of the participants which always takes precedence over the expected benefits to human knowledge or the community" (ECU Human Ethics Policy, 2000, on-line). Risks involving the individuals if they decided to participate in this study were considered low. The most significant risk was thought to be a loss of time and a temporary disruption to their daily routine while participating in the study. An effort was made to minimise this disruption by streamlining the questionnaire administration process through the utilisation of local Residential Assistants.

4. **Confidentiality and Privacy.** "It is essential that participants in any research study be informed that data concerning individuals will be regarded as strictly confidential. It is the responsibility of the researcher to apply safeguards for privacy, anonymity and confidentiality" (ECU Human Ethics Policy, 2000, on-line). Instructions clearly state that participants should not to place any identifying marks on their survey that may jeopardise the confidentiality of individuals. There is also a confidentiality requirement that the researcher be the only person to handle completed questionnaires. These were then stored in a lockable filing cabinet in a private residence. Raw survey data will be destroyed through the process of incineration at the conclusion of the study.

The necessity to satisfactory met the ethical requirements set down by the ethics committee is paramount to the overall success and community acceptance of the research. This study has sufficiently considered the relevant ethical requirements involving human subjects, and has amended the survey administration processes accordingly to demonstrate that ethical considerations were given a high level of attention.

Pilot Study

In order to refine the testing procedure and elicit the most useful data from the test respondents, a pilot-testing phase was conducted. The aim of a pilot test is to determine whether the questionnaire possesses the desired qualities needed to make sound judgements during the data analysis phase (Anderson, 1990, p. 11; Gay, 1976, p. 58; Mason & Bramble, 1978, p. 63). Tuckman (1978, p. 225) recommends that the pilot test should be administered to respondents who are part of the intended test population and will not participate in the main study. This ensures that the attitudinal responses evoked by the questionnaire are recorded in a form that best represents the attitudes of the individual and not the combined attitude of the masses. Lin (1976, p. 199) suggests providing segregation between the pilot study participants and the main study participants ensures that all people in the test population are surveyed only once, and contamination of attitudes is kept to a minimum.

The pilot test consisted of 20 questionnaires administered to a mutually exclusive group of residents at Mount Lawley student village. Care was taken to

simulate similar testing conditions to those planned for the main testing phase. Respondents were recruited around evening mealtime as this was expected to yield a high number of people available to participate in the test. All testing was conducted in the participants' common areas of their units and care was taken to ensure the non-presence of residents that did not reside in the pilot-testing zone within Mount Lawley student village.

Appendix C illustrates the 20 participant pilot study results and contains details of the specific statements that required modification in order to provoke responses with a higher level of discrimination.

The ability of a pilot-testing phase to debug the questionnaire prior to administration allows for the identification of failings such as poorly worded statements, unclear testing instructions and administration problems. This process results in a refined final questionnaire, capable of better extracting usable information. The final Likert Test can be found in Appendix F.

CHAPTER 4

Study Results

This chapter introduces the data collected from the 200 Likert tests submitted to residential students at Edith Cowan University and Murdoch University student villages. The raw data has been processed and presented as tables to allow analysis. Appendix G contains the full set of raw data obtained from the Likert tests including a basic calculation of averages and standard deviations. The most useful information has been extracted from the raw data and is presented in the tables below.

Table 1: Dimension means for entire sample population

Dimension	Mean 1	Mean 2	Mean 3	Mean 4	Dimension Mean
Familiarity	4.25(1)	3.56(2)	3.01(10)	4.12(15)	3.74
Effectiveness	3.60(6)	3.65(9)	4.07(14)	3.53(17)	3.71
Requirement	4.33(8)	4.52(12)	4.17(13)	4.08(19)	4.28
Performance	3.85(3)	2.12(5)	3.70(16)	3.34(18)	3.25
Lifestyle	3.76(4)	4.03(7)	2.99(11)	4.56(20)	3.84

Table 1 represents processed Likert data from the entire 200 tests resulting in meaningful information. Calculations of the 5 dimension means are the result of a number of previous steps. Each Likert test contains 20 statements of which there are 5 subgroups each containing 4 randomly placed statements. These four statements are designed to elicit attitudes based on a particular topic, or dimension. In order to achieve a dimension mean, statement means must first be calculated for each of the four dimension statements. The four columns entitled,

Mean 1, Mean 2, Mean 3 and Mean 4, represent these values. The dimension mean is an average of these four values.

As Table 1 represents the entire sample population, the average for each statement was calculated by utilising the scores from all 200 responses. All individual mean values in the matrix correspond to a particular statement number, as indicated by the numeral in the brackets. Each of the 5 dimensions is contained in the far left column and the corresponding statement means, and the dimension mean, follow across the columns to the right.

The usefulness of dimension means allows the overall evaluation of the level of endorsement for a particular dimension topic. The source for individual statement means can be varied to provide an indication on the level of endorsement for dimension topics, in a particular sample group.

Table 2: Dimension means for Test Group 1 (Edith Cowan University)

Dimension	Mean 1	Mean 2	Mean 3	Mean 4	Dimension Mean
Familiarity	4.16(1)	3.45(2)	3.05(10)	4.21(15)	3.72
Effectiveness	3.49(6)	3.56(9)	3.94(14)	3.55(17)	3.64
Requirement	4.40(8)	4.54(12)	4.19(13)	3.93(19)	4.27
Performance	3.73(3)	1.95(5)	3.72(16)	3.19(18)	3.15
Lifestyle	3.65(4)	4.11(7)	2.81(11)	4.52(20)	3.77

Table 2 displays the tabulated data for the Edith Cowan University test group. The individual statement means are a calculation of the responses from all participating residents at Mount Lawley and Joondalup campuses. Each of the four statements representing a particular issue is presented in columns, with the

overall dimension means in the far right column. The origin of the individual statement means are the Likert test statement numbers indicated in the brackets.

Table 3: Dimension means for Test Group 2 (Murdoch University)

Dimension	Mean 1	Mean 2	Mean 3	Mean 4	Dimension Mean
Familiarity	4.34(1)	3.67(2)	2.98(10)	4.03(15)	3.76
Effectiveness	3.72(6)	3.74(9)	4.20(14)	3.52(17)	3.80
Requirement	4.27(8)	4.50(12)	4.16(13)	4.24(19)	4.29
Performance	3.97(3)	2.29(5)	3.69(16)	3.50(18)	3.36
Lifestyle	3.88(4)	3.95(7)	3.18(11)	4.61(20)	3.91

Table 3 displays the tabulated data for the Murdoch University test group. The individual statement means are a calculation of the responses gathered from the 100 participants at Murdoch campus. Each of the four statements representing a particular issue is presented in columns, with the overall dimension means in the far right column. The origin of the individual statement means are the Likert test statement numbers indicated in the brackets.

Table 4: Gender comparisons for statement number 10

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	AV	SD
ECU	M	4	2	4	5	3	3	5	2	1	4	4	5	2	4	4	2	5	1	2	2	3.20	1.36
	F	4	4	4	2	4	2	3	4	2	3	4	2	4	4	1	5	2	5	4	2	3.25	1.16
Murdoch	M	2	4	2	4	1	4	4	3	4	2	4	4	2	1	5	2	3	3	5	4	3.15	1.23
	F	2	4	4	3	2	2	4	4	2	2	4	4	4	3	1	3	4	2	2	2	2.90	1.02

Table 5: Gender comparisons for statement number 11

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	AV	SD
ECU	M	4	2	2	5	1	3	5	4	4	3	1	4	2	4	4	1	3	2	2	2	2.90	1.29
	F	2	4	4	2	2	3	3	3	3	4	4	4	2	2	4	3	1	4	4	4	3.10	0.97
Murdoch	M	2	4	4	4	2	1	1	1	2	3	2	4	2	5	2	2	3	4	3	4	2.75	1.21
	F	4	3	2	1	4	2	4	4	4	4	4	4	2	3	2	5	4	4	5	4	3.45	1.10

Table 6: Gender comparisons for statement number 14

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	AV	SD
ECU	M	5	5	2	5	4	4	5	5	1	5	3	5	3	4	3	2	5	4	4	2	3.80	1.28
	F	5	5	2	4	1	4	4	4	3	5	5	1	5	5	5	5	5	5	5	5	4.15	1.35
Murdoch	M	2	4	5	5	2	5	5	5	2	5	5	5	4	5	5	3	4	5	5	4	4.25	1.12
	F	5	5	4	5	4	4	5	1	2	5	5	5	5	4	5	5	5	5	5	5	4.45	1.10

Tables 4, 5 and 6 represent processed data determining the differences in attitudes between males and females. These attitudes were for the 3 statements that returned the highest average standard deviations. The decision was made to choose the highest average standard deviation statements, as this would best illustrate the most significant differences between male and female attitudes for that statement. To maintain validity of the final calculations, the first 10 respondents from Mount Lawley, first 10 from Joondalup and first 20 from Murdoch were selected for each statement from the raw data. While the time constraints of an honours thesis does not allow further statement analysis of male and female attitudes, the three most significant returns have been explored for demonstration purposes.

Responses to the 20 statements are tabulated in rows with the associated means scores and standard deviations calculated at the end of each matrix. These values are used to assess the level of reliability between the responses and the actual mean differences between the attitudes of males and females. The nature of an honours thesis does not permit the time required to process further statements and to include a greater number of participants but if it did, the results are expected to follow the same trend.

The above tables provide the most significant information collected from the Likert tests and present it in a structure that can be comprehended and analysed. Information can now be evaluated with consideration to the attitudes of specific dimension issues and the differences in male and female attitudes across universities.

CHAPTER 5

Data Analysis

A tabulated collection of the results presented in Chapter 4 facilitates the processing of the data into meaningful information, which can be used to satisfy the initial requirements of the research. This chapter provides analysis of the associated dimension data to enable conclusions to be formed about each issue.

Familiarity

Group One

The Likert test addressed the issue of familiarity in 4 of the 20 statements. Actual statements eliciting attitude with respect to familiarity from the residential students are statements 1, 2, 10 and 15. Mean scores for Edith Cowan University concerning these statements are 4.16, 3.45, 3.05 and 4.21 respectively, resulting in a total dimension mean of 3.72. This suggests that the familiarity issue rates between "undecided" and "agree", with a tendency for familiarity to be endorsed by residents at Edith Cowan University.

Group Two

Mean scores for Murdoch University residential students concerning the statements 1, 2, 10 and 15 are 4.34, 3.67, 2.98 and 4.03 respectively. This provides an overall dimension mean of 3.76, suggesting the familiarity issue lies

between "undecided" and "agree", with a strong bias towards "agree". While both universities score between "undecided" and "agree" they also tend to lean towards agreeing with the familiarity statements presented. It appears that Murdoch University residents endorse the familiarity issue more strongly compared to Edith Cowan University residents.

Both test groups indicated a lower level of agreement to statements concerning their familiarity with security officers. Edith Cowan University and Murdoch University returned means of 3.45 and 3.67 respectively suggesting Murdoch residents are generally more familiar with their university security personnel.

Overall, the familiarity towards each university security service represented a medium customer service issue. The familiarity dimension was hampered because of the absence of familiar security officers around each student village.

Effectiveness

Group One

The Likert test addressed the issue of effectiveness in 4 of the 20 statements. Actual statements eliciting these attitudes of effectiveness from the residential students are statements 6, 9, 14 and 17. Mean scores for Edith Cowan University concerning these statements are 3.49, 3.56, 3.94 and 3.55 respectively, resulting in a total dimension mean of 3.64. This suggests that the effectiveness issue rates between "undecided" and "agree" for Edith Cowan University residents, with a slight bias towards "agree".

Group Two

Mean scores for Murdoch University residential students concerning the statements 6, 9, 14 and 17 are 3.72, 3.74, 4.20 and 3.52 respectively. This provides an overall dimension mean of 3.80 suggesting the effectiveness issue lies between "undecided" and "agree", with a strong bias towards "agree". While both universities score between "undecided" and "agree" they both also tend to lean towards agreeing with the effectiveness statements presented. It appears that Murdoch University residents endorse the effectiveness issue marginally stronger compared to Edith Cowan University residents.

Differences in opinion between the two test groups for statements concerning the efficiency of their security services varied slightly. For statement 6, Edith Cowan University returned an overall mean of 3.49 while Murdoch University returned a mean of 3.72. This indicates that Murdoch University residents are more satisfied with the efficiency of their security service.

Overall, the effectiveness dimension of each university security service represen ì a medium customer service issue. The effectiveness dimension was hampered because of the general consensus from both study groups that their security service was considered to be only mildly effective.

Requirement

Group One

The issue of requirement was addressed in 4 of the 20 statements comprising the Likert test. Actual statements eliciting attitudes pertaining to requirement from the residential students are statements 8, 12, 13 and 19. Mean scores for Edith Cowan University concerning these statements are 4.40, 4.54, 4.19 and 3.93 respectively, resulting in a total dimension mean of 4.27. This suggests that the requirement issue rates between "agree" and "strongly agree" for Edith Cowan University residents, with a slight bias towards "agree".

Group Two

Mean scores for Murdoch University residential students concerning the statements 8, 12, 13 and 19 are 4.27, 4.50, 4.16 and 4.24 respectively. This provided an overall dimension mean of 4.29 suggesting the requirement issue lies between "agree" and "strongly agree", with a slight bias towards "agree". While both universities scored between "agree" and "strongly agree" they both also tend to lean towards agreeing with the requirement statements presented. It appears that Murdoch University residents endorse the requirement issue more strongly as compared to Edith Cowan University residents.

Both test groups indicated strongly that security officers are warranted around their student village. Edith Cowan University responded to statements 8 and 12 with mean scores of 4.40 and 4.54 respectively. Murdoch University responded to the same statements with mean scores of 4.27 and 4.50 respectively. This

score suggests that Edith Cowan University residents more strongly endorse the onsite presence of university security officers.

Overall, the requirement for each university security service to provide key assistance represents a very strong customer service issue. This attitude towards the requirement dimension appeared to be supported by the agreement of the importance to provide security services by both security professionals.

Performance

Group One

The issue of performance was addressed in 4 of the 20 statements comprising the Likert test. Actual statements that elicited attitudes from the residential students were statements 3, 5, 16 and 18. Mean scores for Edith Cowan University concerning these statements are 3.73, 1.95, 3.72 and 3.19 respectively, resulting in a total dimension mean of 3.15. This suggests that the performance issue rates between "undecided" and "agree" for Edith Cowan University residents, with a strong bias towards "undecided".

Group Two

Mean scores for Murdoch University residential students concerning the statements 3, 5, 16 and 18 are 3.97, 2.29, 3.69 and 3.50 respectively. This provides an overall dimension mean of 3.36 suggesting the performance issue lies between "undecided" and "agree", with a bias towards "undecided". While both universities scored between "undecided" and "agree" they both also tend to

lean towards an overall "undecided" response with the performance statements presented. It appears that Murdoch University residents endorse the performance issue marginally stronger compared to Edith Cowan University residents.

The two test groups indicated that they were satisfied that there was little need for improvement in their university security service. Edith Cowan University residents returned a mean score of 1.95 for statement 5 while Murdoch University residents returned 2.29. This suggests that Edith Cowan University felt most strongly about the inability for improvement in their service. However, both universities appeared to be relatively satisfied with the performance that they were actually receiving with Edith Cowan University returning a mean score of 3.73 for statement 3. Murdoch University returned a score of 3.97 for the same statement. This indicates that Murdoch University residents were more satisfied with their security service than Edith Cowan University.

Overall, the performance towards each university security service represented a low customer service issue. The performance dimension was hampered because of the lack of agreement for potential improvement of the service. Even though residents agreed that their security services were only mildly efficient, they also agreed that this level of efficiency could not be improved. A correlation could not be determined between performance and effectiveness.

Lifestyle

Group One

The issue of Lifestyle was addressed in 4 of the 20 statements comprising the Likert test. Actual statements that elicited attitudes from the residential students are statements 4, 7, 11 and 20. Mean scores for Edith Cowan University concerning these statements are 3.65, 4.11, 2.81 and 4.52 respectively, resulting in a total dimension mean of 3.77. This suggests that the lifestyle issue rates between "undecided" and "agree" for Edith Cowan University residents, with a strong bias towards "agree".

Group Two

Mean scores for Murdoch University residential students concerning the statements 4, 7, 11 and 20 are 3.88, 3.95, 3.18 and 4.61 respectively. This provides an overall dimension mean of 3.91 suggesting the lifestyle issue lies between "undecided" and "agree", with a very strong bias towards "agree". While both universities scored between "undecided" and "agree" they both also tend to lean towards an overall "agree" response with the lifestyle statements presented. It appears that Murdoch University residents endorse the lifestyle issue slightly more compared to Edith Cowan University residents.

Both test groups agreed that people feel safer when they see security officers around their village. Edith Cowan University and Murdoch University returned a mean score of 4.11 and 3.95 respectively for statement 7. This result indicates that Edith Cowan University had a greater sense of safety when there was a

physical presence of security personnel onsite. The two test groups also strongly agreed that it was important for their village to have 24-hour security with Murdoch University returning a stronger endorsement for statement 20 with a 4.61 mean. Still, Edith Cowan University returned a strongly agreeing result of 4.52. Both test groups indicated that only half of its residents actually use the security service. Edith Cowan University scored 2.81 for statement 11 while Murdoch scored 3.18.

Overall, the quality of lifestyle affected by each university security service represents a medium to high customer service issue. Endorsement of the lifestyle dimension was elevated because of the agreement for the importance towards 24-hour security. However, of the people considering it important to have this level of security, approximately half of the residents on each campus did not use the service, restricting further approval of this issue.

Table 7: Comparisons Between Dimension Means for both Universities

Dimension	ECU	Murdoch
Familiarity	3.72	3.76
Effectiveness	3.64	3.80
Requirement	4.27	4.29
Performance	3.15	3.36
Lifestyle	3.77	3.91

Table 7 indicates the comparisons between the overall dimension means for Edith Cowan University and Murdoch University. Based on the final dimension means for the 5 issues explored throughout the research, Edith Cowan University ranks the issues from lowest to highest endorsement in the following order: Performance, Effectiveness, Familiarity, Lifestyle and Requirement. Murdoch University overall ranks the issues in a slightly different order of

endorsement: Performance, Familiarity, Effectiveness, Lifestyle and Requirement. This rank order result based on the dimension means of the two test groups indicates the dimension possessing the least amount of endorsement for both universities is Performance. The two most important issues agreed on by the two universities are those of Lifestyle and Requirement with the latter being the most endorsed.

Male and Female Attitudinal Differences

The literature review suggests that when eliciting attitudes from a mixed gender group of subjects, the results for an identical statement are likely to differ significantly between males and females. The differences in opinion are likely to be a result of males and females possessing different beliefs about their personal capabilities, safety and security. It is also believed that males and females will differ in their attitudes because of previous life experiences.

As part of the study analysis, an exploration into the differences between male and female attitudes was evaluated using the results obtained from residential students at both Edith Cowan University and Murdoch University. Of the 20 Likert test statements administered to residents, the three that returned the highest average standard deviation were selected for the purposes of the male and female evaluation. The restriction of time prevented the analysis of further statements, however given time, it is reasonable to suggest that all 20 Likert statements and 200 respondents could be analysed to determine the exact overall difference between male and female attitudes. The decision to choose only the 3

most significant statements that indicate a wide range of responses overall, was to intentionally highlight the extent of male and female attitudinal differences.

The average response for the 20 individuals selected to represent the male attitudes at Edith Cowan University for statement 10 was 3.20. Females from the same university responded to the same question with an average of 3.25. Murdoch University male residents returned an average of 3.15 and the females from the same university indicated an average of 2.90. Edith Cowan University scored between "undecided" and "agree" for statement 10, with a bias towards "undecided". This suggests that for Edith Cowan University, females are more likely to be familiar with the security staff by face, than males. At Murdoch University, males returned an average value of 3.15 for the same statement whereas females indicated a response of 2.90. Murdoch University indicates that males have better face familiarity of security staff than females. However, both genders focused around the "undecided" response indicating that most residents were unsure how familiar they are with the security officers.

Overall, female residents from Edith Cowan University were most familiar by face recognition with the security officers working at that university. Female residents from Murdoch University returned the lowest score suggesting that they were the least familiar with the proprietary security officers. The average male response between the two universities is comparable however no correlation could be drawn between the differences in female attitudes for statement 10. The standard deviation between males and females from both universities suggests that there is a satisfactory level of confidence in the results,

with females from Murdoch University returning the most reliable result, and males from Edith Cowan University returning the least reliable result.

The average response for the 20 individuals selected to represent the male attitudes at Edith Cowan University for statement 11 was 2.90. Females from the same university responded to the same question with an average of 3.10. Murdoch University male residents returned an average of 2.75 and the females from the same university indicated an average of 3.45. In general, Edith Cowan University and Murdoch University scored around the "undecided" mark for statement 11. However, males from both universities scored in the "disagree" to "undecided" realm and females from the two universities scored in the "undecided" to "agree" realm. The correlation between the male attitudes and female attitudes was high for this statement. This suggests that females are significantly more likely to utilise the security services offered by their university compared to males.

Overall, females residing at Murdoch University were most likely to utilise their security service but males from Edith Cowan University suggested that they were least likely to utilise the university security service. The average male response between the two universities is comparable with the same trend apparent in the female responses. This suggests a high correlation between the differences in gender in relation to the level of utilisation of the university security service. The standard deviation between males and females from both universities indicates that there is an adequate level of confidence in the overall results, with females from Edith Cowan University returning the most reliable

result, and males from the same university returning the most unreliable results for statement 11.

The average response for the 20 individuals selected to represent the male attitudes at Edith Cowan University for statement 14 was 3.80. Females from the same university responded to the same statement with an average of 4.15. Murdoch University male respondents returned an average of 4.25 and the females from the same university indicated an average of 4.45. Edith Cowan University scored between "undecided" and "agree" for males, and "agree" and "strongly agree" for females. This suggests that for Edith Cowan University, females are much more likely to react negatively than males, if the security service was decreased. Murdoch University indicated that females were also more likely to react to a decrease in service than males. However both genders from Murdoch University reacted strongly in favour of the statement.

Overall, female residents from Murdoch University are most sensitive towards a decrease in the level of security service, returning a very strong response in defence of the statement. Males from Edith Cowan University are the least sensitive towards a decrease in the security service but generally both genders from the two universities strongly indicated that they would not like to see a reduction in the security service. While there are differences in the level of endorsement between males and females from both universities concerning statement 14, there does appear to be a consistent pattern that females are more sensitive than males, towards security issues. The standard deviation between males and females from both universities suggests that there is a satisfactory

level of confidence in the results. Females from Murdoch University returned the most reliable and most passionate response for statement 14, while females from Edith Cowan University returned the least reliable result.

Analysis of data relating to the three significant statements extracted from the Likert Test reveals noteworthy differences to the responses of a particular statement from males and females of the same university. The belief that male and female attitudes will differ has been proven through this analysis, with females generally returning a more passionate response. It is expected that if this method for analysing male and female attitudes is applied to the 20 statements and includes the results of all 200 participants, it is likely that the trend of a stronger female response will be apparent.

Data Analysis Summary

An analysis of the responses that both universities provided were facilitated though the use of dimension means to aggregate attitudes towards particular security service issues. Overall, respondents indicated a medium to high level of acknowledgement for the relevance of all security service issues presented. Each issue was evaluated as a separate dimension and the level of endorsement exhibited by the two universities towards each of these dimensions was assessed and compared. Calculating an average for each statement comprising a dimension and averaging all these results provided the dimension mean. Use of dimension means facilitates the culmination of the raw data and allows comparisons and analytical information to be determined.

Five key issues were explored through the administration of the Likert test to establish the dimensional analysis. These issues are Familiarity, Effectiveness, Requirement, Performance and Lifestyle. Interestingly, the level of endorsement for the five issues was very similar between the two universities. A combined result indicates that the issues of lifestyle and requirement returned the highest endorsement, suggesting that residents found these issues to be the most important and responded to them in a positive light. The performance issue was the dimension that returned the lowest endorsement across both universities, indicating that residents were not particularly happy with the performance of the security service. Other dimensions scored medium levels of endorsement.

Some interesting results were provided by the male/female analysis. In general, females returned a more passionate response towards a particular statement compared to males of the same university. This suggests that females are more sensitive to issues concerning their personal security and wellbeing. While females returned responses that were more distinguishable than males, the differences between the two responses vary from statement to statement. The average standard deviation between the three statements selected for male/female analysis appears to indicate a satisfactiry level of reliability, enforcing the trustworthiness of the results.

The study phase was intended for gathering data that would enable the administration of statistical analysis, with the result of providing useful information. This information will be used to draw conclusions about why results appear as they do and offer some logical explanations for analysed data. The data analysis phase has provided the required scrutiny of the data in order to generate results. These results will be explored in detail in Chapter Six with the aim of satisfying Stage 10 of the study procedure.

CHAPTER 6

Outcomes

This Chapter specifies the range of outcomes produced by this study and presents these results in a way that is consistent with research questions proposed in Chapter One. These outcomes correspond to the method being demonstrated to assist security managers in better understanding, identifying and treating university security service issues, aided by information sourced from the customer perspective. These outcomes will support the security manager by empowering the professional with operational knowledge directed at facilitating security related supply and demand decisions.

Security Service Issues

The Likert test was constructed to elicit attitudes of residential students from two universities in order to generate an enhanced level of understanding towards the security requirements. Residential students are a representative population of the universities' entire customer group. Their attitudinal responses explored five main issues concerning the security service:

1. Familiarity

2. Effectiveness

3. Requirement

4. Performance

5. Lifestyle

The following sections will identify key trends from the responses and offer likely reasons for the justification of the outcomes of each issue. Recommendations based on the outcomes will also be made. An exploration into the outcomes concerning the difference in male and female attitudes will further support this chapter. Finally, based on the methodology of this study, a framework will be proposed with a discussion on how it can be used by security managers to determine security supply and demand anomalies in the future.

Familiarity

The issue of familiarity explored the respondents' knowledge of the university security service's presence as well as deeper topics such as levels of familiarity that residents had towards security personnel. Familiarity is considered to be an important component of university security supply as it facilitates the acceptance of security officers into the residential environment and can increase such customer factors as degrees of trust. The level of familiarity towards the personnel comprising a security service can offer an indication of the circumstances and number of times that personnel interact with the customers. Increasing levels of familiarity by the resident towards the security service and personnel can indicate an achievement in the successful supply of service.

Residential students indicated a high degree of knowledge concerning the actual existence of their university security service. The level of familiarity towards

individual security personnel was generally considered to be medium. However, this factor appears to support the high degree of trust that residents would place upon security officers. While all residents may not have been familiar with individual security personnel, they readily trust them and the services they provide. A governing factor for the high level of trust may be the uniform. The resident may trust a recognised uniform rather than the actual person wearing it.

Recommendations following the outcomes of the familiarity issue are methods that security managers can employ to increase customer awareness of the security service and its capabilities. Samuels (1995, p. 229) and Nichols (1997, p. 118) suggest awareness programs at student village orientation, security pamphlets providing photographic identification of the university security personnel distributed to residents, and regular security newsletters can all be beneficial towards increasing the level of familiarity and hence the level of service.

The magnitude of the familiarity issue is low to medium for both universities.

Effectiveness

The issue of effectiveness explored the respondents' beliefs as to how efficiently security personnel carried out their duties and the way the residents felt they responded to their requests. End user assessment of the level of effectiveness towards the security supply has a direct correlation towards the actual functionality and value of the security service. An indication towards the

success of the security supply can be indicated by how effective the customers find the service.

Residential students provided an average response of medium to high when asked about the efficiency of their security service. This perception was similar across both universities and consistent with the responses obtained for the extent to which the security service meets the customers' needs. Residents on each university reacted strongly when asked about whether they would like to see the security service decreased. The response suggests that residents have certain requirements for security that have not been met. However, they implied that an increase in the security service would better meet these requirements and hence increase the level of feeling towards the effectiveness issue.

Recommendations following the outcomes of the familiarity issue are methods that security managers can adopt to increase their customer attitudes towards the effectiveness of the security service and its operation. The level of efficiency that residents have come to expect from the university security service is likely to be heavily reliant on the time for security personnel to respond to their requests. Equipping security personnel with resources that they can use to increase their response rate for residential students is likely to positively change attitudes towards this issue. Use of vehicles and bicycles can facilitate this as well as stationing security personnel closer to the student village (Samuels, 1995, p. 154). Furthermore, employing more security personnel can increase the level of effectiveness through load distribution.

The magnitude of the effectiveness issue is low to medium for both universities.

Requirement

The issue of requirement explored the respondents' appreciation for the security service and to gauge the value of service that they were receiving. The degree to which the customers believe that security is required can have an impact on the demand that they place on the service. Requirement is considered to be an important issue because it directly correlates to the demand that customers generate. An increase in the requirement for security services can provide an indication on the value and usefulness of the supply.

Residential students indicated a strong endorsement when asked about the need for security at university. This was consistent across both universities. This is thought to have an effect on the similarly high endorsement towards the requirement of contacting security. Respondents from the two universities endorsed the requirement issue in comparable ways although Murdoch residents found it much easier to contact security. Edith Cowan University residents only considered the ease with which security could be contacted to be medium. This is likely to be a result of the different systems that each university employs for contacting security. Edith Cowan University relies on students recalling a number to dial when they contact security from within their residences, where as Murdoch residents have strategically placed call centres with automatic connection throughout student village. This is likely to have an effect on the

overall requirement to contact security, as the process is not as streamlined for Edith Cowan University students.

Recommendations following the outcomes of the requirement issue are methods that security managers can employ to maintain the high requirement for security services indicated by both universities. Upgrading the facilities at Edith Cowan University to enable a simpler process for residents to contact security is expected to increase the requirement of their services. Nichols (1997, p. 145) suggests the implementation of simple security telephones will increase campus security. Placement of easily accessible and distinctive call centres that are simple to operate throughout Edith Cowan University campuses is likely to facilitate this.

The magnitude of the requirement issue is low for Murdoch University but low to medium for Edith Cowan University.

Performance

The issue of performance explored the respondents' beliefs towards the operation of their security function and deeper topics such as provision for further improvement in the service. The level of performance that a security service's customers feel satisfied with is important to the evaluation of end user demand for the services. Performance is strongly related to effectiveness and can affect the overall attitudes concerning other issues such as familiarity and lifestyle. The level of performance that customers demand is vital information

for the security manager in determining a sufficient level of security supply. The more demand that is placed on the security service to perform its duties must be met with adequate supply to ensure a consumer/provider balance and minimise customer dissatisfaction.

Residential students indicated they were reasonably satisfied with the security service that they were receiving and felt that there was little room for improvement in the service. Both universities similarly endorsed their contentment of the services that they were receiving but Edith Cowan University residents believed more strongly that there was not much room for service improvement. Additionally, these students felt that the responsiveness was more inadequate than those residents surveyed at Murdoch University. It appears inconsistent that residents generally believed there were inadequacies in the service but felt that these could not be improved. The dimension mean was significantly hampered by customers' belief for the inability of the security service to improve itself.

Recommendations following the outcomes of the performance issue are methods that the security manager can employ to increase the confidence of its customers by reassuring the ability for the security service to change in order to meet the requirements of the users. Avenues for customer feedback concerning their thoughts of the security services performance may assist with increasing the endorsement of performance (Fischer & Sloan, 1995, p. 258).

The magnitude for the performance issue is high for both universities.

Lifestyle

The issue of lifestyle explored the respondents' feelings concerning the impact that the security service has on their quality of life. Lifestyle is considered to be an important indication for the consequences of a number of inputs including security, which make living at student village an enjoyable experience. An increase in the quality of life in student village through the effect of services offered by security has a strong correlation with the level to which the security service actually meets the demand. If the lifestyle around student village has improved through the presence of security, then it is fair to say that security is providing a service that meets the customers demand.

Residential students indicated a very high degree of endorsement when asked about the importance of having 24-hour security at student village. This was supported by the belief that residents felt safer when they saw security officers around the village, suggesting an importance on the physical presence of security personnel. Additionally, residents from both universities believed that the security service has an influence on the improvement of the quality of living at student village. There were no significant differences in the attitudes between universities, as they both appeared to similarly endorse security and its effects on lifestyle.

Recommendations following the outcomes of the lifestyle issue are methods that security managers can employ to further increase the quality of living for residents at student village. The indication of the importance of a physical

security presence suggests that residents would feel more comfortable if security increased its' patrols around the village. Increasing the profile of security so that residents notice their presence more regularly can assist towards improving the quality of life without actually increasing the physical presence (Samuels, 1995, p. 142). This may be achieved through casual interactions between security personnel and residents and also by changing the time that security patrols the village to a period in the day when residents are present.

The magnitude of the lifestyle issue is low for both universities.

Male and Female Differences

Analysis of the differences in male and female attitudes serve to illustrate that a mixed environment such as student village is actually representative of the attitudinal differences present in the wider community. The results concentrated on highlighting the differences in males and females who were administered the same stimuli. Results indicated a strong suggestion that females are more likely to be sensitive towards security related issues than males. It is likely that females are generally more compassionate towards many security issues, however, the security services did meet their needs.

An appreciation of the higher levels of sensitivity that females possess is likely to be a pressing issue for security managers, particularly given the high number of females that reside in the student villages on both universities. Females may feel susceptible to security issues at a magnitude that is greater than males

possibly because of the influence by the media to crimes that are directed towards females. Females that have heightened feelings of physical vulnerability are likely to be more passionate about security issues explored throughout this research. Providing security services that are aimed at female related issues can increase the value and acceptance of the overall service.

Identifying these female related security issues can assist the security manager in increasing the overall acceptance of the security supply. This can be achieved through campus programs focusing on the female population. Administering dedicated information pamphlets aimed exclusively at the female population, for the purposes of reassuring and providing security solutions, is expected to better cater for female requirements. Additionally, the running of security related seminars for females, addressing issues such as personal safety at night and self-defence could also address the necessary female requirement (Bromley & Territo, 1990, p. 46).

While this issue was not analysed in accordance to the previous five security service issues, its relevance to the security manager is still important. From the results obtained concerning the heightened feelings towards security issues expressed by females, one could surmise that this issue is of medium to high magnitude.

Framework for Identifying Security Service Supply and Demand

The procedure for this study has demonstrated the effectiveness of analysing end user attitudes of a security service as a means to develop greater levels of understanding for the security manager on the differences in supply and demand. This study has proven that a multitude of differences relating to the supply and demand for a tertiary institution's security service do actually exist, and that the method proposed was able to return useful information. This information is expected to assist the security manager to better focus the service towards the most prevalent customer issues.
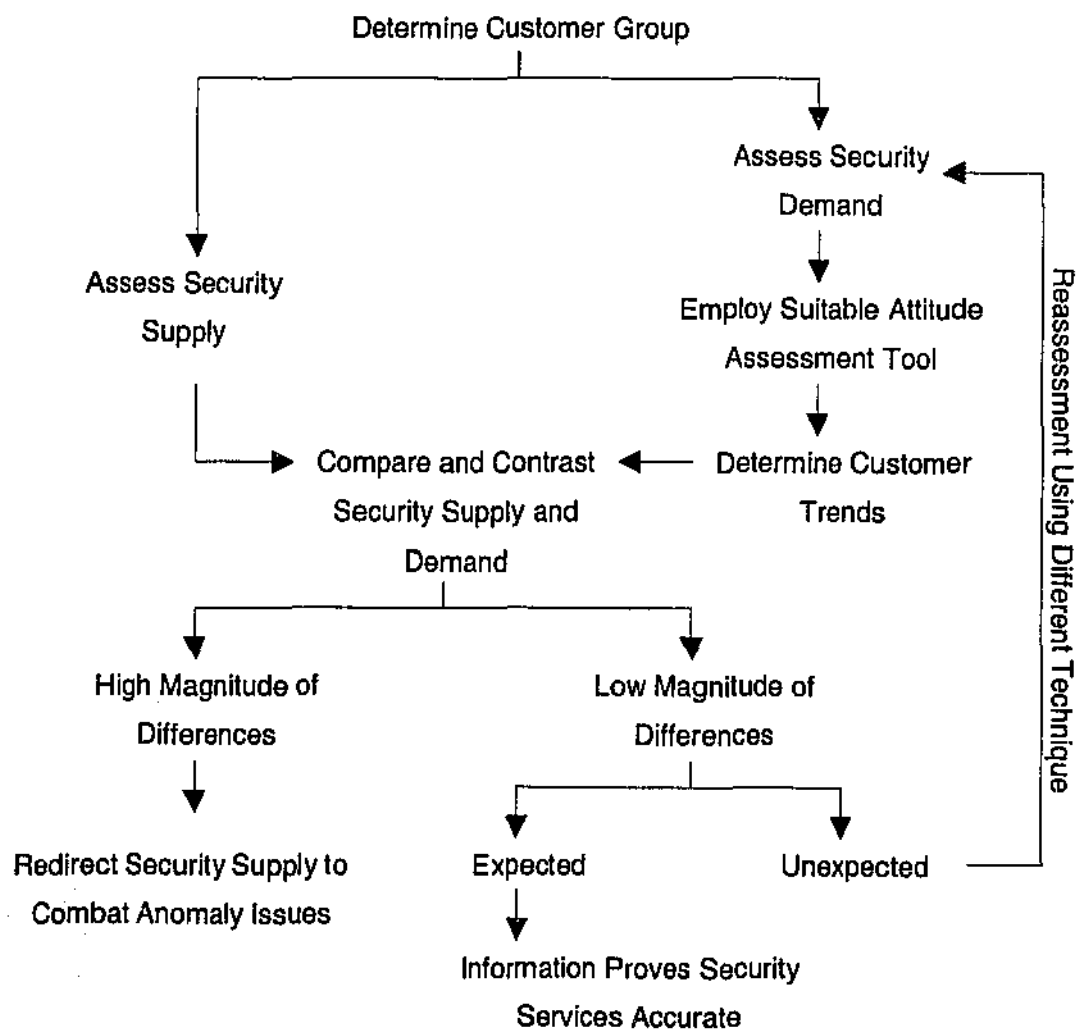
Figure 2: Framework for Identifying End User Issues

The study has been successful in determining a method for security managers to collect information from specialised rather than diverse customer groups. Residential students are not the only customer group found throughout a university and they are not the only group that receives the attention of the security service. Therefore, it is necessary at this stage to propose a flexible framework that security managers can adopt, and one that will allow them to perform similar information collecting exercises on other customer groups within the university.

Figure 2 proposes a suitable framework that security managers can adopt in order to identify anomalies in the security supply and subsequent demand of a chosen customer group within the university. The only prerequisite that the framework assumes is that the security manager has a vested interest in obtaining information concerning the differences in the security supply and demand. This constitutes a motive to adopt the framework.

Determination of the initial customer group to focus the study will be the result of the need to collect service information from a particular group. This study utilises the customer group consisting of the residential student population of a university. However, the framework can be adopted for administration to other groups.

Assessment of security supply will be a concise process for the security manager. Furthermore, it may not need to be a formal process in which information is collected. It is reasonable to assume that the security manager

will already have an in-depth understanding concerning security services provided for the particular customer group. However, the framework still identifies this component as a necessary and logical phase. The adoption of structured interviews for the purposes of this investigation were designed to elicit information of prior knowledge from the security managers, to inform the researcher. An understanding of security supply will assist the subsequent contrastive phase by placing the demand information into perspective for final decision-makings.

Assessment of security demand is likely to be the most time-consuming phase of the framework, but an important phase for the justification of the security service. The requirement to select a suitable attitude measurement tool is essential towards the relevance of the final information. This study utilised the Likert testing technique that was believed to be most appropriate. The Likert test enables a varied response scale for customers to gauge their feelings. However, the format and structure allows quick and easy administration of the test, and straightforward data analysis. Its framework does allow the facility to adopt other customer assessment methods but the information obtained from these must be compatible with the procedure.

The contrastive phase of the framework serves to identify the differences in the supply of security service and its demand. The security manager will have the ability to identify anomalies through the generation of customer service issues. This study further demonstrates this phase by comparing and contrasting two separate security services with the intention of proving the reliability of the

process. The contrastive phase will provide security managers with the necessary information concerning the magnitude of the differences in security supply and demand.

Results of the comparison stage will govern the action taken by the security manager. If the results indicate that there are high levels of differential magnitude between security supply and demand, then the framework has been successful in providing the customer information relating to the security service. This information can then be used to satisfy the original motive possessed by the security manager. Termination at this stage indicates successful application of the framework.

If the results return an indication that the differential magnitude between security supply and demand is low, then the framework has the ability to manage this outcome. If there was an expectation that the final differences between the level of security supply and demand were going to be low, then the framework has been successful in proving that the security services are accurate and there is little requirement to modify them. However, if the low magnitude of the security supply and demand is unexpected, then the framework has been unsuccessful in eliciting the correct information from the customers on which to conduct analysis. This result may also be an indication that the contrastive stage was not performed correctly or consistently. In order for the framework to be successful, the attitude collection process will need to be repeated with a modification to how the attitudes are collected, analysed and compared to the security supply information. While this study indicates that the Likert procedure

was able to return valid and meaningful results, this may not be the case for all applications of this framework. Hence, it is essential for the framework to be flexible towards the situations in which it is employed.

In effect, the flexibility of the framework to be employed in organisational environments other than tertiary institutions, as demonstrated throughout this study, is practicable. Slight modification of the framework for other organisations to assess the differences in security supply and demand can be readily performed. The prerequisite for successful utilisation of this framework in other environments is the requirement for identifying distinct differences between security services and customers. With these needs met, the framework is expected to return valid and useful results.

CHAPTER 7

Conclusion

Development of the security industry has seen an exponential increase in demand driven by the vast adoption in consumer requirements for services and product. Security professionals have needed to be able to react proactively to ensure this increase in demand is met and for continual development of the industry for the future.

For security professionals to achieve a successful provision of products and service, they must demonstrate advanced levels of conceptual understanding. Much of this type of understanding for security comes from the practical application of the theoretical beliefs and frameworks that encompass the security discipline. While the technology and business practices concerning the supply of security services has boomed in the last decade, the theory surrounding these services has not developed as quickly.

The purpose of this study was to contribute to the body of knowledge that surrounds the security industry and to empower security professionals with advanced levels of judgment and conceptual philosophy. The ability for the study to positively contribute to the intellectual component of the security industry will undoubtedly strengthen the conceptual body of knowledge and tools available to security professionals. The utilisation of the knowledge and

apparatus developed by this study can improve the quality of the work conducted by the security manager and in turn, positively affect the value of the security service.

The aim of this study is to explore a method that the security manager can use in determining the attitudes of the security service customers. An indication of the end user attitudes of the service was believed to be a reliable measure on which to gauge the quality of the security service. Furthermore, if the information from the end users could be extracted and analysed in a way that allowed it to be compared to the security supply, differences could easily be established between supply and demand. A security manager with realistic and recent end user information concerning the security supply could be empowered with superior levels of operational decision-making knowledge. The security manager would have justification and be able to identify areas of the security service that had the least level of impact on the requirements of the end users, and set about refining these issues. The ability for the security supply to be better matched to the security demand suggests that the service could operate with an enhanced degree of efficiency, for the security providers and consumers.

This study set about demonstrating the reliability and validity of a proposed method that a tertiary institution security manager could adopt. Success of this objective stipulated that a number of important questions had to be answered through the course of the research. This would ensure that all research objectives were met, and the purpose of the study was fulfilled. These questions are:

1. What are the attitudes of residential students towards the services that proprietary university security provides?

2. Which issues provide the greatest difference in university security supply and demand?

3. What are the differences in supply and demand between two similar university security services?

4. How can customer security service issues be identified?

The end user component of the study required the administration of an attitude assessment tool to a distinct group of customers utilising the tertiary security service. The recruitment of residential students from two Perth universities satisfied this requirement. The decision to compare and contrast study results from two universities was to demonstrate the effectiveness and reliability of the proposed method. Selecting an appropriate form of data collection was essential in proving the worthiness of this methodology. The Likert questionnaire was found to return useful results with a minimum amount of effort, thus allowing more individuals to be surveyed, which supported the achievement of the research objectives.

Recruitment of residents was performed on three different campuses: Mount Lawley and Joondalup campuses to represent Edith Cowan University, and Murdoch campus to represent Murdoch University. The Likert test comprised of twenty questions exploring five different issues that related to the security service. Fifty students from Mount Lawley campus and fifty from Joondalup campus were recruited to represent the overall attitudes of Edith Cowan

University residents. One hundred residents were recruited representing residential attitudes from Murdoch University. Combined, the emerging results provide an indication of security demand. Security supply was also assessed through the utilisation of a structured interview that was administered to security professionals from each university.

Results of the Likert questionnaires required analysis in order to extract the most useful information from them and make comparisons between the associated security supply and the other university. This allows meaning and relevance to be placed on the information by comparison of data. Mean statement scores, standard deviation scores, correlation analysis (dimensions and gender) and the depth interview analysis technique was used throughout the data analysis phase of the study. Results indicate that residents from both universities generally responded in a similar way, indicating that the issue of Performance had high magnitude, while the issues of Lifestyle and Requirement returned low magnitude.

Difference in the attitudes between the two universities was low to medium thus indicating that the demand for tertiary security services is generally similar. However, the difference in the level of security supply between the two universities was considered to be medium. Murdoch University appear to offer their students a security service superior to Edith Cowan University and this was likely to be the cause of the consistently greater endorsement of the security issues from Murdoch University residents.

Finally a framework for the identification of the supply and demand was developed to assist the university security manager to better identify anomalies in the provision of security. This framework provides superior levels of justification towards the concept of enhancing the university security service.

The contrastive procedure between two Perth universities served to better identify issues and subsequent trends consistent with the requirements for residential students. The original intention of administering the attitude measurement tool to a number of different campuses spanning two separate universities was to highlight the effectiveness of utilising such a technique. The Likert testing procedure appeared to return valid and reliable results in a fast and efficient manner. These requirements are mandatory for proving the overall usefulness of this procedure as a support tool for the security manager.

A likely example of the potential for this study to support the security manager is with consideration for security outsourcing. The framework can support for and against arguments for outsourcing the security service, by drawing on educated evaluations of both the security supply and demand. This methodology can provide security professionals with value-added outsourcing decision-making knowledge, based on factors other than cost. This tool can potentially offer increased operational knowledge with the intention of better meeting the security requirements of the end user. The assurance of better provisions of security in the future for both providers and consumers will rely on an increase in the understanding of the requirements of the end user. This study has proposed a methodology and framework for that understanding to be achieved.

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Appendix A

Definitions of Security Service Issues

Familiarity

In a residential environment, familiarity occurs when the residents who reside in student village have had a certain level of contact with the security staff. Students are familiar with security officers after an individual has been acquainted with the security staff and has some idea of how this service is supplied. It is reasonable to assume that the more times a resident uses the security service, the greater their familiarity of the service and its personnel.

Effectiveness

The level of effectiveness, as judged by the resident, is indicative of the way the security service is portrayed to the individual. Effectiveness differs from performance in the way that security may well be capable of executing their functions, but effectiveness further considers their attitudes, level of care and positivism when performing their duties. It is believed that this attitude is instrumental in achieving end user acceptance and is most prevalent with people who are proprietary staff of the organisation.

Requirement

A successful university security service must be able to identify and satisfy the security requirements of their customers. An understanding of the level of demand that residents place on the security service will assist the university security manager in identifying the needs of the residents and coordinating the security service respectively. The security requirements of residents form the basic demand foundation.

Performance

The level of performance, with regard to how the security service is carried out, satisfies the basic supply component of the study. The ability to perform according to the residents' attitudes is directly related to whether the security officers are capable of carrying out their basic job functions. Performance is not intended to be an assessment of how well this is carried out.

Lifestyle

The assessment of the resident's attitudes towards their way of life is important when determining the balance of supply and demand. Residents will require security to create a relatively predictable environment in which they consider it is safe for them to carry out their ends without disruption or fear (Fischer & Green, 1992, p. 3). The resident's attitudes towards lifestyle are also important in further determining the basic demand on the security service.

Pilot Test

A study of the attitudes towards security at Student Village

This study is being conducted as part of the thesis component of the Bachelor of Science (Security) Honours degree at Edith Cowan University. This research is being conducted independently, with the researcher having no affiliations with any organisation or institution other than the said university.

The study is focusing on student village resident perceptions on the supply of security personnel around student village. Below you will find a number of statements about security at student village and around the university. I would like to know what your feeling is regarding each statement. There are no right or wrong answers so choose the response option you feel is most appropriate.

Opposite each statement is a response option; please circle the option that you feel most closely match your feeling towards the associated statement. Please be sure to answer every question and do so truthfully. Completing this questionnaire will take only a few minutes of your time and your current position will not be prejudiced in any way by your refusal to participate.

Example:

White wine should only be served with fish.   SA (A) U D SD

Personally I agree, therefore I circle 'agree'. You are to answer the statements on the basis of how much you agree or disagree. If you cannot decide, or don't know, circle 'undecided'.

The statements use an abbreviated key for answering where:

SA	=	Strongly Agree
A	=	Agree
U	=	Undecided or don't know
D	=	Disagree
SD	=	Strongly Disagree

This is an anonymous questionnaire. Please ensure that you do not write your name, or any other comments that will make you identifiable, on the attached form. By completing the questionnaire you are consenting to take part in this research. As such you should fully read this Disclosure Statement carefully as it explains fully the intention of this project. If you choose to take part in this research and require a record of this statement, you only need to return the one page questionnaire.

Any questions concerning the project entitled "A cross-institutional evaluation on the supply and demand of the security function", can be directed to Shane Norton of the School of Engineering and Mathematics on 9442 4035. If you have any concerns about the project or would like to talk to an independent person, you may contact Andrew Blades on 9400 5836.

Thankyou for your assistance

Shane Norton.

Questionnaire

I am (please tick): ☒ Male   Female

1. I am aware that the university has a security service.   **SA A U D SD**

2. I am familiar with the security officers that are around the village.   **SA A U D SD**

3. I am happy with the service that security supplies.   **SA A U D SD**

4. I believe that the security service increases the quality of living.   **SA A U D SD**

5. I believe that there is room for improvement in the service.   **SA A U D SD**

6. I consider the security service to be efficient and responsive.   **SA A U D SD**

7. I feel safer when I see security officers around the village.   **SA A U D SD**

8. I feel that the security officers are not needed around the village.   **SA A U D SD**

9. I feel that the security services offered do not meet my needs.   **SA A U D SD**

10. I know the security staff by face and know that they belong here.   **SA A U D SD**

11. I often use the security services offered by the university.   **SA A U D SD**

12. I see no need for security officers to be at my university.   **SA A U D SD**

13. I will not hesitate to contact security if required.   **SA A U D SD**

14. I would not like to see the security service cut back.   **SA A U D SD**

15. I would not trust the security officers.   **SA A U D SD**

16. Security is always willing to help when I ask for it.   **SA A U D SD**

17. The security officers are understanding towards my needs.   **SA A U D SD**

18. The security service is currently inadequate.   **SA A U D SD**

19. The university makes it easy to contact security.   **SA A U D SD**

20. You can never have too many security officers at university.   **SA A U D SD**

Appendix C

Pilot Study Results

								Thesis Pilot Study Likert Test Results													
Survey Num	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Average
Question Num																					
1	4	5	5	2	4	4	4	5	4	5	4	5	3	5	4	5	4	5	4	4	4 25
2	2	4	5	4	4	4	4	4	4	4	2	4	2	2	4	5	2	5	5	2	3 60
3	3	4	1	3	2	3	2	5	3	4	2	4	3	3	4	5	3	5	4	4	3 35
4	4	4	1	3	4	4	4	4	5	4	4	3	4	2	2	5	3	5	4	3	3 60
5	2	2	2	2	1	3	1	3	1	1	1	4	2	2	2	2	3	3	2	2	2 05
6	4	4	2	4	2	4	2	4	4	4	3	4	3	3	4	5	3	4	3	4	3 50
7	5	5	1	4	4	4	4	5	5	4	4	4	4	3	3	4	5	5	3	4	4 00
8	4	5	5	5	4	4	5	2	5	2	5	5	4	5	4	5	5	5	4	4	4 35
9	4	4	1	4	3	4	3	5	3	3	3	4	3	5	4	2	3	5	1	4	3 40
10	2	4	5	5	4	2	4	3	4	4	4	2	2	3	4	4	2	5	5	2	3 50
11	3	4	3	2	3	2	4	3	3	1	2	3	2	2	2	4	2	3	2	5	2 75
12	4	5	5	5	4	4	5	3	3	3	5	4	5	5	4	5	5	5	5	5	4 45
13	3	5	5	4	4	4	4	5	4	3	4	5	4	5	4	5	5	5	5	5	4 40
14	4	5	5	4	5	4	1	4	3	3	5	4	4	5	4	5	5	5	1	5	4 05
15	2	5	5	4	4	4	4	3	3	3	4	4	3	4	2	5	4	5	5	4	3 85
16	4	5	5	4	4	3	4	4	4	3	3	4	3	4	4	5	3	5	5	4	4 00
17	4	5	5	3	4	3	4	4	4	3	4	4	3	3	4	5	3	4	5	4	3 90
18	4	3	2	4	1	3	1	3	2	3	2	4	3	2	3	3	3	5	2	4	2 85
19	3	2	5	4	2	4	4	4	4	5	2	5	3	5	4	5	4	5	4	5	3 95
20	4	5	5	3	5	4	5	5	5	4	5	5	4	5	5	5	5	5	5	5	4 70
Male/Female	2	2	1	1	1	2	1	2	1	1	1	2	1	2	2	1	2	2	1	2	1 50

Following is a description of those statements that required modification before the final Likert test could be administered. The modification is based on the usefulness of the returned means, and feedback from the participants and the face validity assessor. Statements that did not require modification were not discussed.

Male/Female Respondents were asked to circle their gender instead of tick the selection, to maintain the continuous circular response action throughout the survey. The line was also justified to the left to decrease the likelihood of participants overlooking the line.

Statement 1 The statement was reworded in 3rd person perspective, to increase the directness of the statement and provoke a stronger response.

Statement 2   The statement was altered for 3rd person perspective, to reduce the wordiness of the line.

Statement 3   The statement was modified after some confusion as to the meaning of security supply. The word "campus" was included to reinforce the scope of the study and the word "supplies" was replaced with "provides" to minimise uncertainty.

Statement 4   The statement was reworded in 3rd person perspective, to increase the directness of the statement and provoke a stronger response.

Statement 6   Respondent confusion regarding exactly what the statement was trying to suggest was noted, where the words "and responsive" were removed to counteract this.

Statement 9   3rd person perspective was adopted for this statement, to increase the impact on the respondent. The word "offered" was changed to "provided" to better reflect the role of university security.

Statement 10   The statement was reworded to more clearly elicit responses concerning the familiarity dimension after feedback suggested the line was difficult to understand.

Statement 11   The word "often" was replaced with "do" to strengthen the attitudinal impact of the statement. The word "offered" was replaced with "provided" for the reason explained in statement 3.

Statement 13   The addition of "if I require their services" was included to better indicate the direction of the statement.

Statement 14 The words "cut back" were replaced with "decreased" to increase the clarity of the statement as feedback indicated some confusion concerning this element.

Statement 16 The words "when I ask for it" were replaced with "when I request it" to decrease the wordiness of the statement.

Statement 17 The word "needs" was replaced with "requests" to focus the statement on the effectiveness dimension after participant confusion was noted concerning the meaning of "needs".

Statement 18 The addition of the word "responsiveness" was added to increase the statement's relevance to the performance dimension.

Statement 20 The statement was reworded completely after the pilot test indicated the inappropriateness of utilising a line written in 2nd person perspective. Focusing on the 24-hour security at student village was expected to more strongly elicit responses related to the lifestyle dimension.

Appendix D

Face Validity

Face Validity of Evaluation Instruments

The measurement instruments of the study were designed to examine attitudes of subjects in three test groups and their supervisors for their attitudes towards the security function at Australian student villages. The instruments have employed the Likert Scale to estimate the attitudes of subjects to a selection of issues concerned with levels of user acceptance of security of students in the university context, and the understanding of the issues of student protection by structured interview of the Security Managers of the university student villages.

The Likert Scale tests were composed of definite statements presenting a point of view within the domain of the issues of the security function from protection of university student villages. The Likert Scale allows the subjects to respond according to their respective attitudes towards the statements. An examination of the instrument indicates that it is both substantial in content and application, and that the tests will most satisfactorily fulfil the function of their design. The Likert Test has face validity for the proposed function and application of the instrument.

The structured interview instrument has been designed to obtain relevant information from the perspectives of the Security Managers of the university student villages. The interview questions are direct and coherent, and have the potential to elicit responses that are highly relevant to the investigation. This instrument should enhance the capacity to understand the issues of the investigation, and contribute to the success of the project. The structured interview instrument has face validity for the investigation of the proposed project.

Dr Clifton Smith
Associate Professor
Security Science
School of Engineering and Mathematics
Edith Cowan University
5 November, 2000

Appendix E

Structured Interview

Interview Schedule

To be presented to both Edith Cowan and Murdoch University Security Managers

- Introductions
- Aim of the project
- Scope of the Project
- Significant Questions:
    1. How is the security service structured within the university?

    _____

    _____

    _____

    2. What are the significant roles that security plays in the university?

    _____

    _____

    _____

    3. Does the university utilise an outsourced or propriety security function?

    _____

    _____

    _____

    4. What type of needs do you believe students most often require?

    _____

    _____

    _____

    5. How close are these needs met?

    _____

    _____

    _____

6. What role does security play in the university after hours?

_____

_____

_____

7. Is this role different to that during office hours?

_____

_____

_____

8. Do residential students require any special attention?

_____

_____

_____

9. How does security provide its service to residential students?

_____

_____

_____

10. Do you believe that residential students utilise the security service effectively?

_____

_____

_____

11. How often would security officers visit student village in a 24-hour shift?

_____

_____

_____

12. Does student village often present situations that are extraordinary?

_____

_____

_____

13. Do you feel that the current security arrangement for the university is the most appropriate?

_____

_____

_____

14. Does the security department generally receive praise for its work?

_____

_____

_____

15. Is the security service under pressure from management to operate in a more efficient manner?

_____

_____

_____

16. Do you feel that there may be potential in outsourcing the security function or keeping it in-house?

_____

_____

_____

17. Do you believe that in the future, security's role will differ?

_____

_____

_____

Thankyou for your time.

Appendix F

Likert Test

A study of the attitudes towards security at Student Village

This study is being conducted as part of the thesis component of the Bachelor of Science Honours (Security) degree at Edith Cowan University. This research is being conducted independently, with the researcher having no affiliations with any organisation or institution other than the said university.

The study is focusing on student village resident perceptions on the supply of security personnel around student village. Below you will find a number of statements about security at student village and around the university. I would like to know what your feeling is regarding each statement. There are no right or wrong answers so choose the response option you feel is most appropriate.

Opposite each statement is a response option; please circle the option that you feel most closely match your feeling towards the associated statement. Please be sure to answer every question and do so truthfully. Completing this questionnaire will take only a few minutes of your time and your current position will not be prejudiced in any way by your refusal to participate.

Example:

White wine should only be served with fish.   SA(A)U D SD

Personally I agree, therefore I circle 'agree'. You are to answer the statements on the basis of how much you agree or disagree. If you cannot decide, or don't know, circle 'undecided'.

The statements use an abbreviated key for answering where:

SA	=	Strongly Agree
A	=	Agree
U	=	Undecided or don't know
D	=	Disagree
SD	=	Strongly Disagree

Disclosure Statement

This is an anonymous questionnaire. Please ensure that you do not write your name, or any other comments that will make you identifiable, on the attached form. By completing the questionnaire you are consenting to take part in this research. As such you should fully read this Disclosure Statement carefully as it explains fully the intention of this project. If you choose to take part in this research and require a record of this statement, you only need to return the one page questionnaire.

Any questions concerning the project entitled "A cross-institutional evaluation on the supply and demand of the security function", can be directed to Shane Norton of the School of Engineering and Mathematics on 9442 4035. If you have any concerns about the project or would like to talk to an independent person, you may contact Andrew Blades on 9400 5836.

Thankyou for your assistance

Shane Norton.

Questionnaire

* I am (please circle): • Male • Female

21. The university has a security service to protect staff and students. **SA A U D SD**

22. The university security officers around the village are familiar. **SA A U D SD**

23. I am happy with the services that campus security provides. **SA A U D SD**

24. The university security service improves the quality of living. **SA A U D SD**

25. I believe that there is room for improvement in the service. **SA A U D SD**

26. I consider the security service to be efficient. **SA A U D SD**

27. I feel safer when I see security officers around the village. **SA A U D SD**

28. I feel that the security officers are not needed around the village. **SA A U D SD**

29. The security services provided do not meet my needs. **SA A U D SD**

30. I know the security staff by face when I see them on campus. **SA A U D SD**

31. I do use the security services provided by the university. **SA A U D SD**

32. I see no need for security officers to be at the university. **SA A U D SD**

33. I will not hesitate to contact security if I require their services. **SA A U D SD**

34. I would not like to see the security service decreased. **SA A U D SD**

35. I would not trust the security officers. **SA A U D SD**

36. Security is always willing to help when I request it. **SA A U D SD**

37. The security officers are understanding towards my requests. **SA A U D SD**

38. The responsiveness of the security service is inadequate. **SA A U D SD**

39. The university makes it easy to contact security. **SA A U D SD**

40. It is an important benefit for the village to have 24-hour security. **SA A U D SD**

Appendix G

Raw Data

Main Study Study Results

Question Num	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	M/F
Survey Num Mt Lawley																					
1	5	4	5	4	2	5	5	5	5	4	2	5	5	5	5	5	5	5	4	5	2
2	4	4	2	4	2	4	5	5	4	4	4	5	5	5	4	4	4	2	4	5	2
3	4	5	4	4	1	4	5	4	4	4	4	4	4	2	4	4	5	3	4	4	2
4	4	2	4	4	2	3	5	5	4	2	2	5	3	4	5	4	4	4	4	4	2
5	4	4	4	3	2	3	4	5	3	4	4	5	5	5	3	4	4	4	4	2	1
6	4	2	3	3	2	3	4	5	3	4	2	5	4	1	4	3	3	3	3	4	2
7	4	2	1	5	1	1	4	5	1	2	2	5	5	5	4	3	3	2	2	4	1
8	4	4	4	4	2	4	4	4	4	4	2	4	4	2	4	4	4	4	4	4	1
9	5	5	5	5	2	4	5	5	4	5	5	5	5	5	5	4	4	2	2	5	1
10	4	2	4	4	2	4	4	5	4	2	3	5	4	4	4	3	3	4	4	5	2
11	4	4	4	4	2	3	4	5	4	3	3	4	5	4	5	5	5	3	5	5	2
12	4	5	4	3	3	4	4	5	4	4	3	5	5	4	5	4	3	3	3	5	2
13	4	4	4	4	3	3	5	4	4	3	1	3	2	4	4	3	3	3	4	4	1
14	5	3	3	4	2	4	5	4	3	3	3	4	5	4	4	3	3	3	4	4	1
15	4	3	4	3	3	4	3	3	4	2	3	3	3	3	3	4	2	2	3	4	2
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Joondalup

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Average	4.20	3.50	3.78	3.60	1.98	3.60	4.00	4.38	3.46	3.02	2.70	4.54	4.20	3.88	4.20	3.72	3.50	3.20	3.92	4.60		1.46

ECU Average   4.16   3.45   3.73   3.65   1.95   3.49   4.11   4.40   3.56   3.05   2.81   4.54   4.19   3.94   4.21   3.72   3.55   3.19   3.93   4.52   1.55

Murdoch

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82	5	4	4	4	3	4	3	4	5	2	2	4	4	4	5	4	4	4	4	4		1
83	4	4	4	3	4	4	3	5	4	4	4	5	4	4	4	4	4	4	4	5		2
84	4	4	3	4	1	4	5	5	2	2	4	5	5	5	5	5	5	1	5	5		1
85	5	4	4	4	3	4	4	5	4	4	4	4	4	5	4	4	4	4	4	4		1
86	5	4	4	4	1	4	5	4	3	4	3	4	3	2	4	4	4	3	3	5		2
87	4	4	3	3	2	3	5	5	3	4	4	5	4	5	4	3	4	4	4	5		2
88	4	4	4	5	2	5	5	5	3	1	2	5	5	5	5	2	2	2	4	5		2
89	5	4	5	4	3	4	4	5	5	4	4	5	5	5	5	4	4	4	5	5		1
90	4	4	4	5	2	4	4	4	4	2	2	4	4	4	4	4	4	4	4	4		2
91	4	3	4	2	1	3	4	5	3	2	4	5	4	5	4	3	3	3	4	5		2
92	5	4	5	4	1	4	5	5	5	5	5	5	5	3	4	4	5	5	5	5		2
93	4	3	3	4	2	4	4	4	3	2	2	4	2	3	4	4	4	3	4	5		1
94	5	3	4	5	2	4	4	4	4	1	3	4	5	5	3	5	4	4	4	5		1
95	5	5	4	4	2	4	2	4	5	4	4	5	5	5	5	4	5	4	5	5		1
96	4	4	5	5	1	5	4	5	4	4	5	4	5	4	2	4	4	2	4	5		2
97	4	3	4	4	3	4	4	4	4	2	2	4	4	5	4	4	4	4	4	5		1
98	4	3	4	5	2	4	5	5	5	2	4	5	4	5	4	4	4	5	5	5		2
99	4	4	4	4	1	3	5	5	3	3	4	5	5	5	5	4	4	3	4	5		1
100	4	2	4	3	3	4	4	4	5	1	1	5	5	5	4	3	3	3	4	5		1
Average	4.34	3.67	3.97	3.88	2.29	3.72	3.95	4.27	3.74	2.98	3.18	4.50	4.16	4.20	4.03	3.69	3.52	3.50	4.24	4.61		1.61

Processed Survey Data

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	M/F
Total Av																					
ECU	4.16	3.45	3.73	3.65	1.95	3.49	4.11	4.40	3.56	3.05	2.81	4.54	4.19	3.94	4.21	3.72	3.55	3.19	3.93	4.52	1.55
Murdoch	4.34	3.67	3.97	3.88	2.29	3.72	3.95	4.27	3.74	2.98	3.18	4.50	4.16	4.20	4.03	3.69	3.52	3.50	4.24	4.61	1.61
St Dev																					
Mt Lawley	0.56	1.12	0.84	0.81	0.70	0.83	0.91	0.67	1.06	1.16	1.16	0.58	0.92	1.36	0.71	0.76	0.78	0.90	0.91	0.76	
Joondalup	0.57	1.09	0.84	0.86	0.84	0.78	0.99	0.75	0.99	1.32	1.13	0.61	0.86	1.33	0.70	0.86	0.89	0.99	0.78	0.70	
ECU	0.56	1.10	0.84	0.83	0.77	0.81	0.95	0.71	1.03	1.23	1.14	0.59	0.88	1.34	0.70	0.81	0.83	0.94	0.84	0.73	
Murdoch	0.50	0.90	0.73	0.88	1.00	0.81	0.86	0.75	0.88	1.16	1.18	0.64	0.88	1.13	0.80	0.86	0.77	0.94	0.61	0.58	