# Organisational Space and

# Multi-locational Workers:

## A case study of the Forum Building

## at the University of Exeter

Submitted by Polina Nikolaou to the

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I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

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# Abstract

As businesses are becoming increasingly aware of their ever changing market environments; constraints and opportunities arise which result in organisations evolving and re-structuring accordingly. Therefore, their organisational spaces are evolving to follow suit.

A theoretical shift has occurred in OT, from considerations of space as an 'organisation' to 'organising' viewing space as processual which involves an understanding of space as something which is continually produced and re-produced through social relations (Dale & Burrell, 2008). While in the past organisational space often referred to the interior space of an organisation, consideration of recent literature demonstrates that organisational space is not limited to the internal, but also includes the external space of an organisational building. The key points of the literature review are centred on the users in the space, as well as the materialisation of power through spatial design and space as an experience.

A mixed-method approach of observation, interviews and a questionnaire are used to understand the Forum user; defined here as a form of multi-locational worker. The case study approach on the Forum Building at the University of Exeter is used to position a typology of University open workspaces in the wider context of open, public and communal [OPC] workspaces, with the intention of generating research directions that extend current theory.

Key results of this study are the 'unspoken reciprocity' among Forum users and the importance of 'visuality'; the act of seeing while being seen, in motivating individuals. Furthermore, the spatial elements of 'flexible accessibility', 'flexible workspaces' and active atmosphere are major contributors to making the Forum space an attractive workspace in the current University trend of 'interdisciplinary spaces' (Coulson et al., 2014; Temple, 2014).

This thesis makes both a theoretical and methodological contribution to the organisational studies literature through the holistic case study approach to viewing organisational spaces. Through a socio-spatial perspective of multi-locational users' perceptions of their changing everyday working environment, the research provides significant insight into the conceptualisation, design, operations and management of such spaces.

**Key Words:** Organisational Space, interdisciplinary spaces, mixed methods, socio-spatial analysis, The Forum

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# 1. Introduction

The physical structure of organisations plays an important role in the modern business world. As businesses are becoming increasingly aware of their ever changing market environments, with constraints and opportunities arising, result in organisations evolving and re-structuring accordingly (Brookes, 1972). Offices are increasingly becoming 'obligatory points of passage' movement of people and things throughout modernity (Hetherington, 1997). In an increasingly volatile environment, investments in technology and skills as well as organisational spaces and planning are crucial to maintain the versatility required for a successful future of the organisation and its employees. Particularly those people which are considered as multi-locational or mobile workers (Vartiainen, 2008). Therefore interests in space and spatiality emerge and they encourage new ways of understanding the significance and meaning of everyday organisational environments.

This chapter provides a background context of space, spatiality and organisational space. Following this, an introduction is made of the main field of this study, organisational space and the multi-locational worker. Furthermore, the third section of this chapter presents the aims, objectives and research questions for this study. The chapter concludes with an overview of the structure of this thesis.

## 1.1. Background Context

### 1.1.1. Space and Spatiality: Overview

In the social sciences and humanities the notions of 'space' and spatial concepts as well as these terms or others, such as territory, locality, landscape, milieu, have engaged an increasingly significant role with respect to understanding the environment, social processes and the way people move in space (Gregory & Urry, 1985). This process of understanding is often described as the 'spatial turn' which emerged in the 19th Century. The term 'spatial turn' suggests a trans-disciplinary phenomenon, a sort of trend at the time that affected a range of disciplines in the humanities and social sciences (Baskar,

2013). It is important to determine what is 'space' and subsequently the 'spatial turn' which lead to the approach termed 'spatiality'.

'Space'[1] is often an under-examined term because its various meanings differ from context to context: however it remains possibly one of the fundamental categories of human experience. In the multiple definitions of space, Bochner (1973) as cited in Zhang (2009), locates space within two dimensions: the 'material' and 'immaterial'. The first, can be used to explain either nature (eg: planets, mountains, oceans) or human artefacts (eg: buildings, furniture, layouts), and the variable distances between these (Zhang, 2009). The later, immaterial – dimension is more conceptually ambiguous. Nevertheless, it is often argued that 'immaterial' space has become an instrument for people's understanding. For example, it is utilised in locating relationships ('close' friends), space as discussed in an 'interval' between time measurements, and in academia it is used to describe an absence of theory referred to as a 'gap' (Zhang, 2009). Regardless of this, 'space' in general, does not create confusion in its use in daily communication. While it has been explained that 'space' can be multi-faceted in different conversational contexts, in organisational theory or management, it is often associated with materials and their Euclidean arrangements (Hetherington, 1997a). The meaning and understanding of space is frequently challenged against those of 'place'. Withers (2009, p. 638) explains that space and place are "regular epistemic dancing partner[s] in geographical ubiquity" yet both remain complex terms. During the time new forms of mathematically-oriented spatial science were progressing, humanistic geographers such as Casey (1997) engaged increasingly with concepts concerning the 'sense of place'. It can be argued that since then sense of place became a primary point of research and study while space was a setting in which place occurred. Place was not to be premeditated as a fragmented unit of space but was much more of concept, a way of 'being in the world'[2] (Withers,

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[1] The 'space' referred to here, is <u>not</u> the 'out of this world' (150km upwards) outer space. According to Bochner (1973) as cited in Zhang (2009), every day conversations about space range from 'absolute emptiness' to 'the expanding universe', identifying eighteen definitions of space.

[2] Supported by humanistic geographers such as Yi-Fu Tuan (1974, 1977), Anne Buttimerand David Seamon (1980), and Edward Relph (1962, 1976).

2009). In this way, space took a similar approach to viewing reality spatially or spatiality as it is now described.

'Spatiality' relies primarily on spatial theories developed by urban sociologist Henri Lefebvre (1991) and then further expanded by Edward W. Soja (1996). Henri Lefebvre's (1991) work on 'The Production of Space', distinguishes three aspects of social space which has come to be known as a 'spatial triad'. Lefebvre's (1991) three aspects are: representations of space, representational space and spatial practice, also referred to as conceived, lived and perceived spaces respectively. Lefebvre's work evaluates spaces as moderators of relationships as they integrate action that the conceptualization of space implies the construction of a tool for analysing society (Dobers & Strannegård, 2004). Lefebvre (1991) discusses the methods in which understandings of space are cultural and therefore have a history of change, thus leading to a conceptualisation of space as fundamentally social. This historicality and sociality is what Soja's (1996) work highlights in Lefebvre's (1991) concept. Soja (1996) views Lefebvre's (1991) spatial triad as a 'trialectic' between the perceived, conceived and lived, resembling what Soja terms as 'Firstspace, Secondspace and Thirdspace'. According to Soja (1996, p.56 - 7):

> "Everything comes together in Thirdspace: subjectivity and objectivity, the abstract and the concrete, the real and the imagined, the knowable and the unimaginable, the repetitive and the differential, structure and agency, mind and body, consciousness and the unconscious, the disciplined and the transdisciplinary, everyday life and unending history".

Although Soja's (1996) theorisation of spatiality, thirdspace and 'thirding' or 'thirding-as-Othering' and other terminology have been challenged by reviewers such as Merrifield (1999) for being ambiguous and complex. Nevertheless, Soja (1996) sparked new ways of thinking about space by viewing Thirdspace and an analytical concept that encourages people to come to terms with the representational strategies of real and imagined places. Moreover, Thirdspace can also be seen as a process and a dynamic influence that is actively being produced and reproduced throughout time (Ikas & Wagner, 2009). Therefore, if space can be argued to be socially constructed, then the social is spatially constructed (Massey, 1994). For the above reasons, it can be seen how spatiality can offer an alternative perspective to viewing the world, reality,

knowledge and even the organisational everyday life. Tentatively summarising, in addition to viewing the world or more precisely an organisation historically and socially, equally it should be viewed spatially.

## 1.1.2. Organisational Space: Overview

'Organisational Space' as a subject matter has emerged in a variety of disciplines (Dale & Burrell, 2008; Van Marrewijk & Yanow, 2010). This research has centred around management and organisation theory (OT)[3] and the conceptualisations of space in the analysis of organisation and organising. A theoretical shift has occurred in OT, from considerations of space as 'spatiality' (Lefebvre, 1991; Massey, 1994; Soja, 1996) and further from 'organisation' to 'organising' viewing 'organisational space' as processual which involves an understanding of space as something which is continually produced and re-produced through social relations (Dale & Burrell, 2008). This is reflected in studies of organisational space and involve an alternative exploration of space as 'processual' and 'performative' (Beyes & Steyaert, 2012, p.1976).

The "Hawthorne Studies" is one of the earliest experiments cited frequently within OT literature when discussing organisational space (see: Dale & Burrell, 2008; Duffy, 1974; Hatch & Cunliffe, 2006; Taylor & Spicer, 2007; Van Marrewijk & Yanow, 2010; Zhong & House, 2012). Its origin and implications have led to further research which has provided an understanding of the underlying immaterial and metaphorical possibilities of organisational space (Zhong & House, 2012). Additionally, the Hawthorne Studies, which are influenced by the 'Principles of Scientific Management' introduced by Frederick Taylor (1911), link organisational space to OT. The linkage here is less spatial and is frequently explained as an environmental connection of illumination and temperature. Nonetheless, it lays the foundations for organisational space and OT research. The original Hawthorne studies began in 1924 and were geared by The Western Electric Company and an interest in the relationship between changes in lighting levels (bright to dim illumination) and productivity at the Hawthorne plant. A collaboration with the Massachusetts Institute of Technology (MIT) and Harvard University further supported the study by looking

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[3] Organisation theory (OT) concentrates on the study of organisational phenomena (at both macro and micro levels) and thus is used interchangeably with the term 'organisation studies' (Tsoukas and Knudsen, 2003).

for a connection between working time and productivity. The experiment consisted of two groups of people working in controlled environments; one acting as a control, while the other experienced a change in lighting conditions. Early results showed that both groups had a similar increase in the rate of productivity (Wickstrom & Bendix, 2000). Nevertheless, Elton Mayo (1933), a psychologist and organisational theorist, encouraged management to observe beyond the physical and visible factors which influenced productivity, a relationship which was deemed unimportant until it was identified during the 1970s and 1980s by George Homans[4]. Nonetheless, the initial intention behind the Hawthorne effect was to study the effect of the physical working environment on employees. While, the study encouraged a wave of research on social relations and how they shape organisational outcomes, other important psychological outcomes remained under-explored, until recently (Zhong & House, 2012). The studies born out of further interest in the failure of the Hawthorne study provide valuable insight into better understanding organisational space. For example, the perspective of the body as a medium of sensory receptors and motor organisms through which the mind interacts with the environment (Gigerenzer & Goldstein, 1996). As a result of these studies it was shown that the physical environment constitutes a large part of understanding organisational space.

## 1.2.  The significance of this study

### 1.2.1.  Organisational Space and the Multi-locational Worker

Whilst in the past organisational space often referred to the interior space of an organisation, consideration of recent literature demonstrates that organisational space is not limited to the internal, but also includes the external space of an organisational building. Examples are social spaces immediately available outside the building and the space created by home workers and mobile workers, which can also be applicable to the field of organisational space (Vartiainen, 2008; Venezia et al., 2008). Through an analysis of power and identity, it is argued that the field of organisational space can be expanded to

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[4] Homans (1950) was an American Sociologist, who wrote a book titled 'The Human Group' which remained in the shadows until environmental psychologists brought it to light (Hatch and Cunliffe, 2006).

include public communal places, which are becoming increasingly incorporated into contemporary working practices. This has meant that people and employees are becoming increasingly mobile and multi-locational through the aid of modern and more importantly 'mobile' technologies; thereby altering organisational working practices and spatial designs (Bosch-Sijtsema et al., 2010). While, 'mobile' and 'teleworking' have become widespread terms, others include 'hybrid workspace' (Halford, 2005) or 'spatial mobility' which are used to define mobile teleworking, which is a form of working at a range of locations, spending regular and significant amounts of time away from any office or home location (Axtell et al., 2008). Historically, the literature and research studies focused on factories and the internal organisational spaces, lately there has been emphasis on knowledge workers and the impact of changes in space and behavioural implications. For example, factories and contemporary workspaces are studied at a relatively macro-level perspective of often private organisations (King, 1984). Whilst at Universities the spaces often under enquiry are the 'learning spaces' of professors, lecturers and postgraduate staff (Kolb & Kolb, 2005), whereas semi-public areas such as the cafeterias, libraries or other open-plan group areas are unobserved as organisational spaces and their influences on the wider daily users such as the students.

In recent years there has been a growth in the numbers and significance of the interdisciplinary research centres and working spaces within Universities' capital construction (Coulson et al., 2014). Particularly, academic library buildings which Carlson (2009, p. 1) further explains:

> "Today's academic-library buildings, more than any other campus structures, have to be all things to all people—places where social and intellectual pursuits collide, places that serve the community and the individual simultaneously. Dig into a book. Get a latte. Collaborate on a project. Nap during a study session. College libraries are a destination for those activities and more".

Public or communal-public spaces, such as these are not commonly viewed as organisational spaces. Studies of public and communal spaces are largely addressed in the field of urban, or city planning studies. Furthermore, these studies do not generally report on the intersection between work conducted / workers and communal - public space; rather they focus on subjects such as

work/ life balance, gender or technological communication. Therefore, knowledge about workers and working practices in these spaces is limited. Current studies concentrated through the lens of these as 'social institutions' or 'architectural form' (King, 1984), they are not often examined as components of both, designed architecturally and constructed and resisted socially as organisational spaces become 'lived' (Lefebvre, 1991).

## 1.3. Aims and Objectives

The main research aim of the study is to examine multi-locational workers and their use of space in open-plan public organisational environments. In this instance a study of the Forum building at the University of Exeter. In so doing, this thesis contributes to the socio-spatial school of thought by providing an understanding of the people who choose to work away from their private and traditional spaces; people who are termed here as multi-locational workers. Their profile and their motivations as well as their satisfaction of their experience in this space overall, is identified. Furthermore, this study makes reference to their perceptions of the Forum space, a space which can be described as an Open – plan Public and Communal (OPC) working space.

The aim is researched by the following objectives and related research questions (see also Table 1.1):

1. To investigate multi-locational users' current perceptions of a specific space

This objective attempts to explore certain patterns among the students using the space, such as frequency of visits or preferred times and other demographic characteristics in order to better understand the users of the space. Following this, an analysis of the main reasons for visiting the Forum is conducted in conjunction with the findings from the two further objectives. Through this, it attempts to pinpoint participant's motivations for working in the Forum.

2. To determine multi-locational workers' reasons for working in open-plan spaces

The second objective examines the reasons for participants choosing to conduct their work in an open public space such as the Forum. The associated research questions of the objective are to identify the different working spaces

which are available in the Forum and provide a comparison between them. It attempts to further examine statistical significances amongst their reasons and other variables.

**Table 1.1: Objectives and Associated Reasearch Questions**

| Objectives | Research Questions |
|---|---|
| **1) to investigate multi-locational users' current perceptions of a specific space** | i) What are the demographic characteristics of participants? |
| | ii) What are the main reasons for visiting the Forum space? |
| | iii) Can the motivations for working in the Forum be identified? |
| **2) to determine multi-locational workers' reasons for working in open-plan spaces** | i) Are there different working spaces /areas available in the Forum? |
| | ii) How can these areas be differentiated? |
| | iii) Is there any statistical significance between these areas and other variables in the study? |
| **3) to ascertain any patterns of understanding about a particular space** | i) What are the different activities going on in the Forum? |
| | ii) What are the different mediums used to conduct their activities? |
| | iii) Are there any themes which emerge from the data? |
| | iv) Can it be argued that the Forum is a representative case, of a given typology? |

(Source: Author)

3. To ascertain any patterns of understanding about a particular space

Objective three aims to provide a detailed understanding of the Forum space through the different type of activities and mediums being used in the space by participants, to determine any spatial casual effects. Since the study is primarily interested in interpreting individual multi-locational workers use of space,

recognising emerging themes is important. Furthermore, the last research question of this objective, aims to build on the results and analysis of the study, by attempting to position the Forum within a given typology.

## 1.4. Structure of the Thesis

This thesis is made up of seven chapters, including this one. The first chapter begins by providing a background context of the field of organisational space. It builds a picture of the recent trend of studying space and 'spatiality' in the social sciences. Additionally, the introduction chapter offers an overview of the field of organisational space, while also introducing the significance of this study through an analysis of organisational space and multi-locational workers. Subsequently, the aims, objectives and research questions for this study are introduce.

The second chapter is the literature review, which aims to highlight the relevant literature of the field of organisational space. The main aim of this literature review is to integrate different concepts within management and Organisational Theory literature and to highlight the gaps in the literature around organisational space. It begins with an examination of the different understandings of organisational space and the complexities of defining it. The review analyses power in the built form, particularly disciplinary power (Foucault, 1995) and its materialisation through organisational buildings. Furthermore, the review considers socially produced space, conceptually informed by Lefebvre (1991). With an understanding of the materialisation of disciplinary and spatial power through built form and socially produced space, an analysis of organisational space within a corporation follows; for example, organisational hierarchy, structure, communication and change. Furthermore, differences between space and creating a sense of place are compared and contrasted, and arguments are explored that explain the impact of trends such as home or tele-working, and how individual identities are developed through an understanding of these 'new' forms of organisational spaces. An integration of Actor –Network Theory (ANT) and the concept of Performativity is introduced as an alternative approach to appreciating organisational space.

The different approaches to organisational space are discussed next in chapter three; the methodology chapter. Throughout chapter three, the researcher reviews the methods and research strategies of previous relevant studies and makes a case for the particular methodology and methods which are employed in this study. In brief, the researcher believes this study is located within the 'interpretive paradigm' as informed by Burrell and Morgan (1979) and supported by other theorists in the 'socio-spatial school' such as Dale and Burrell (2008) and Taylor and Spicer (2007) as well as Van Marrewijk and Yanow (2010). Given the three strands: i) Space as a distance ii) Space as materialised relations and iii) Space as Experience, to approaching organisational space, the researcher argues that this study incorporates the three approaches through the objectives and research questions. Regarding the particular design and execution of methodological techniques, this research takes a mixed-method case study approach, consisting of elements of non-participant observation, semi-structured interviews and a questionnaire as primary sources of data. The subsequent section deliberates on the process of collecting data, such as a building a background introduction to the organisation and chosen case site, and discuss the design and execution of the specific methods employed. Fundamentally, the study takes a mixed-method approach, by collecting and analysing both qualitative and quantitative data, through non - participant observations, interviews and a questionnaire of 102 participants.

One of the two results chapters, chapter four is the presentation and analysis of the qualitative results from the observational and interview data collected. This chapter builds an understanding of a certain type of multi-locational worker in a particular open public working setting, the 'Forum Worker' at the University of Exeter. The first section of the chapter, 'The Forum Workers', provides an overall demographic discussion on the sample of interview participants. The second begins to build an understanding about the participants' use of the space from observational and interview data, categorised by: What, How, Where and Why?  The subsequent section develops the results from a thematic analytical approach, through two main themes: unspoken reciprocity and the isolated scholar. The chapter concludes with the limitations of the current qualitative findings which provide a starting point for the next stage of quantitative analysis.

Chapter five is the second of the two analysis chapters, and its main aim builds on the results from the interviews by contributing a statistical significance to existing qualitative data. A series of univariate, bivariate and multivariate tests and techniques are employed to statistically analyse the questionnaire data. Furthermore, where relevant it provides comparisons between the qualitative and quantitative results.

Succeeding chapters four and five on the qualitative and quantitative analysis of observational, interview and questionnaire data, chapter six discusses the results further. Chapter six aims to position a typology of University open workspaces in the wider context of open, public and communal [OPC] workspaces. While the previous two chapters provided a thematic and statistical analysis of participants' perception, this chapter aims to position the Forum building within an OPC workspace typology in order to provide a more meaningful understanding of the certain type of workers, activities and habits taking place within these particular spaces, using results from this study. The chapter introduces a matrix of types of organisational spaces; with spatial designs (from traditional to open-plan) on the horizontal axis and types of workers according to mobility (from static to multi-locational), in order to frame the Forum space. This is followed by an exploration of the main and sub-dimensions which make up the typology of OPC spaces by arguing their importance and validity through past and existing findings from this thesis and arguing that the Forum space can be considered as an OPC type of workspace.

The scope of the final chapter is to highlight the main findings of the study in light of the three main objectives of the thesis, as well as present the implications derived from these findings. This leads to an analysis of the main contributions of the thesis, both methodologically and theoretically. In concluding this chapter and the thesis, the limitations of the study will be considered, as well as the possible directions of future research following this study, particularly the exploration of the field of multi-locational workers and their working spaces and practices within these spaces.

# 2. Literature Review

## 2.1. Introduction

'Organisational Space' as a research matter has recently developed in a variety of theoretical conceptualisations (see: Dale & Burrell, 2008; Van Marrewijk & Yanow, 2010). This research has focussed around management and Organisation Theory (OT)[5] and the conceptualisations of space in the analysis of organisation and organising within businesses. A theoretical turn has occurred in OT, from considerations of space as an 'organisation' to 'organising' viewing space as a process which involves an understanding of space as something which is continually produced and re-produced through social relations (Dale & Burrell, 2008); spatiality (Lefebvre, 1991). This is reflected in the current studies of organisational space and involve an exploration of space as 'processual' and 'performative' (Beyes & Steyaert, 2012, p.1976). The aim of this literature review is to integrate different concepts within management and OT, and to highlight the gaps in the literature around organisational space.

The subject of organisational space has been a relatively neglected field conceptually and empirically (Baldry, 1997; Baldry, 1999; Conradson, 2003). Throughout the current literature, the term 'Organisational space' appears in many aspects such as: working spaces, office landscaping, office planning and others. Presently, the majority of the literature is typically focused upon the design and planning stages of organisational space (see: Levin, 2005; Penn et al., 1999). There are some conceptualisations of organisational space within organisational studies, which tend to be studied in the context of office spaces or corporate buildings (Backhouse & Drew, 1992; Dale, 2005). For example, research is typically a comparison of open and closed (traditional) office spaces, or spatial layout (Button, 1997).

As previously highlighted in the introduction chapter of this thesis, literatures from geography and organisational studies offer 'spatiality' as an alternative perspective to viewing the world, reality, knowledge and therefore also

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[5] Organisation theory (OT) concentrates on the study of organisational phenomena (at both macro and micro levels) and thus will be used interchangeably with the term 'organisation studies' (Tsoukas and Knudsen, 2003).

organisational everyday life. This perspective, in addition to social and historical perspectives, allows for a more holistic review of the literature around organisational space. Therefore, the scope of this literature review includes themes and concepts of organisational space within the wider context of these disciplines.

The literatures reviewed in this chapter offer a traditional viewpoint of organisational spaces as well as a modern and integrated perspective of spaces in organisations. Therefore, throughout this review, it is important to maintain an integrated epistemological standpoint of the typically separated disciplines.

Historically, studies of space (whether inside or outside an organisation) tended to focus on the Euclidean considerations of space as a physical distance, something which is reviewed in the early sections of this review. However, these were often limited by their strict epistemologies, which through the literature review of organisation theory and studies propose a more acceptive perspective on the subject of organisational space as having a certain meaning to individuals in their everyday life. This is done through the combination of socio-spatial thoughts on both the users and their space, where by an approach to space as being socially produced as well as physically is applied. Additionally, the scope of the literatures is extended to a perspective where space is seen as something processual, constantly being created and recreated over time, rather than stagnant as previous notions suggest.

This chapter is divided into six principle sections. It begins with an exploration of different understandings of organisational space and the complexities of defining it. Subsequently, the review will analyse power in the built form. The nature of disciplinary power (Foucault, 1995) and its materialisation through buildings and consequently organisations. The notion of spatial surveillance as theorised by Foucault (1995), Dovey (2008) and Bauman and Lyon (2013) is explored. Through these concepts the review will demonstrate the influences of technology on surveillance and maintenance of a materialisation of power in spatial forms. Furthermore, the review will consider socially produced space, conceptually informed by Lefebvre (1991). Here, organisational space is considered not only through how it is designed, but also through how it is

created socially, and resisted. This will be achieved through an analysis of different meanings (symbolism) arising through the use of artefacts and materials to encourage or subvert meanings. With an understanding of the materialisation of disciplinary and spatial power through built form and produced space, an analysis of organisational space within a corporation will follow; for example, organisational hierarchy, structure, communication and change. This section aims to highlight how such factors are designed, constructed and resisted: thus arguing that organisational space is a representation of its meaning as well as an actant upon it. Therefore, an analysis of the individual or worker and their identity in relation to organisation space will be explored.

Personalisation is important in understanding the reasons why organisational spatial power is exerted, created and resisted by the worker (Elsbach & Pratt, 2007; Goins et al., 2010). Differences between space and creating a sense of place are compared and contrasted, and arguments are explored that explain the impact of trends such as home or tele-working, and how individual identities are developed through understanding of these 'new' forms of organisational spaces. An integration of Actor –Network Theory (ANT) and the concept of Performativity is introduced as an alternative approach to appreciating organisational space.

## 2.2. Understanding Organisational Space

In order to understand organisational space as a concept and field of study, it is important to establish a definition of 'space' and 'organisational space'.  In order to narrow the multiple meanings of 'space' utilised in this research project. This section will examine some of the definitions the literature currently offers over a range of disciplines. The term is used with many variations throughout the literature: for instance, it can be used to refer to office planning or landscaping, or working spaces in general. While organisational space is a relatively neglected field, the discrepancies in its use among disciplines make the term complex to define. Therefore in the following paragraphs the researcher aims to establish a detailed definition of organisational space.

It is common among the socio-spatial school of thought or organisational space theorists to highlight the nature of what we might call 'spatial power'. As

Foucault (1978, p. 93) argues, "Power is everywhere… because it comes from everywhere", Tannenbaum (1968, p. 3), an organisational theorist, also advocates that "Organization implies control". This is also true for organisational space. 'Spatial power' is a term which can be used to define the material outcome or representation of power. Section 2.3 will consider this further. In advance of this, it is important to locate power and/or control in the field of organisational space, through the literature of organisational theory. Notably, Issac (1987) divided 'power' into two forms: 'power over' and 'power to'. The former implies 'power over' or influence over something and someone and the latter is 'power to' an individual over his or herself. Dovey (2008) argues that, generally, in day to day life, people tend to notice 'power over' while 'power to' is taken for granted. These two distinctions of power inform the structure of this review. First the review will consider the power of organisational space through managed symbolism – 'power over', and then it will present arguments about power in the form of agency through identity – 'power to'. These discussions demonstrate how organisational space is a materialisation of power and an 'actant'. This requires understanding organisational space through symbolism.

Symbolism is a key concept often used to describe meaning in organisational space. As defined by Cohen (1974, p. 23), "Symbols are objects, acts, relationships or linguistic formations that stand ambiguously for a multiplicity of meanings" and hence meaning in organisational space. Additionally, Pondy et al. (1983, pp. 4 - 5), discuss the idea that a symbol is an indication which represents something greater than itself, embodying and denoting a wider pattern of meaning: "Symbols are created and recreated whenever human beings vest elements of their world with a pattern of meaning and significance which extends beyond its intrinsic content (Jones, 1996). Any object, action, event, utterance, concept or image offers itself as raw material for symbol creation, at any place, and at any time". Therefore, it can be reasoned that the terms 'space' and 'organisational space' can be utilised in a variety of ways, from the abstract and highly theoretical through to the experimentally concrete and symbolic (Dale & Burrell, 2008). Power and symbolism are two intertwined fundamental themes in the field of organisational space because symbols and their meaning can either be an intentional (ie planned, often by management) exercise of power and control or unintentional (ie resisted, most notably by

employees) consequences (Davis, 1984). However, examining power and symbolism in the field helps to form a better understanding of their effect and impact on and within organisational space. Explorations of the relationship between power, symbolism and built form can be found in, but are not limited to, Kim Dovey's (2008) forms of spatial power and Henri Lefebvre's (1991) *Social Production of Space.* Dovey (2008, p. 1) believes that "built form evokes places and spaces which are encoded and designed in accord with certain interests – primarily the pursuit of amenity, profit, status and political power. Therefore, suggesting that spatial power is inherent in everyday practices". This is similar to Lefebvre's (1991) focus on the importance of 'le quotidien' – the everyday, in the context of space: he believed, as well as lived, the concept that space is socially produced (Shields, 1999). Therefore, through the lens of power and symbolism the subject of organisational space in the built and conceptual form of an organisation seem observable. Organisational phenomena like physical structure, power and identity (in spatial terms) and their relationship have become more prominent; and therefore more distinct and acknowledgeable in organisational theory (Hatch & Cunliffe, 2006).

In understanding organisational space, the term can be summarised as a building which houses a corporation under its roof and between its floors and walls (if applicable) in which people work and perform their organisational duties (Elsbach & Pratt, 2007). Additionally, organisational space is not limited to material objects but also immaterial ones. While in the past organisational space often referred to the interior space of an organisation, consideration of recent literature demonstrates that organisational space is not limited to the internal, but also includes the external space of an organisational building. Examples are social spaces immediately available outside the building and the space created by home, flexible or mobile workers, which can also be relevant to the field of organisational space (Venezia et al., 2008). Through an analysis of power and identity, it will be argued that the field of organisational space can be expanded to include public communal places, which are becoming increasingly incorporated into contemporary working practices.

## 2.3.    Framing Power in Built Form

The built world we occupy communicates narratives and tales about ourselves and the societies in which we live, while simultaneously influencing our actions (Dale & Burrell, 2008). It is argued that even architects would admit that work buildings, whether it be factories, mills or offices, are essentially structures of and for control (Markus, 1993). The framing of spaces through the construction of boundaries, organised connections and shape tends to be taken for granted and its examination is limited in the wider literature of organisational theory (Dale & Burrell, 2008). To counter this, the following section will analyse organisational space through the understanding of power in the built form. Here, built form implies buildings, immediate working environments and artefacts (interior design). Other artefacts such as location, spatial design and furnishings will also be analysed; these are often referred to as the physical elements of organisations which have a tangible, yet non-verbal aspect (Van Marrewijk, 2009). Each of these will be examined in the following subsections. Subsequently, verbal artefacts, such as image and textual form/descriptions of space, will be examined from a spatial power perspective, arguing towards organisational space as an 'actant'. Furthermore, while hitherto the relationship between organisational space and power has been focused on the individual and their physical body, this analysis delves into further evaluation of the effect on the mind. This will be done through the literature in the field of ecological psychology (Gibson, 1979). This section on framing power in the built form through body and mind combines several disciplines, and as a result, an inter-disciplinary understanding of organisational space is constructed.

## 2.3.1. The built form: Geographic Location

In the mid-nineteenth century, there was a shift from evaluating organisational spaces as a distance (eg: proximity, geographic location) to a focus on organisational space as the materialisation of power relations (how organisational space can be used to control, manage or survey people and their behaviours) (Taylor & Spicer, 2007). This move was regularly informed by Marxian analytical categories; Marx's work observes the transformations by industrial capitalism of regions, cities and neighbourhoods. Before examining these power relations at an organisational level, geographic location will first be analysed to understand the macro-materialisation of power relations. In the

case of multinational and franchise organisations, an important physical spatial element is geography (Hatch, 2007). International and global organisations have branches in numerous locations that are known as the businesses' spatial distribution. This can define fundamental working practices, such as the level of communication between members or allocation of resources. A location's geographic features, such as 'climate, terrain and natural resources', affects these practices (Hatch, 2007): for example, heavy materials (eg: coal and iron ore) can be costly and complicated to transport. Subsequently, once these materials exit a factory in their finished product form, such as steel, they weigh far less than when in their raw form, which implies that firms can economise on transportation costs by locating in close proximity to the source of these inputs. Alternatively, in high technology firms, where the inputs weigh relatively little in comparison with their outputs, the local availability of difficult to transport goods can be the workforce. Zucker et al. (1998) argue that biotech firms depend critically on star scientists to improve their odds of success, and since these scientists almost invariably maintain academic engagements while working with these young ventures, the geographic distribution of leading universities limits where these scholars reside. Therefore, suggesting that an organisation's fundamental resource is its 'intellectual capital' or 'human resources' means that this becomes a factor in attracting organisations to certain locations (Taylor & Spicer, 2007). Bang and Olufsen (B&O) is a Danish audio product manufacturer with its headquarters located in Struer, Denmark, and serves as a good example of this. B&O hires designers rather than employing them within the company and its location near universities allows the organisation to maintain this practice. As a result of this, B&O is able to utilize a variety of 'star scientists' and technologies to preserve their reputation for distinctively designed audio equipment. Additionally, their location encourages collaborations with the universities on local and international projects. To summarise, for any type of input that is difficult to haul and is only available at a limited number of locations, it may be advantageous for organisations to locate in close proximity to the source input; thereby encouraging agglomeration. A commonly referred to example is Silicon Valley, a high technology cluster in the United States of America, abundantly full of the 'critical human resources' of the industry (Almeida & Kogut, 1999). While Schmitz (1992) defined clusters as a group of producers spatially located in near proximity to each other, Porter's (1990)

definition, is more specific and similar to Lundvall's (1992) definition of National Systems of Innovation (NSIs): namely that these producers are inter-connected organisations and institutions in a particular field, concentrated in geographic locations. To some extent, this cluster of organisations become or build their own town or city, dominating the land with their buildings and factories while also setting the scene for a certain type of architecture or spatial design and planning. While the agglomeration of high tech firms is relatively new, this is an old concept which dates back to cities and towns which organised where they were located according to natural resources (eg: water). In a similar way, organisations choose to locate geographically in order to survive.

The main 'macro-organisational space' advantages of agglomerating organisations will be described further. 'Agglomeration economies' and 'collective efficiencies', the latter of which are defined as the external benefits or competitive advantages which an organisation gains, share different production factors benefiting from close geographical proximity (Beardsell & Henderson, 1999; Fan & Scott, 2003). A notion which according to Foucault (1995), and supported by Dreyfus and Rabinow (1983), can be seen as 'sovereign power' through spatial organisation: for example, public infrastructures, or more specifically, highways and roads, can be built, which can support several organisations that have the power to dominate where the boundaries are set. This argument rings true with Bauman and Lyon (2013), who suggest that this form of power or surveillance not only monitors those within its view, but also controls those who are and are not allowed within this boundary. These collective externalities act both endogenously and exogenously to the cluster (Caniels & Romijn, 2003). However, this type of spatial organisation is not always positive , studies of organisational geographic co-location have identified some underlying shortcomings, particularly related to deeper levels of power manifesting in spatial configurations of distance and proximity (Harvey, 1973).

'New Urbanism' is a new urban design movement which arose from agglomerating organisations. City images, cultures and practices have become every bit as important to the accumulation of social and political power by hegemonic groups as more traditional material concerns, owing to the careful orchestration of city architecture designed to foster community pride and stimulate local support (Hall & Hubbard, 1996, p.162). New urbanism is defined

as a restructuring of public policy and development practices to support diverse populations of neighbourhoods where architecture and landscape design celebrate local history, climate, ecology, and building practice (Leccese & McCormick, 2000). An example of a geographic location with a deep rooted power relation can be found in a study conducted by Veninga (2004) who analyses how 'New Urbanism' is spatially materialised:

> "Spatial strategies upon which New Urbanism relies in order to guide social behaviour—homes placed close to the streets and each other in order to create a form of community surveillance, front porches designed to encourage residents to engage with one another and passers-by" (p.477).

In this way, residential streets in agglomerated areas are said to have been planned and built for subtle surveillance on employees by their organisation, replicating the control sought within the organisational walls of a workplace during what is hypothetically employee free time (Burrell, 1997). In the case of Silicon Valley, English-Lueck (2000, p. 763) explains that "various domains of life are not simply controlled by the company, they are integrated into lives that are dominated by work". Consequently, it is argued that Silicon Valley can be viewed as a twenty-first century version of the original nineteenth century industrial towns, where organisational norms transcend into non-work spaces creating a socio-cultural order for the region, which is defined by work organisations (English-Lueck, 2000). Furthermore, it is maintained that there has been a shift from 'sovereign' to 'disciplinary' spatial power an idea that will be explored further in the next section.

### 2.3.2. Spatial Power

The materialisation or representation of power in spatial terms may be termed as 'spatial power'. Spatial power, as this section will examine, is an umbrella term used to encompass concepts such as 'spatial surveillance' or 'spatial domination' (Dovey, 2008). This section will explore the nature of spatial power, beginning with a reflection of Dovey's (2008) three notions of 'coercive' power in the built form. Following this, it will be argued that spatial power is re-enforced, to some extent, by disciplnary power as conceptualised by Foucault (1995), and 'liquid surveillance' as theorised by Bauman and Lyon (2013).

It is important to note here that while Dovey (2008) describes his three forms of power as 'coercive', this is not neccesarily negative, rather it denotes a form of control which is enforced rather than chosen. This is an important point in this review as well, since although it is suggested that control, power and surveillance are integral to the study and research of organisational space, this does not always imply a negative connotation. The first of Dovey's (2008) forms of power is: 'Domination' or 'intimidation' and is described as the most overt signifier of his three forms of covert power: for example, Dovey (2008) argues that public parades or public monuments are spatial representations of 'dominating' and 'power over'. The Washington Monument, which to this day is the world's tallest stone structure, serves as a good example of spatial power imposed on a certain location to intimidate people. The monument was built to honour George Washington, the first American President, and this materialisation of his power can be seen as a reminder to the people of a historic time when state decisions led to positive outcomes for the people. In this way, according to Dovey's (2008) theorisation, people are coerced into trusting or obeying government decisions. Therefore, if monuments are symbols of intimidating power for historical events or persons, organisational buildings and space can be seen as a company's cementing of intimidating power. Google Inc, an American multi-national corporation, can be used as an example of this. Googleplex (Google headquarters), Google campus (London) and other Google buildings have recently gained attention from researchers and the media regarding their landmark buildings. From building size to innovative architecture and design, it can be argued that Google Inc, is attempting to intimidate either the competition or its workforce. While larger and expanding buildings suggest a profitable corporation to rivals (domination), it can persuade the current, as well as the potential workforce, that the decisions the company make have proven to be beneficial in the past and it should trust any future decisions the firm makes (intimidation). This is not limited to just monuments or individual buildings, but also the general architecture of a town or city is believed to dominate community spirit; inspiring patriotism, belief in leadership and faith in the future.

The notions of 'Manipulation' and 'seduction' although not so overt, yet no less coercive, aid the achievement of ordered behaviour that is embedded in

everyday organisational life. 'Manipulation' is described by Dovey (2008) as a concealed form of coercive power whereby an individual is kept ignorant. This can act as a way of minimising resistance from people as the exercise of power is hidden (Wrong, 1995). In the example of clusters today, people re-locating their work as well as their homes to Silicon Valley find that the shorter distance travelled to work may result in a shorter commute and perhaps more time to sleep-in in the mornings: the underlying notion of power and surveillance may be implicit in the disadvantages of living so close to work: for example, the shorter commute could also mean individuals are called into the office on their days off or they might encounter their supervisors in town, which may mean a certain type of behaviour is required when around town during 'free time'. It is this behaviour which organisations may seek to control to ensure that the organisational culture at work flows into a matching culture at home.

The third notion 'Seduction' is a complex form of coercive power which drives Steven Lukes (2005) to pose the question:

> "Is it not the supreme and most insidious exercise of power to prevent people, to whatever degree, from having grievances by shaping their perceptions, cognitions, and preferences in such a way that they accept their role in the existing order of things, either because they can see or imagine no alternative to it, or because they see it as natural and unchangeable, or because they value it as divinely ordained and beneficial?" (p. 28).

Certainly, 'Seduction' is a form of coercive power which manipulates an individual's interests and desires; a rather comprehensive practice of power (Dovey, 2008), yet not necessarily sinister. In line with the example of Silicon Valley, employees may believe it is beneficial to be able to interact with their supervisors or senior members because it is in their interest to share information and knowledge they may otherwise not have had the chance to obtain in their work environment. As Hardt and Negri (1994, pp. 9 - 10) explain "the apparent decline of the factory as site of production does not mean a decline of the regime and discipline of factory production, but means that it is no longer limited to a particular site in society. It has insinuated itself throughout all social forms of production". In this way, they may choose to behave or conform to the behaviour which is 'seduced' by their work organisation.

Having established the macro elements of organisational geography and its power implications for organisations and their employees, the following section considers the micro possibilities of 'disciplinary power'. This will include the geography and location of departments (spatial design) within an organisation and its premises. Spatial design is another non-verbal artefact concerned with the internal layout of office desks, walls and furnishings. Spatial design can be considered as the essence of organisational space; and thus this section contains the most commonly researched element of organisational space (Taylor & Spicer, 2007). Its symbolic relation to power in the literature is frequently explained through Jeremy Bentham's (1971) 'Panopticon' design of an institutional building, depicted in the figure below:

**<u>Figure 2.1: The Panopticon</u>**
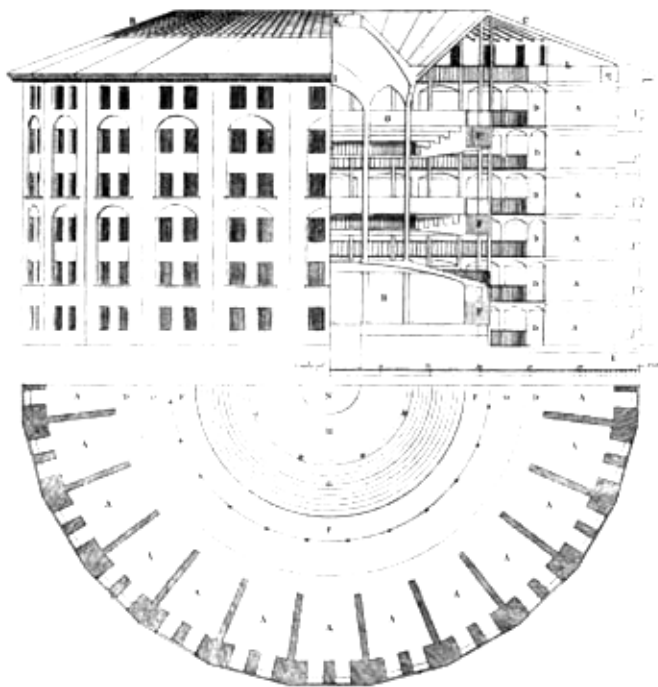


The elevation, section and plan of Jeremy Bentham's Panopticon *prison*, executed by Architect Willey Reveley in 1791.

<u>Source:</u> Foucault (1995), between pages 169 - 171

Dreyfus and Rabinow (1983, pp. 188 - 189) explained the architectural functioning of the panopticon prison as consisting of "a large courtyard with a tower in the centre and a set of buildings, divided into levels and cells, on the periphery. In each cell, there are two windows: one brings in light and the other faces the tower, where large observatory windows allow for the surveillance of the cells". Furthermore, Foucault (1995) uses Bentham's (1971) conceptual blueprint of the panopticon to illustrate how disciplinary power is organised in spatial design. It is argued that Foucault is one of the few writers on power who distinguishes power as not just a negative, coercive or repressive concept that

forces individuals to act against their wishes, but believes that it can also be a necessary, productive and positive force in society (Gaventa, 2003). Instead of considering power as coercive, dominating, and intimidating, Foucault (1995, 194) suggests thinking of power as producing: "it produces reality; it produces domains of objects and rituals of truth. The individual and the knowledge that may be gained of him belong to this production". Thus In contrast to previous epochs of 'sovereign power', which is the exercise of power that was traditionally held by the state, attention has shifted to 'disciplinary power'. This type of power implies that control or force is observable in disciplining, ranking and conforming socially. Foucault (1995) was concerned with how disciplinary power was observable in administrative systems such as mental hospitals, schools, and as mentioned earlier, prisons, where surveillance and assessment techniques have replaced force and violence as people conform or discipline themselves to comply with the norm.

Considering Bentham's (1971) panopticon design, Foucault's work can be further developed to understand spatial power. Foucault (1995, p.205) explains that the panopticon should be considered as a "generalizable model of functioning; a way of defining power relations in terms of the everyday life of men... it is the diagram of a mechanism of power reduced to its ideal form; its functioning, abstracted from any obstacle, resistance or friction, must be represented as a pure architectural and optical system". Therefore, the core of the panopticon is not power, but a clear paradigm of how power operates (Dreyfus & Rabinow, 1983). Foucault (1995) backed Bentham's (1971) belief that the panopticon's main benefit was that it provided a maximum of efficient organisation. Theoretically, an inmate cannot see whether there is a guard in the tower or not; thus the inmate will behave as if surveillance were constant, inducing a sense of self-control on the inmate, and causing them to act as their own guardian (Dreyfus & Rabinow, 1983). Bentham's panopticon was never built, but the Edinburgh Bridewell jail was constructed following its principles from a design by the Scottish architect Robert Adam. This version of the prison was flawed by the additional design of a ring of work rooms behind the ring of cells, which rendered the cells dark at night (Boyne, 2010). This is perhaps one of the reasons why, in practice, the panopticon prison did not result in less violence or misbehaviour amongst inmates. Mirzoeff (2002, p. 241) believes this

is due to visibility: "the prisoner could neither be perfectly visible nor be constantly aware of disciplinary surveillance". Despite this, the panopticon's theoretical concept can be applied to today's organisations' interior and exterior spatial designs. Veninga's (2004) study of 'New Urbanism' can be used to presume the panopticon theoretical concept of self-control due to constant surveillance. This feeling of surveillance is a symbol of the manipulative and seductive power which organisations imbue in their employees.

There are numerous concepts which have since been developed from Bentham's original panopticon. Caluya (2010, p. 621) suggests that "So widespread is the literature on the panopticon that the very mention of the term in conferences immediately leads scholars to roll their eyes in boredom. No more so than in surveillance studies, which seems so haunted by its omnipresence". The panopticon has become the leading academic paradigm or metaphor for analysing surveillance and therefore has become oppressive in surveillance literature (Haggerty, 2006). This explosion of 'opticons', catalogues the limitations of Bentham's and Foucault's panopticon through various extensions, augmentations and critiques that seek to revive it in the context of new technological developments. To name a few: 'superpanopticon', 'electronic panopticon', 'post-panopticon', 'ban-opticon', 'pedagopticon', 'fractal panopticon', 'synopticon' and 'neo-panopticon' (Bauman & Lyon, 2013; Haggerty, 2006). It is important to acknowledge the existence of these new developments in this review, but the fundamental focus is on the core ideas of the concept.

Surveillance has become less attached to spatial observation (ie the Panopticon) and, as such, has become post-panoptic, contrasting "the fixity and spatial orientation of solid modern surveillance with the mobile, pulsating signals of today's flowing forms" as explained by Bauman and Lyon (2013). With the development of technology, it is becoming increasingly easier for surveillance to take place. In general, more and more people can be 'watched' or 'tracked' through novel technologies; causing the accumulation of data to grow to extraordinary levels and resulting in surveillance slipping into a liquid state (Bauman & Lyon, 2013). This new form of technological liquid surveillance can be seen as a softer form of disciplinary power. As explained by Foucault (1995), individuals were capable of taking an active role in disciplining themselves,

perhaps something that social media can demonstrate. Through Facebook, Twitter and other public social sites, a new trend of a confessional society exists, where publicity is both a virtue and an obligation (Bauman & Lyon, 2013). While Bauman agrees with Foucault on the notion of self-surveying and disciplinary power, he believes that this rings true at not only individual but also group levels of self-discipline. Possibly the most common shortcoming of surveillance studies which consider social media is the bias towards describing only how organisations survey and control the masses, with little attention to how the masses, digitally connected, increasingly survey each other (Jurgenson, 2013). It has now become a world of surveillant vision, where the panoptic gaze objectifies the individual (Bauman & Lyon, 2013). Koskela (2002, p. 292) cites an important quote from Foucault (1980), which may explain this 'gaze' better:

> There is no need for arms, physical violence, material constraints. Just a gaze. An inspecting gaze, a gaze which each individual under its weight will end by interiorising to the point that he is his own overseer, each individual thus exercising this surveillance over, and against, himself. A superb formula: power exercised continuously and for what turns out to be a minimal cost (Foucault, 1980: 155).

The notion of video or camera surveillance is typically the same as that detailed above: it is a technological solution designed to solve the problems of surveillance in urban space. People under surveillance are, similar to the Panoptiocon, to be seen but to never know when or by whom: thus under control but without physical intervention (Koskela, 2002). David Lyon (1994) concurs with Koskela, while also acknowledging that cities have now become large panopticons with the extension of panoptic technology; thereby electronically extending power. Visual surveillance is able to provide a literal superficial image of an individual and their behaviour (Jones, 2000).

> "He who is subjected to a field of visibility, and who knows it, assumes responsibility for the constraints of power; he makes them play spontaneously upon himself; he inscribes in himself the power relation in which he simultaneously plays both roles; he becomes the principle of his own subjection deduces Foucault (1995), p.202-203.

From this quotation, it can be understood that what is important to take from the Panopticon concept is this notion of self-control, self-survey, self-discipline or, as Bauman and Lyon (2013, p. 59) term it, Do-It-Yourself [DIY] Surveillance through what can be seen and being seen: visibility as well as visuality. 'Visuality', although a key word in the field of visual culture, has its connection to organisational space. Before looking into this relationship further, the term 'visuality' will be defined and explained further as it is a relatively novel concept. This field (visual culture) of critical practice acquired one of its signature impulses from Hal Foster's (1988) edited collection 'Vision and Visuality'. To explain the rise of the term visuality from the term vision, perhaps considering the differences between the terms 'sex' and 'sexuality', the vision can be considered as that which is natural, while visuality that which is social (Nelson, 2000). Therefore the distinction between vision and visuality is that the former is about the mechanical process of receiving visible light waves through the retina whereas 'visuality' is the social/ psychological process of socially constructing the meaning of perceived visual data (Natharius, 2004). With the developments of technology, the emergent disciplinary society now has both the terminology and the equipment to dominate and manipulate individuals through visual surveillance and visuality. It is argued that 'visuality' is much to do with picturing rather than vision (Mirzoeff, 2006). The concept of visuality can be applied to those who are being studied as well as those who do the studying. For example, while organisations provide either open-plan workspaces or transparent offices, in order to make employees visible, this visibility becomes visuality as employees are able to see their colleagues and supervisors. The visuality employees experience can either obey or alter their 'image' of themselves, something which can be seen as a spatial 'seduced' power over which is immaterial through the visual. Additionally, given the conceptualisations of the 'panoptic gaze' and the 'cam era' (Koskela, 2002), it seems the forms of manipulation and seduction model, can be viewed as forms of spatial power over.

Until this point, the review has focused primarily on what may be called 'intentional spaces', the spaces which are intentionally planned and design to dominate, manipulate and seduce individuals to conform to the organisation. In summary, the spatial power in geographic location and spatial design has been

examined. Furthermore, artefacts such as furnishings are one of the main components[6] which affect spatial design which are considered as the 'intentional' chosen artefacts to fill those spaces. Displays of colour (images, pictures, art), use of lighting, types of material used for desks or chairs, are a few examples of this. The choice of these furnishings, typically lies with management who decide on the rules, the artefacts and their placement around the space, thereby proving the intended space which intentional artefacts. As the economy shifts and changes, so does technology and organisational space must be adapted: for example, with this shift, some organisations are turning to hot-desking and mobile working conditions; advances in technology can support this type of working practice as less space is required for staff on site premises. However, this technology is becoming commercialised and prices for these services are dropping, which can result in organisations buying more equipment, which in turn needs more space (Anjum et al., 2005). This process of decision making regarding layout, type of equipment and furnishings is provided by the field of 'Ergonomics' (depicted in Figure 2.2), which is not often mentioned in the literature of organisational space. "An important development over the past 50 years has been the formalization and development of organizational design and management in human factors and ergonomics science and practice" explains (Kleiner, 2008, p.461). Macro-ergonomics are concerned with a holistic view of the work process of an employee, commonly working in an environment such as a factory. Methods using ergonomics are mostly implemented in organisational space research to analyse sound and noise levels (see: Banbury & Berry, 2005). Micro-ergonomics, depicted in the figure below, are most commonly used to analyse the best possible angles, heights and materials. These can be used to either protect or create comfort for the employee within an organisation on a daily basis (Ousnamer, 2002), since at present, there are regulations which an organisation has to follow to create a comfortable environment for their employees, as Neufert et al. (2012) demonstrate in their book on the minimum requirements for an ergonomically considerate working environment. However, Oetelaar (2000) suggests that

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[6] A second main component are the users and those who occupy the workspace (Taylor and Spicer, 2007)

studying ergonomics on an individual employee basis provides a reflection of how an individual employee goes about their activities in their particular spaces.

**Figure 2.2: Examples of ergonomic considerations**
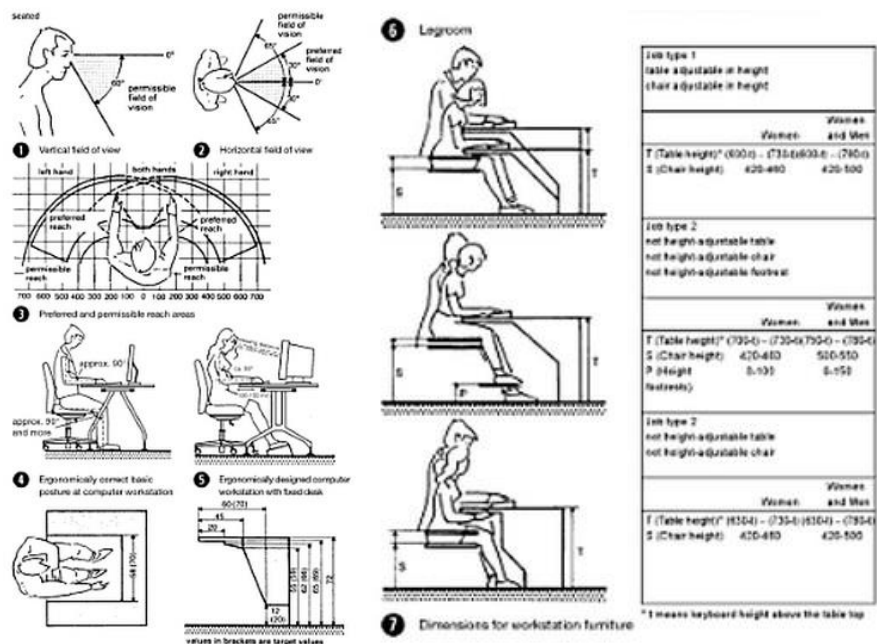


Source: (Neufert et al., 2012, p.236)

Having discussed the effects of power on organisational space and the implications for the individual and their body, the review will now delve into the field of ecological psychology, which provides an effective analysis of the impact on the mind. The signs and symbols which individuals traverse through in their everyday organisational space bring about various perceptions, this requires an alternative conceptualisation of space, one which is better understood through the field of 'Ecological Psychology' which will be introduced next.

### 2.3.3. Ecological Psychology

While the focus has in so far been on intentionally planned spaces, the following sub-sections will begin the discussion of how these spaces can be shaped, reshaped and even resisted by those occupying and using the spaces. The field of Ecological Psychology provides an alternative understanding to conceptualising spatial power in order to allow forms of 'power to' to be possible.

In order to understand the contributions of Ecological Psychology to organisational space and particularly spatial power, this section begins with an introduction to the field. There are numerous journals dedicated to the study of environment and behaviour[7] which can be linked to the subject of organisational space. Research conducted in this field ranges from the interrelationships between animals and/or humans and their physical surroundings, to the psychological and behavioural characteristics of people in their work environments. Researchers in these fields, such as Franz and Wiener (2008, p. 574) explain that "human spatial behaviour and experience are influenced by the shape and configuration of environments", while Peatross (2001, p. 534) adds "movement and awareness are aspects of space use which are subject to the imposition of rules as well as the constraints of space". This signifies that it is not only the physical environment of an organisation which shapes one's behaviour, but also the navigation and movement patterns the environment or artefacts offer.

Having discussed in sections 2.3.1 and 2.3.2 on the framing of 'power over' in the built form of geographical location, spatial design and furnishings of both exterior and interior organisational spaces, the focus will now shift to the individual's power 'to' rather than the 'power over' the individual. This section will begin with a brief summary of the literature on environment and human relations before looking at ecological psychology (individual behaviours as they can be affected by the environment) in the context of organisational space. Throughout this section, it will be argued that ecological psychology can inform the field of organisational identity in relation to organisational space.

The focus on environmental psychology research started with Kurt Lewin's psychological analysis of the environment as perceived by the individual, and James Gibson's micro-environment stimuli concept in analysing perceived and operative psychology (Stokols, 1995). Lewin (1936) sets out to define one's "psychological life space" (p.18) explaining by way of exemplifying how an individual's surrounding objects; for example the type of room within a house and the country it is situated in, determine the individual's psychological state.

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[7] For example: for example, Environment and Behaviour, Environment and Planning, and Environmental Psychology

Similarly it can be argued that the organisational space one spends most of their working time can also impact psychological state. While Lewin (1936) introduced the analysis of space from a psychological perspective, Gibson (1979) presented micro-environmental factors of this space on the psychology of the individual. Gibson created his theory while he was training World War II airplane pilots to visually locate themselves from visible objects on the ground and researched why some landed planes better than others (Gibson, 2000). Gibson's work sparked later interests towards Barker's 1968 behaviour setting theory and other research, such as Edward T. Hall and Robert Sommer's social psychology approaches, which took a qualitative perspective in their analytical studies of space. Furthermore, Hall (1966) developed the concept of 'proxemics', which argued that an individual's perception of space is ultimately defined by their cultural background, Sommer (1969) looked at how individual 'personal spaces' when reduced caused a change in behaviour. Concepts[8] such as these sparked an interest in combining the applied psychologies to the social sciences in order to better understand how space is used through both nature and culture.

Gibson's ecological approach to perception will be considered next in more detail as it contributes a large part to the understanding of unintended symbolic meaning in organisational space.

**Affordances: Ecological Approach to Perception**

The 'ecological approach to perception' as coined by Gibson (1979) brought to light the concept of 'affordance/s'. This concept provides insight into the ecological perspective on how humans perceive objects in their environments. Emerging during the 1970s and 1980s, ecological psychology focuses on the relationships of living organisms with their environments. This body of work has evolved into many disciplinary subject areas: for instance, Gibson's work has been adopted for research on office design and employee behaviour. In contrast to approaches to perception taken in the majority of studies, where the

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[8] During this period, ecological psychology became a subject of popular interest: for example, Barker's 1968 'behaviour setting theory' and Bronfenbrenner's (1979) ecological theory, originated around the same period (Scott, 2005).

employee and the workspace were studied independently, typically in psychological and physics terms respectively, an ecological approach to perception suggests that the relationship between the employee and the environment is 'synergistic' (Glotzbach & Heft, 1982).

To appreciate the ecological approach to perception and the useful relationship between a living organism and the environment, or the employee and organisational space, it is important to consider Gibson's concept of 'affordance' (Heft, 1980). The concept of 'affordance' is argued as the one of the common fundamental concepts in ecological psychology (Stoffregen, 2000). Gibson (1979) describes an environment's affordances as something which is offered to animals or humans. It is a characteristic in the form of cues, which the environment affords to the animal. Using one of Gibson's (1979, p.102) examples: "a fire affords warmth on a cold night; it also affords being burnt". In spatial terms, it could be a window, which affords light entering through the glass; additionally it can afford an alternative scene of the interior space of a workspace. These environmental affordances limit the way in which animals or humans behave and are measured according to each individual animal or human and their ecological niche (Heft, 1980). By ecological niche, Heft (1980) was referring to an animal's local habitat. In this context, it would be the employee and their workspace; this could be an organisational building, a coffee shop or the home. Therefore, certain behaviours have a unit of affordance which are associated with them from their environment. The concept of affordance provides an alternate way of viewing the design of environments, emphasizing the complementarity of the relationship between environments and their users; for example, between the form of buildings and the resulting behaviour of their occupants as the building 'functions' in practice.

Affordances are crucial to the understanding of ecological psychology and played a key role in theories which began to explain animal-environment relations (Letiche & Lissack, 2009). Although initially the concept of affordance faced a considerable amount of criticism (see: Heil, 1979; Lombardo, 1987), it did help extend the notion of visual perception into other disciplines (Cutting, 1982) and research subjects, including employee perception of organisational space (see: Pepper, 2008). While the concept of affordance is more typically found, analysed or researched in the field of ecological psychology, its notion is

present in the form of: to afford, implying this relationship between an object or action and an individual. Affordances symbolise to the notion that physical objects, such as buildings, doors and windows have capabilities within an organisation that do not require an explanation in their use or application. For example, printers afford the opportunity to print, scan, etc., chairs, to sit, however in everyday practice, relaxing on a printer or scanning a chair is not afforded, therefore, objects as well as spaces have a material representation that affects their available uses (Pepper, 2008).

The most prominent criticism faced by Gibson's concepts on perception and affordance was that of his ontological and epistemological approach. Heil (1979, p.265) argued that "the incompleteness ascribed by critics to Gibson's theory cannot be eliminated simply by embracing Gibson's version of 'direct realism', and that the incompleteness is both epistemological and empirical". According to Heil (1979) and Neisser (1976), the act of perceiving the environment is not direct because information has to be processed before it can be understood and for action to occur. For example, Heil (1979) poses the question: How can a human perceive an object in its environment without processing its understanding of that object first? The answer for Heil is that it cannot, and therefore indirect perception or realism must take place instead. However, it is argued that Heil (1979) misunderstood the concept of perception and affordance as conceptualised by Gibson (Heft, 1980). Furthermore, it is argued that when thinking about perception from a 'molar' (macro) perspective, one can see that "the conceptual relations among objects and events with which the animal [or human] interacts are not artefacts of the animal's perceptual structures but coalesce with them" explains Heft (1980, p.191). Therefore, direct perception or realism is applicable as the information processing does not occur; it becomes instant. The understanding that Heil is looking for is simply a part of the animal, rather than being a process it must undertake to understand the affordance of objects or spaces, in context similar to the example of the printer and the chair given above.

In understanding affordances, one may question the difference between what an object/artefact can afford; in this case, in the office environment, and what it symbolises. Following a similar line of argument as that above between Heil (1970) and Heft (1980), Krippendorff (1989) helps to make the distinction while

also linking affordances with symbolic meanings. Krippendorff (1989, p. 19) explains that "affordances...denote all possible behaviours (form) that confirm what a user expects the object to do (meaning)".Developing Gibson's concept of affordance to include behavioural analysis, Krippendorff (1989), suggests that an individual's cognitive model could be used first; for example, ones motivations behind what they expect the object to afford. Here, he (1989, p.22) divides motivation into extrinsic and intrinsic motivation:

> "Perhaps the crucial difference between extrinsic and intrinsic motivation is that they refer to two different cognitive paradigms, the instrumental and the symbolic. In the instrumental mode of thinking everything is directed toward and justified in terms of a goal – a problem to be solved, an obstacle to be removed...whereby the artefacts affording such purposes have no value in themselves... In the symbolic mode of thinking, everything seems directed to achieve balance: a sense of integrity or wholeness of divergent parts, a sense of self-realization in interaction with others, a sense of oneness with the environment"

Therefore, in spatial design the extrinsic motivation can be seen as the spatial power materialised in intentional spaces, whereas the symbolic mode of thinking can be viewed as the meaning spatial design implies, such as harmony, interaction or self-realisation (Krippendorff, 1989).

Heil's argument and Kirppendorff's suggestion are centred round the debate of structure versus agency. This debate raises essential questions about the nature of social reality, the mode in which it is conceptualised and the theoretical means most appropriate in explaining the relationship between human activity and its social context (Reed, 1997). It is a long-standing debate and one which can be considered as a hindrance towards the holistic understanding of the field of organisational space as most theorisations of organisational space seem to have their own ways of bypassing the debate (Latour, 1997). The concept of affordance is one and Actor-Network Theory is another, which will be discussed further in section 2.7 of this review.

In summary, the theory of affordances informs the theory of organisational space as it can be considered from an individual's behavioural perspective. Through affordances in objects and symbols to behaviour, it provides an alternative form of thinking about organisational space and perhaps the

construction of organisational identities. However, before progressing to look at this link in more depth, Professor Harry Heft and his take on the concept of affordances through the categorisation of the concept into a model which better suits the human body will be looked at further for a deeper understanding of the employee in the context of their working environment.

**<u>Body Scaling Affordances</u>**

Many authors explain how ecological psychology, affordances and behaviour setting theory can create confusion among psychologists because of the "paradoxical position of people in behaviour settings" (Barker et al., 1983; Heft, 2003; Scott, 2005; Stokols, 1995). The fact that a researcher must understand their own perception of their subject's perception puts them in a paradoxical position. Barker et al (1983, p.173) state: "psychology has theories and methods for dealing with people as persons but not with people as components of behaviour settings". The lack of appropriate theoretical tools explains why research is limited in this area. Harry Heft (1989), the first author to cite both Gibson's and Barker's work, writes "environmental features are often experienced with respect to their functional significance: we perceive features in terms of the ways we can interact with them" (p. 2). Using Gibson's (1979) concept of affordances, and Barker's (1968) research in child development, Heft (1989) introduces the notion of "culturally derived meanings of objects (p.17) and "body scaling" (p. 10) affordances. Culturally derived meanings of objects offer a cultural awareness into the concept of affordances: people with dissimilar cultural backgrounds may see things differently (Heft, 1989). People's ethnic history and upbringing will affect what objects afford. Therefore, the theory of affordances should be expanded to include the cultural variable (Heft, 1989). This is where Heft is influenced by behaviour setting theory - a person's - behaviour in an environment is shaped by their cultural setting. Body scaling affordances look at the ways in which different aspects of body shape and scale affect what affordances we perceive (Heft, 1989). This mode of thinking resonates with Lefebvre's (1991) belief that Western philosophy had ignored the body, while stating that space had been under-theorized, with Cartesian logic defining space as an absolute category rather than as a social construct (Friedman & Van Ingen, 2011). An example of a study considering the body is one conducted by Warren (1984) which determined whether stair climbing

capability was perceived as do-able or not-do-able with varying lengths of the human leg. This is a study which can be applied to organisational space to improve the working environment of those with disabilities, or to create a unified spatial environment for those with and without disabilities to be able to manoeuvre around. As a result, no bias or boundaries can exist between employees and choice of space, which as was mentioned previously, can be essential to employee empowerment, which ultimately is an advantage to an organisation. Additionally, Heft presents Merleau-Ponty's concept of 'intentional acts', as Heft (1989, p.11) refers to it, whereby "having a body is...to be intervolved in a definite environment, to identify oneself with certain projects and be continually committed to them" (cited in: Heft, 1989; Merleau-Ponty, 1963, p.82). As a result, it is argued here that body scaling affordances are an extension of micro-ergonomic considerations of not only power 'over' but also power 'to'.

An individual's propensity to perceive affordances in any given environment is dependent upon his or her identity. Identity can act as a useful conceptual lens for investigating those individuals and groups of individuals involved (Millward et al., 2007). Organisational identity has been studied from a variety of different standpoints, disciplines and philosophical perspectives and applied to organisational settings (Kenny et al., 2011). However, only those that are deemed relevant to organisational space and this particular study will be discussed in this review.

It is argued in the general 'identity' literature that the concept is not static but dynamic. Gioia and Thomas (1996) explain that identity, being closely linked to image and the visual, is open to frequent revision and redefinition. In the context of organisational space, Petriglieri and Petriglieri (2010) coined the term 'identity workspaces'. An identity workspace is defined as 'a holding environment for identity work' (Petriglieri, 2011, p. 7). These holding environments 'facilitate the process of consolidating existing identities or crafting new ones.' Furthermore, organisations meet the requirements for identity workspaces when they initially provide theoretical frameworks that allow an individual to 'make sense' of both themselves and the environment around them. Dovey (2008) acknowledges that buildings and places inevitably construct and symbolize socially constructed identities and differences of people, classes, cultures, institutions

and nations. The politics of identity in spatial form arbitrates who individuals are and where they belong. Organisational space factors, such as co-location and proximity, may potentially facilitate or amalgamate attachment, which in return may be used actively to symbolise certain identities (Pratt & Rafaeli, 2001). Additionally, identity workspaces can provide communities which members identify with and that act as sources of belonging, support and challenge. Supporting the above is Petriglieri's (2011) view that leadership or management programmes reach their full potential as identity workspaces when they not only enrich the development of individuals but when they also reinforce a team community: a notion which is backed by Clegg et al. (2007), who explain that identity becomes an inter-subjective reality constituted through agreement and sharing of meaning among organizational members. From this sharing, identities can emerge out of interaction, negotiation and shared processes of sense-making (Weick, 1995). This gives way to thoughts that identities are subject to potential changes over time as they are provisionally negotiated and dynamic (Seidl, 2000). The means through which such interpretations occur will be contextualised within, and influenced by an organization's spatial environment, such that interactions with outsiders, as well as with insiders, contribute to the formation of identities (Gioia et al. 2000, p. 65). Recollecting the previous section of this chapter, images and visual cues are linked to the spatial design of an organisation. Empirical research studies have shown that 'power over' can use images as a metaphorical mirror through which an organisation can develop an identity that is in accordance with a specific industry (Van Marrewijk & Yanow, 2010), and thus a specific organisation.

Interest in collective identity is growing among social movement theorists. The literature on the 'new social movements' focuses on how participants construct their social identities (Crane, 1994). Millward et al. (2007), who researched employees in the finance industry, tested the propositions that group work team identity is more prominent than individual organisational identity when desks are assigned, whereas individual organisational identity is more salient when they are not. Thus using Dovey's (2008) terminology, this signifies that group identities within the organisation develop as a result of 'power over' their space rather than 'power to', whereas individual identities flourish when they have the

'power to' personalise or choose their spaces, a concept mentioned earlier in the section on personalisation.

A tentative summary to this section would be that in an attempt to introduce the individual irrespective of the organisation is challenging. As Dovey (2008) maintains, 'power over', seems to have a certain primacy in comparison to 'power to' on individuals. The emergent concept of power is powerfully embedded in the link between ecological psychology and organisational space. In summary, it is clear that organisational identity is generally impacted by spatial forms in an organisation: however, the literature findings are limited in empirical research when considering to what extent the creation of particular organisational spaces result in certain types of identities becoming prominent. Perhaps turning to the relatively new concept of organisational space may explain how organisational spaces are productions of space or producers of space.

## 2.4. The Social Production of Space

It has been argued in section 2.3, that spatial power 'over' dominates how organisational spaces are planned, designed and implemented. This lead to a particular focus on 'intentional' spaces, the following section will examine the limitations to these spaces through re-considering power in the built form, to power in the social space.

The Figure below depicts that power, the social and organisational space are inter-related concepts.

**Figure 2.3: Triad of Concepts**
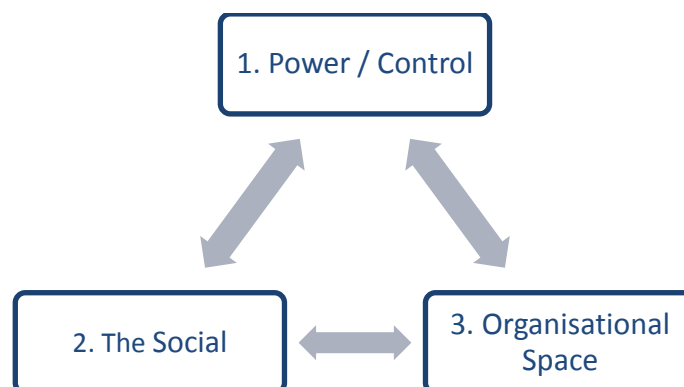


(Source: Author)

To better understand the relationship triad between 1) power/control 2) the social and 3) organisational space, it is important to reference Henri Lefebvre's (1991) work on 'The Production of Space', which distinguishes three aspects of social space which to the organisational spaces of materiality and control (Dale, 2005; Taylor & Spicer, 2007). Lefebre's (1991) three aspects are: representations of space, representational space and spatial practice. As he (1991, p. 46) mentions, these aspects "contribute in different ways to the production of space according to their qualities and attributes, according to the society or mode of production". Lefebvre's work evaluates spaces as moderators of relationships as they integrate action that the conceptualization of space implies the construction of a tool for analysing society (Dobers & Strannegård, 2004). Lefebvre (1991) discussed the methods in which understandings of space are cultural and therefore have a history of change, thus leading to a conceptualisation of space as fundamentally social. Dale (2005, p. 651) emphasises that more attention should be paid to the 'specific and explicit' methods in which space is integrated in social control and how it is symbolised on an everyday basis, especially in architectural space. It is further maintained that that architecture holds a 'privileged position' in regard to the social production of space, through the central role of architects and architecture in constructing meanings and thus social spaces and organisations, in both a material and an interpretive sense (Dale & Burrell, 2008). As a result, it is argued here that organisation space can be seen interpreted as an 'actant'.

Lefebvre's first aspect or 'process' as referred to by Zhang et al. (2008) states that the organisation of social space is: 'representations of space', which he ties to "the relations of production and to the 'order' which those relations impose, and hence to knowledge, to signs and to 'frontal' relations" (1991, p. 33). Lefebvre (1991) equates this with the space which is 'conceived' where planners, designers, engineers and 'managers'[9] recognise "what is lived and what is perceived with what is conceived" (1991, p.38), or what is socially produced with what is understood of what has been designed. Conceived space is the prevailing space in any society (or mode of production) (Lefebvre, 1991). In her case study, Dale (2005) describes this process of social space as the intentionally planned elements of the building through organisational aesthetic

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[9] as Dale (2005, p.657) adds

artefacts within the office environment to warrant order and control. It is therefore deduced that 'conceived' space is a theoretical idea or design and formal property which can be accessed consciously, typically, by management intellect. For instance, Leonard's (2010) study on an organisation attempting to minimise waste and further promote recycling observed the introduction of larger communal recycling points rather than individual refuse bins. This can be interpreted as managements' efforts to encourage recycling by controlling where and how employees could discard their waste. These recycling points are seen as 'conceived' spaces. Further to this example, Leonard (2010) discovered that, employees were especially attached to their individual refuse bins and, as a result, began stacking waste on their desks. In this example, the waste symbolised an artefact through which employees expressed their opposition, through which they resisted. This point leads on to Lefebvre's (1991) second aspect of social space: representational space, which is characterised as 'lived space'; the experience of 'inhabitants and users' as lived through images and symbols (p. 39). Contrary to 'conceived space', representational space is the controlled space (by managers, planners, etc.) which the users' imagination aims to alter and appropriate (Lefebvre, 1991). Zhang et al. (2008) further explain that lived space develops through the meaningful and indeed, intentional expressions or 'power to' of human conscious experiences, embodied in employees' dynamic involvement with a given physical space. In the context of organisational space, Dale's (2005) examples include larger offices or luxury furnishings which often act as status symbols in the workplace, illustrating that materiality and culture are 'intrinsically entwined'.

In defining representations of space and representational spaces, Lefebvre (1991, p. 50) adds: "the representation of space, in thrall to both knowledge and power, leaves only the narrowest leeway to representational spaces, which are limited to works, images and memories whose content, whether sensory, sensual or sexual, is so far displaced that it barely achieves symbolic force". Therefore, as Alison Hirst (2011) clarifies, alternative meanings attributed to space can only construct temporary symbolic effects, and by implication, are unlikely to have any effect on emergent social life. Dobers and Strannegård (2004, p. 829) explain that "the representational spaces dominate; they overlay physical space, using it symbolically rather than physically". Furthermore,

according to Lefebvre (1991), conceived and lived spaces signal verbal or non-verbal symbols and signs. Verbal signs are defined as "language, mathematical figures, etc", and non-verbal[10] symbols as "music, sounds, architectural constructions, etc" by Lefebvre (1991, p. 48). These spaces are mental in nature; however they do exhibit physical manifestations which are signified by Lefebvre's (1991) third aspect to social space (Zhang et al., 2008).

The third and final aspect to Lefebvre's social space is: 'Spatial practice' or 'perceived space', which refers to "production and reproduction, and the particular location and spatial sets characteristic of each social formation" as defined by Lefebvre (1991, p. 33). Dale (2005) recognises this in relation to organisational space as the space we experience on a day to day basis. She (2005) understands it as "the physical arrangements and how these change over time" (p. 665): for example, in an office setting, perceived space is the particular placement of non-verbal artefacts. The type and location of these artefacts can be seen as symbolically representing what Lefebvre (1991) refers to as 'spatial practice'. This aspect of Lefebvre's social space bears a resemblance to the ideas in Barker's (1968) 'Behaviour Setting Theory' in the discipline of ecological psychology, because they both suggest that behaviour and meaning of space is constructed as one; a component unique to a specific person within a specific environmental setting. Behaviour setting theory suggests that there are precise, identifiable units of the environment or workplace behaviour called 'behaviour settings'. These behaviour settings combine both physical (artefacts) and social (behaviour) elements of the environment into one unit (Scott, 2005). Schoggen (1989) gives an example of a school gymnasium which can serve as a space for sporting activities as well as a space for school fairs. Hence it has different behaviour settings: according to Barker and similar to Lefebvre, it could also be said to have different 'spatial practices'.

Applying, Lefebvre's triad within an organisational scenario may help with the understanding of his concept. First, conceived space which has an abstract space of pure mathematical figures and verbal messages, is symbolised

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[10] It is important to note here that, this definition of 'non-verbal symbols', should not be confused with 'non-verbal artefacts' Van Marrewijk (2009), which were defined earlier in the chapter.

through the design and planning of office environments, organisational rules (Spicer and Taylor, 2004); and, then there is the perceived space, an all-too-material, and therefore indifferent space, consisting of the flows of labour or information as well as the physical movements of employees (Dale, 2005): the gestures of opening doors, walking, sitting etc. In the middle of conceived and perceived spaces lies 'lived' space, a space of pure human experiences (Watkins, 2005), of people's sense-making, imagination, and feeling, of people's imagination and feeling and thus identity of organisational space as they encounter it. Therefore, the lived space embodies both conceived and perceived spaces without being reducible to either (Zhang, 2009).

To recapitulate: Lefebvre's (1991) work on the 'production of space', has shifted the level of analysis 'on' space and social ecology to the analysis of the process by which meta-level discourses 'of' space are socially produced (Shields, 1999). Lefebvre (1991) tries to break the typical 'ideologically dominant tendency… to divide space up into parts and parcels in accordance' which obscures a perceptive into the understanding of the processes involved in the production of space and the embedded social relationships (Lefebvre, 1976). Martins (1982) argues that it is this tendency which lacks the ability to appreciate the unity of space which leads to a predisposition to fail to notice the contradictory and opposing social relationships that are latent in spaces. This tendency and predisposition is something which Lefebvre (1991) believes resides in those who have the 'power over'.

To summarise, creators of physical spaces experience perceptual space, and this is also true for the users of these spaces who form conceived spaces of other spaces once they experience spatial practices (Dobers & Strannegård, 2004). Lefebvre's (1991) aspects of social space are not only a method of reading and interpreting space but "it is a means of living in that space, of understanding it, and of producing it" (p. 47-48). Through Lefebvre's first aspect: representations of space, one can connect spatial power signalled by designers and managers in conceived spaces. The second aspect: representational space, suggests that employees use symbols to personalise their space, while the third aspect: spatial practice, is the symbolic artefacts used by employees to achieve personalisation. It is further argued here, that since organisational space can be socially produced (through the three forms) it can also be re-

shaped and resisted, as will be discussed in the next sections (2.5 and 2.6). From this it can be suggested that organisational space is performative, which will be evaluated in section 2.7.

Having discussed the materialisation of disciplinary and spatial power through built form and produced space the next section analyses organisational space, within a corporation. For example organisational hierarchy / structure, communication and change will be discussed through practices intentional and social production within the built environment. This section aims to highlight how these are designed, constructed and resisted.

### 2.4.1. Organisational Architecture: within the organisation

Organisational Architecture is a field which was first presented by Nadler et al. (1992) and in its use in conversation typically has two meanings. The first of which is Organisational Space as it has been examined so far, and the second Organisational Architecture refers to the metaphorical structure of formal and informal systems and structures in an organisation. Therefore it is important to note here that the preceding sections have been considering organisational space as the physical structure of non-verbal and tangible artefacts such as geographic location, spatial design and furnishings. While these will appear again throughout this review, organisational architecture in this section will reflect the management structure of the organisation (intangible elements): for example, hierarchy, spans of control and information flows. In this section, organisational architecture will be evaluated against its influences from organisational space and spatial power. This includes the organisational architecture, communication and change within an organisation. While it has been argued thus far, that spatial power 'over' is materialised in the literal spaces of an organisation, this section will consider the metaphorical spaces of relationships and interactions. Furthermore, practises within the built environment, their intentional as well as social production will result in how they are constructed and resisted in organisational space as a representation of and actant 'on' its meaning.

## 2.4.2. Organisation Architecture and Communication

Historically, organisational architecture of hierarchy and spans of control have provided one of the early criteria for designing an organisation's space (see: Baldry, 1999; Hatch, 1997). Thus in the past, it was common to associate offices on the top floor of a building with positions of power in an organisation, as these spaces were often occupied by Chief Executives or Senior Managers (Hatch, 1997). This was seen as symbolic of organisational architecture, hierarchy and aspiration. Essentially, there was a need by senior members of staff to portray their hierarchical position in the organisation through physical structure (or organisational space), visual imagery and artefacts. An example of this would be the 'skyscraper', which illustrated that the powerful head office could be found at the top of the pyramid (organisation) (Kooijman, 2000). Personnel would be rewarded for their achievements socially through a better title within the company and physically, by providing them with a bigger and better office to work within: something which Button (1997) suggests was management's way of communicating 'prestige symbols' to workers. Personnel would also be given more freedom to design their space with a bigger design budget to further personalise it. Personalisation is an important key element in job satisfaction through organisational space and will be described in a later section. Symbolically, work place pride is born out of the pleasure taken in something which is believed to reflect credit upon oneself (Goins et al., 2010). An interesting argument made in this work is that physical and symbolic attributes are often studied independently, and their research shows that organisations can gain new insights into the field organisational space (where these are typically studied together) as office components can possess both these attributes. The example is presented of a 'partition' or 'divider' which can represent the physical attribute of speech and visual privacy but can also symbolise a 'place of refuge or sanctuary' (Goins et al., 2010, p. 945).

As previously mentioned, one's position in the organisational hierarchy is symbolised physically through their office space (Baldry, 1997). However, organisational architecture is not limited to the organisational chart of a company. This sub-section (2.5) will consider the construction of meaning through spatial power of organisational architecture and communication which can be adopted in different organisational spaces. It is believed that

organisational architecture interacts with spatial design to determine communication patterns of the workforce: for example, in the process of relocating and re-designing an organisation (re-arranging organisational architecture), the workspace may alter the way people work (or communicate) (Allen et al., 2008). Instances include (but are not limited to), how knowledge is created (creativity and/or innovation) and how this can be transferrable from one employee to another through communication or interactions in the workplace.

The role of spatial power as it influences communication is a fundamental feature in the understanding of the value of intangible or metaphorical organisational assets (Ritter, 2003). In light of organisational communication, it is argued that the frequency and the likeliness of communication, interaction and spontaneous face-to-face interaction, is crucially dependent on the physical distance between people (Haner, 2005). This suggests that conversations around furnishings such as water-coolers and photocopiers encourage communication; informal in this case, as it creates a space where people can be in close proximity to each other (Fayard & Weeks, 2007). It is contended that increasing the frequency of interactions will affect the mediums of knowledge sharing (Backhouse & Drew, 1992). Fayard and Weeks (2007) study centred on interactions occurring around artefacts or furnishings, such as those mentioned above, which did not necessarily encourage fruitful conversational outcomes; however, the materials did provide an environment for more conversations to occur. Therefore, while the frequency and probability of communication or interaction increases it does not guarantee productive knowledge sharing. These depend on the organisation and may prove to be different between corporations in different industries and different organisational architectures.

**Figure 2.4: Hall's (1966) proxemics diagram**
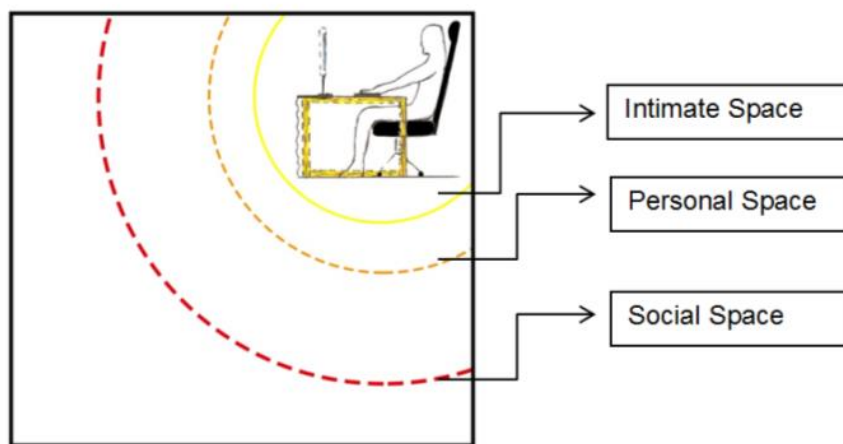


Source: Adapted from Hall (1996)

It is reasoned amongst the literature that there are two types of organisational architecture which dominate the spatial design of an organisations' physical spaces (Backhouse & Drew, 1992). The first organisational architecture is referred to as a 'cluster', whereby employees working on the same project are spatially grouped together. It is believe that movement between desks or departmental floors is decreased and as a result, less time is wasted in informal interaction, which occurs as a result of spontaneous face-to-face interactions in employees' non-immediate[11] workspace (see: Figure 2.4); thereby improving productivity. For example, within a construction firm, it is generally the case that people working on the same building will be stationed together, so as a mixture of architects, project managers, quantity surveyors are found within close proximity to each other (Duffy & Tanis, 1993). The second type is 'disciplinary membership'. In this type of structure employees are encouraged to move around the office, as the people in immediate proximity are completing similar tasks. For example, at a university it is typical that the secretaries, lecturers and PhD students have their disciplinary spatial location, perhaps divided by department (e.g.: finance, management, marketing, etc.). If people are working on cross-departmental projects, they are required to move out of these areas

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[11] Immediate workspace is often referred to in the literature as the employee's personal workspace and other objects or people and their workspaces in near proximity to them (Hall, 1966). Therefore, the term: non-immediate workspace can be used to explain the space which is not in close proximity, a space where one does not traverse through regularly. According to Hall (1966, p.114 - 125), a person's space beyond their personal space is called the 'social' space, which he quantifies as the distance of 4ft to 12ft from the person themselves.

and into either a communal space or travel to another disciplinary location. The suggestion here is that interacting or communicating beyond one's assigned project should stimulate creativity and innovation (Backhouse and Drew, 1992). Additionally, it has been suggested (consider Figure 2.4) that the further a person moves from their 'intimate' or 'personal' space they are more likely to engage in formal discussions (Hall, 1966). However, the research which supports these ideas is typically lacking empirical data, sometimes also contradicting. For example, Stokols et al. (2002) identified work distractions such as noise and foot traffic (which depend on the levels and frequency of communication and interactions) to be negatively correlated with *perceived* environmental support for job satisfaction and creativity. The rare studies which exist do support a relationship between creativity and the wider spectrum of organisational space through different approaches (McCoy, 2005). Furthermore, in the literature of organisational space and creativity, it is argued that there are many opportunities provided by spatial design which support creativity in teamwork or groups (McCoy, 2005).

Dividing organisational structure into either a cluster or disciplinary membership suggests a method by which spatial power can be observed through whether communication is promoted by the organisation (Sailer, 2011): for example, in a cluster structure, communication is important in so far as productivity is not affected; this can be seen as a promotion of formal conversations and interactions. In contrast, the disciplinary membership structure encourages both formal and informal communication because emphasis is placed on knowledge creativity and knowledge transfer, rather than relying solely on the workforce to be productive. Therefore, it can be interpreted that spatial power can be found in how employees communicate, as a correlation exists between spatial arrangement and movement patterns (Penn et al., 1999).

The literature suggests that social interactions and informal communications (as opposed to formal interactions) are popular in academic studies because they have been found to be positively correlated to the level of innovation within an organisation (Backhouse and Drew, 1992). It is further advised that environments, such as private meeting rooms, need to be created in order to promote "rich and deep conversations" (Gratton & Ghoshal, 2002, p. 209). Yet Button's (1997) study found that although employees were aware of the

symbolism associated with their traditional office space, such as closed doors and physical barriers between desks, they insisted that they had more fruitful conversations in their informal and spontaneous face-to-face interactions with other members. In this study, employees maintained that the lack of encouragement to communicate around the workspace area meant conversations were more adequately planned (Button, 1997). Between the two case studies; traditional versus open-plan, it was noted that employees forged relationships intra, inter and cross-departmentally, in the traditional rather than the contemporary design. This is an example of how organisational space can represent an alternative meaning to employees instead of the intended meaning organisations try to portray through spatial power.

It is contended that that collaborative work environments require spaces and furnishings to support both individual worker focus and project group interactions (Heerwagen et al., 2004). In practice, studies support that although people had the opportunity to interact more frequently, this did not always lead to 'meaningful interactions' (Zalesny & Farace, 1987). Therefore, as the literature suggests, in spatial terms, high or low proximity in relation to department, group or project in terms of promoting communication, does not guarantee knowledge creation and transfer. Therefore, it can be deduced, that the relationship can also be reversed, while historically, organisational architecture symbolised how space was planned, designed and implemented; it is explored next, that organisational space can manipulate organisational architecture. Recent trends in organisational spatial design are encouraging an open-plan or hot-desking type of design (Baldry & Barnes, 2012). This suggests that the space is designed before the process of organisational architecture can take place, and thus impacts this process. As Boutellier et al. (2008) found, office arrangements (spatial design) had a strong influence on communication. Their study was primarily measured in a Research and Development (R&D) department which relocated from cell spaces (traditional) to multi-spaces (open-plan) and saw improved communication as a tool for improving knowledge, creativity and achieving higher productivity for the department. These results present a similar argument to Duffy's (1974) views in the power of open-plan spaces to support organisational architecture of communication and transparency. In removing the floor-to-ceiling walls which made up a traditional

office, could mean less hierarchy, more communication and general 'open-ness' to new ideas (Dale & Burrell, 2008). While more communication occurs as the frequency of face-to-face increases, less hierarchy is needed because, as argued in section 3.2 on spatial power as a form of disciplinary power, people begin to self-survey and self-discipline as well as group and team surveillance[12].

Considering the literature mentioned in this section, it can be said that organisational architecture and organisational space are relative to one another in terms of organisational communication and creativity. It has been debated that while organisational architecture can manipulate how space is designed, it is also argued that organisational space can intimidate organisational architecture. The next section will examine in more detail how organisational space is used when implementing organisational change.

## 2.5. Change in organisational Space

Changes in spatial layout may affect an organisation in different ways. At the very basic level, layout changes may affect accessibility, visibility and have wider organisational architecture influences within an organisation: thereby affecting individual and organisational behaviours. They may also affect user attitude and perception of the work environment because of their effects on behaviour as analysed in section 2.3.3 (Ecological Psychology). The literature on both environmental design and behaviour has extensively discussed the nature and importance of these effects (De Croon et al., 2005; Oldham et al., 1995; Rashid et al., 2005; Sundstrom, 1987; Wineman, 1982). In this sub-section, recent trend changes in organisations and their implications on organisation space and architecture will be introduced. The literature of organisational change will provide a foundation for analysing how organisational space is implemented, constructed and resisted by the organisation and employees or other users of that space. As a result it is reasoned that organisational space represents and acts 'on' its meaning.

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[12] This is similar to the 'panopticon' concept, where efficiency and productivity outputs are considered as the ability of inmates to self-survey and self-regulate their behaviour.

There has been a recent trend towards the development and application of technology in organisation. This has meant that people and employees are becoming increasingly mobile and multi-locational through the aid of modern and more importantly 'mobile' technologies; thereby altering organisational working practices and spatial designs (Bosch-Sijtsema et al., 2010). While, 'mobile' and 'teleworking' have become widespread terms, others include 'hybrid workspace' (Halford, 2005) or spatial mobility which are used to define mobile teleworking, which is a form of working at a range of locations, spending regular and significant amounts of time away from any office or home location they have (Axtell et al., 2008; Vartiainen, 2008). Through this chapter the changes which occur as a result of these trends have been examined. For example, the move from traditional to open-plan design spaces, the mass commodification of scanners and printers which mean bigger spaces are required, the economic and market influences which are encouraging organisational flexibility in both building form and working practices, can be acknowledges as trends which affect organisational space and architecture. Historically, the literature and research studies focused on factories and the internal organisational spaces, lately there has been emphasis on knowledge workers and the impact of changes in space and behavioural implications. For example, factories and contemporary workspaces are studied at a relatively macro-level perspective of often private organisations (King, 1984), while at Universities the spaces often under enquiry are the spaces of professors, lecturers and postgraduate staff, whereas semi-public areas such as the cafeterias, libraries or other open-plan group areas are unobserved as organisational spaces and their influences on the wider daily users such as the students. Public or communal-public spaces are not commonly viewed as organisational spaces. Studies of public and communal spaces are largely addressed in the field of urban, or city planning studies. Furthermore, these studies do not generally report on the intersection between work conducted / workers and communal-public space; rather they focus on subjects such as work/ life balance or gender inequality. Therefore, knowledge about workers and working in these spaces is limited. Current studies concentrated through the lens of these as 'social institutions' or 'architectural form' (King, 1984), they are not often examined as components of both, designed architecturally and

constructed and resisted socially as organisational spaces become 'lived' (Lefebvre, 1991).

In the above sub-section 2.4, it was briefly demonstrated that companies seeking to make their cultures less bureaucratic, hierarchical or innovative make changes in the spatial environment in an effort to use spatial design and artefacts to symbolise desired changes in behaviours or organisational identity; another form of spatial power (Turner & Myerson, 1998, p. 35). Firms may alter their physical dimensions through office redesign in order to affect organisational culture (i.e. affect 'the way things are done') (Kristensen, 2004) and reinforce desired changes in organisational architecture (Higgins & McAllaster, 2004; Higgins et al., 2006). For example, designing a space to support an innovative culture is a rising organisational practice. The importance of design elements such as colour and artwork, has been briefly mentioned throughout this chapter, additionally, these design efforts have encouraged the development of 'collaboration' or 'creativity rooms' (Wycoff & Snead, 1999), which would involve the spatial production of 'conceived space' in Lefebvre's (1991) terms.

In section 2.3 and 2.4 of this chapter, it was argued that spatial power is inherent in built form and in the production of space, it was summarised, that while space is conceived, perceived and lived space are also produced over time. Therefore, intentional spaces can also be unintentional and more vulnerable to change, which may result in negative outcomes. Hirst (2011, p. 783) cautions that "a changed relationship with the spaces we use and occupy on a daily basis implies changes to relationships with others and to individuals' identities, and may therefore have significant social consequences." Therefore, a change in space can be symbolically and simultaneously interpreted as a negative and positive change. There are a number of notable examples of how changes in workplace design resulted in unanticipated consequences or resistance for designers and facilities managers (Fayard and Weeks, 2007). Work based on social interference theory (Oldham et al., 1995) and design proxemics (Hall, 1966; Yanow & Schwartz-Shea, 2006) suggests that these modern office redesign efforts will be resisted by employees given the increase indistractions and violations of personal space (examined in further detail in section 2.6) which are inherent in the physical stimuli changes that accompany

such designs. This is consistent with research showing that open office designs are associated with less employee satisfaction in the physical environment (Zalesny and Farace, 1987), lower perceptions of unit efficiency (Brookes & Kaplan, 1972), and decreased work performance and motivation (Becker, 1982; Oldham & Brass, 1979). Research in which employees moved from private, closed offices to open (cubicle) offices tends also to be associated with declining behavioural attitudes (Brennan et al., 2002; Oldham and Brass, 1979; Zalesny and Farace, 1987), but there is an absence of research updating this phenomenon within the more modern office environment (Morrow et al., 2012). Hatch (1990), for example, demonstrated in a cross- analysis that occupants in open offices interacted more with others than did occupants of closed offices, but that the relationship is reversed when both private and open offices exist within the same organisation. Since implementing change to organisational architecture such as culture or to organisational space can thus have a negative symbolic meaning to employees and result in unfavourable unintended outcomes, it is summarised here that organisational space is both organised and organising.

It is briefly questioned here whether one variable causing this negative symbolic meaning is age group of workers or users and as section 2.6 will further discuss: identity. Differences in age groups among employees in an organisation, or whether the majority of workers are young or mature, provide one of the common factors of difference in behaviour attitudes towards change in general. Younger employees, whose office expectations, work habits, and coping strategies are less established, might be expected to react most favourably to spatial changes, while older employees are more likely to resist change because their 'impressionable years' have passed (Forteza & Prieto, 1994). Moreover, older employees, having perhaps moved to an open-plan setting and given up their access to the private single office environment may react more negatively to spatial changes because they view their re-assignment as a breach in their psychological contract with the employer (Bal et al., 2010). Support for this line of thinking is indirectly provided by May et al. (2004) who found younger workers' perceptions of their workstations were influenced more positively by ergonomic improvements than older workers' perceptions. Therefore, it can be deduced that organisations with a larger number of younger

workers or users are more likely to implement contemporary spatial design changes with less resistance to spatial power. Considering spatial design changes as symbols of powerful value statements, organisations may be able to alter negative meanings into positive assets which can help make the work space a 'valuable space' which represents organisational integrity (Button, 1997, p.162).

It is important to note that while organisations seek to alter their organisational architecture through organisational space structures and changes, the perspective of the employee attempting to create or construct their workspace in this intentional space is often unobserved. The following section (2.6. Creating a Workspace and Identity) provides the first steps in literature which argues for the individual user's workspace in these unobserved communal-public spaces.

## 2.6.    Creating a workspace and Identity

Modern research from both psychologists and sociologists has placed importance on the symbolic role of office layout and décor for workers' perception of identity and culture in organisations. Workplace identity is defined as the distinctiveness and status self-categorizations individuals use to signal one's identity in a specific organisational workplace (Donald, 1994b; Elsbach, 2003b). These symbols of identity can be seen in the way individuals personalise their workspace. To understand personalisation, it is important to recognize how space can be a place, and the creation and resistance of a workspace. Mobile, flexible and tele-workers are most commonly the type of worker who is often presented with opportunities to create their own workspaces (Bosch-Sijtsema et al., 2010; Venezia et al., 2008). Reasons for this may include a recent trend for hot-desking, hotelling or flexible working practices. As the literature suggests, these trends are becoming increasingly applied to organisational working practices and will therefore provide a focus for this section.

In a bureaucratically anonymous epoch, sustaining and conveying social and personal identity can empower an individual (Baldry & Barnes, 2012). Research on self-perception presents the conclusion that sustaining a positive workplace

identity relates to one's ability to personalise one's physical workspace (Elsbach, 2004). Sommer (1969) associates 'personal space' with two meanings, the first is emotionally charged zone or bubble (similar to Hall's (1966) first two bubbles which are found around a person: intimate and personal space) which regulates the spacing of individuals and objects or artefacts around them. The second refers to the process by which people mark out their personal spaces; personalisation. Personalisation is the deliberate decoration or modification of an environment by its occupants to reflect their identities (Sommer, 1974; Sundstrom & Sundstrom, 1986). Elsbach and Bechky (2007), believe that portraying one's identity gives meaning to work while allowing employees to maintain their self-esteem at work. Personalisation is generally considered a form of territorial behaviour by which people use their personal belongings to mark and defend their territories and to regulate their social interactions (Altman, 1975; Brown et al., 2005). Researchers such as Scheiberg (1990) and Donald (1994a) have proposed that the possibility to personalise and express oneself is very important psychologically to employees and can lead to greater job satisfaction and performance. Elsbach and Pratt (2007) further re-enforce this belief that office personalisation may be more important to its occupant as a symbol for 'Affirming Individual Distinctiveness' within the organisation. This belief is in contrast with past studies which suggested that office size and location was a 'prestige' symbol of position in the hierarchy (Button, 1997). It is argued that job satisfaction is assumed to be the most important indicator of life expectancy (Lueder, 1986), which further supports the significance of job satisfaction for health and well-being at the work place. Consequent to these arguments, Elsbach's work suggests that a change in the right to personalise versus a change from private to open plan arrangement can be more important to a worker, especially if they value the need to express their non-work related achievements through artefacts (such as parent skills and sport trophies). Additionally, a long-standing assumption exists, although not empirically supported, that an orderly appearing or tidy environment promotes efficiency (Sundstrom & Sundstrom, 1986). This leads to the general association by some facilities managers of personalisation corresponding to disorder or 'visual chaos' (Becker, 1981; Donald, 1994a). As a result, some offices have adopted policies that limit personalization. These policies tend to restrict the extent to which employees may personalise the types of items they

may display and the location of personal displays (Donald, 1994). Therefore, while organisations try to spatially manipulate workers to policies in line with organisational goals; this may have negative effects on the individual worker or user of that space. Additionally, a narrow minded consideration of literature which support personalisation in the workspace as a positive influence on wider organisational architecture impacts, such as communication, culture and change (discussed above in section 5).

Knight and Haslam (2010a) argue that certain aspects of organisational space can influence the 'well-being' of an employee. This section will look at literature on how 'well-being' can be affected by organisational space, and how it can be seen as being symbolically constructed, and the possible consequences for the individuals.

How does space affect well-being? Office planners and facilities managers are constantly wary of 'Sick Building Syndrome' (SBS). It occurs as a result of mismanaged indoor environmental comfort. Wong et al. (2006) give examples of poorly managed "thermal sensation[s], indoor air quality, illumination and acoustic conditions, SBS is also a consequence of the company culture, the occupants' characters, and their social and family situations" (p. 341). It is evident, therefore, that SBS affects health and overall well-being. Focusing on the variables which an organisation can have control over, such as indoor atmosphere and culture, Knight and Haslam's (2010) experiments found that employee well-being increased when employees were empowered to design their office space. This research is part of a long line of studies which suggest control or power 'over' through manipulation of symbols and artefacts influences organisational space, while consequentially also allowing individuals the right and power 'to' construct their spaces.

A very important reason why an organisation would aspire to keep employees healthy and satisfied would be in order to minimise employee turnover. Increasing employee well-being, by means of personalization and empowerment through organisational space, would provide better job satisfaction and provide employees with a 'sense of place' in their experience of the environment (Carnevale & Rios, 1995). In their empirical research paper Carnevale and Rios (1995, p. 228 - 229, emphasis added) concluded "the

variables *Sense of Place* and *Job Satisfaction* demonstrate a moderately strong positive association with one another, which means that the nature of physical work environments is indeed an important factor in shaping employee attitudes on the job". Given the freedom to personalise, employees perceive this as a symbol of their 'value' to the organisation.

Those workers with the most freedom to personalise and as the literature suggests feel empower and thus feel more fulfilled in their organisation and organisational role, are mobile or teleworkers. There is a slight misconception that mobile workers are constantly on the move, either in an airplane, train or car, however it has been suggested that mobile workers are often those who work from home (Venezia et al., 2008). Home-workers can have different spatial requirements at home depending on what type of worker they are, Venezia et al (2008) identified three different types: 1) the problem solver, 2) the consultant and 3) the leader. This is considered as a very broad categorisation of home-workers but nonetheless provides a basis for considering the different spatial needs each may face. For example, at home they all require a desk, perhaps an ergonomic chair, storage space etc, and the differentiation comes as a result of different spatial or technological preferences. A problem solver may need a workspace to conduct individual tasks, whereas a leader or consultant may need a space where meetings with clients or delegates can take place. A further in-depth study into male home-workers provides a contrast to the wide literature available on women and work life balance (Marsh & Musson, 2008). Interestingly, this line of conceptualisation of how space is designed and implemented in the home as well as the organisational intentional spaces, provides a step towards the analysis of emotions and their relation to identity and further on organisational spaces.

A further recent trend in mobile working is coffee-shop working, which comes as a result of contemporary hotelling or hot-desking spatial designs or practices in organisations. The situation in which workers have "no fixed personal workspace and use any available desk as needed" (Felstead et al., 2003, p. 16), is referred as 'hot-desking', can be viewed as one aspect within mobile or telework which is facilitated by architectural designs through the combination of flexible Information and Communications Technology (ICT) systems with flexible workspaces. It is further argued that mobile or multi-locational workers

can be considered as 'nomadic' workers (Bean & Hamilton, 2006). Whether these workers are found within an organisation, coffee shop or the home, they often are creating and re-creating their workspaces on a daily basis. This provides an interesting point of study particularly in those spaces which are blurred between public or communal spaces.

Recently, there has been an argument which suggests that the boundaries between private and public spaces are becoming increasingly fluid (Bourgeault et al., 2012). While these studies are interested in how professionals construct and convey themselves in these spaces or how the lines between private and public spaces are becoming blurred, a gap exists in the micro-study of these public spaces which are considered as communal spaces. Consequently, this explains the use of the term 'public-communal space', which has been used thus far throughout this chapter. Studies which are similarly attempting to fill this gap are focused on midwives as professionals or primarily female orientated. While it is not argued here whether midwives are professional workers, it is reasoned that they do not represent the majority profession of mobile or multi-locational workers and hence is a limitation.

In terms of 'creating workspaces' within either public or private spaces, a growing number of studies considers how mobile workers traverse between these spaces. So the changes in behaviour or emotions associated with change but not with the creation of workspace at alternative locations of the organisation. The studies considered here are primarily gender based and explore the boundaries between work - life – balance which occurs as a result of working at home. A further addition of locations such as coffee shops or other public-communal spaces can provide valuable knowledge to this body of research. In order to further understand how work spaces are created, the following section (2.7) discusses alternative conceptual shifts in the field of organisational space through ANT and Performativity. Therefore, arguing that organisational space is a representation of and actant 'on' its meaning.

## 2.7.    Actor-Network Theory and Performativity

There has been a recent conceptual shift from organisation to organising (Dale & Burrell, 2008), involving a re-consideration of space as "processual and

performative, open-ended and multiple, practiced and of the everyday", as explained by (Beyes & Steyaert, 2012, p. 1976). In considering organisational space to be performative and processual, a need exists to identify the scholarly work embedded in practices of spacing which, as a result, is itself performative (Law, 2004). To address this, there are two main bodies of theory to draw on; the first is 'Actor-Network Theory' (ANT) and the second: 'performativity'. This section will explore how these theories understand and study the social production of space.

Actor-Network Theory (ANT) is viewed as a useful way of thinking about how complex networks are intertwined with spatial relations (Murdoch, 1997, 1998; Thrift, 2008). Additionally, the theory provides a method for navigating dualisms (e.g.: nature/society, action/structure). John Law (1997) explains that ANT insists on the performative character of relations and the objects constituted in those relations. In other words "[ANT] has indeed helped destabilise Euclideanism: it has shown that what appears to be topographically natural, given in the order of the world, is in fact produced in networks which perform a quite different kind of spatiality" explains (Law, 1997, p. 5). In this way, ANT is able to redefine the discipline of geography, which assumes that network perspective cannot co-exist with an organisational notion of space as fixed and absolute in its co-ordinates (Latour, 1997). Instead, actor-network theorists encourage a geography of 'topologies' (Mol & Law, 1994). Serres and Latour (1995, p. 60) explain the notion of a 'topology' through a handkerchief example:

> "If you take a handkerchief and spread it out in order to iron it, you can see in it certain fixed distances and proximities. If you sketch a circle in one area, you can mark out nearby points and measure far-off distances. Then take the same handkerchief and crumple it, by putting it in your pocket. Two distant points suddenly are close, even superimposed. If further, you tear it in certain places, two points that were close can become very distant. This science of nearness and rifts is called topology, while the science of stable and well-defined distances is called metrical geometry".

This theory assists in the deduction of how the term 'network' can be used to serve as a metaphor for a series of connections and disconnections (Murdoch, 1998). Within ANT, space becomes "a question of the network elements and the way they hang together": for example, "Places with a similar set of elements

and similar relations between them are close to one another, and those with different elements or relations are far apart", as clarified by Mol and Law (1994, p. 650). This means that it is recognised that proximity or distance within networks of both space and time are fundamental for ANT. Studies of science or technology in action show that actor-network theorists have focused attention on all the elements (e.g.: test tubes, organism, machines, texts) which are juxtaposed in the construction of networks; the studies argue repeatedly that networks are constituted of diversified materials which are woven together in order to establish the endurance of connected relations (Murdoch, 1998). Bruno Latour exemplifies this with his belief that materials solidify social relations and allow them to endure through time and space. Using Hetherington's (1997b) actor-network perspective on his study of a pottery museum, the concept of ANT may be better understood. Hetherington (1997b, p. 201) identified "a series of connected spaces that are architecturally designed so that one [the user] moves in a certain direction while being given a series of choices"; for example, lifts, staircases, doors and display cabinets help a user determine a route which they walk through as is mediated by the space itself and its affordances. This framework of thinking can be viewed as an argument to ecological psychology and organisational space as a process.

ANT encourages a perspective whereby symbolism in artefacts or materials affords a meaning to their users beyond their individual affordances, becoming a collective of inter-related affordances which are solidified over space and time. Consequently, this allows room for the continuous exploration of new ways of making space matter to organisations. Van Marrewijk and Yanow (2010, p. 188) list a few ways in which the concept of affordance may represent the relationship between the 'actor' and the environment, as well as spatial elements:

- "The environment may be a resource, in the sense of providing or furnishing certain actions

- The environment may be a motivational and cultural factor, stemming from an associational reading of the environment (Rapoport, 1982)

- The environment may be an inspiration. The spatial context may inspire actors to explore new projects"

In addition, Latour (2005, p. 71) maintains that "anything that does modify a state of affairs by making a difference is an actor – or, if it has no figuration[13] yet, an actant". Therefore, the various physical and spatial elements of organisational space presented in this chapter can not only be considered as actors in their own right, but also as active participants in such social networks. In considering Lefebvre's (1991) social triad[14] of conceived, perceived and lived space, the latter can be used as an example of organisational space as an 'actant' on its meaning. While Lefebvre (1991) argues that 'lived space' is the space which is experienced by humans or employees, they can also be seen as the actors which 'modify the state of affairs'; which in this context is organisational space. Taking the home-working example from the earlier section (2.6), it can be deduced that the home is an organisational space, in so far as the individual chooses for it to be; thereby, the meaning of organisational space can be altered to mean the 'home' and the 'workplace'.

While there are a few criticisms of ANT, the one of particular relevance is the underrepresentation of the realm of embodied creativity, where human actants are at times able to intertwine materials and relations into novel and unexpected arrangements (see: Laurier & Philo, 1999; Thrift, 2000). Here is where the second body of theory: 'performativity', is proposed.

Scholars in the literature suggest that social life resembles some sort of performance, an idea which has been elaborated by many social theorists working within very different analytical traditions: for example, Gregson and Rose (2000) introduce Erving Goffman (1956, 1963, 1967) who, in the 1950s and 1960s, argued that performance is critical to the study of the interaction order. Goffman's method of approaching interaction was though dramaturgical metaphor (eg: on stage, masquerade) as well as an engagement between individual(s) and audience(s) for whom individuals perform and who, in turn, interpret their actions (Gregson and Rose, 2000). In Goffman's (1956, p 252 – 253) opinion, "the self [is] a performed character ... not an organic thing that has specific location ... [the performer and] his body merely provide the peg on which something of a collaborative manufacture will be hung for a time". It is

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13 Here, by 'figuration', Latour (2005) implies a network consisting of both human and nonhuman factors that contextualizes the motions observed (Van Marrewijk and Yanow, 2010).

14 Refer to Section 4 for a deeper look into Lefebvre's (1991) work.

understood, that behind Goffman's (1956) analysis of interaction exists an active, prior, conscious and performing self. In relating organisational space to Goffman's perspective on 'performance', it has been proven, for instance, that that workers are expected to conduct themselves in particular ways, so that there is a form of script to follow which administers the behaviour expected of workers, including their forms of speech and, frequently, their specific embodiments (e.g.: their fashion); and that there are a number of audiences for this performance, whether it is management or other workers, or even consumers (Gregson and Rose, 2000). Although Joan Riviere (1986) and Luce Irigaray (1985) first linked femininity as being a mask donned for social performances, Judith Butler was the scholar who provided a linguistic definition of performativity, as opposed to a theatrical or psychoanalytic account of performance (Butler, 1988, 1993; Butler, 2009; Butler, 2011). Unlike Goffman, Butler's contribution suggests that one's identity does not precede the performative identity, but is however, rooted and created through the repetition of its performative acts (Stone, 2007). It is only recently that geographers have begun to draw on such radical ways of thinking about performance (Goffman, 1956) and performativity (Butler, 1993) in space. Gregson and Rose (2000, p. 434) believe "the motivation behind this turn would seem to be that to see social identities as performed is to imply that identities are in some sense constructed in and through social action, rather than existing anterior to social processes". Judith Butler has provided a platform of intriguing possibilities for thinking about organisational space as a representation and actant 'on' its meaning.

In her own words, Butler (1993, p. 22) defines her concept:

> "Performativity is a matter of reiterating or repeating the norms by which one is constituted: it is not a radical fabrication of a gendered self. It is a compulsory repetition of prior and subjectivating norms, ones which cannot be thrown off at will, but which work, animate, and constrain the gendered subject, and which are also the resources from which resistance, subversion, displacement are to be forged".

In the context of gender, Butler (2009, p. 321) explains:

> "to say that gender is performative is to say that it is a certain kind of enactment; the "appearance" of gender is often mistaken as a sign of its internal or inherent truth; gender is prompted by obligatory norms to be one

gender or the other (usually within a strictly binary frame), and the reproduction of gender is thus always a negotiation with power; and finally, there is no gender without this reproduction of norms that risks undoing or redoing the norm in unexpected ways, therefore opening up the possibility of a remaking of gendered reality along new lines".

In contrast to Goffman (1956), Butler (1993) openly rejects theatrical notions of performance. Butler does not work with any notion of a social agent existing prior to its production through enacted discourse. Instead, she argues that the 'doing' of a discourse already establishes patterns of knowledge and it is this which produces social subjects (Gregson and Rose, 2000). Unlike geographical accounts of space discussed earlier in this chapter, Gregson and Rose (2000, p. 441) maintain that "performances do not take place in already existing locations: the City, the bank…These 'stages' do not pre-exist their performances, waiting in some sense to be mapped out by performances; rather, specific performances bring these spaces into being". This framework of thinking emboldens the concept of organisational space as a process through the symbolic meanings of spaces as being performative.

A study[15] by Turner and Manderson (2007), which situates performativity in space relations, provides further understanding to the concept as it can be applied to the field of organisational space. Although they are able to use Butler's framework in their analysis of socialisation at 'Coffee House' in a university law faculty, they firstly identify that Judith Butler tends to ignore spatial elements in her work (Turner & Manderson, 2007). The term 'Coffee House' is in fact a weekly social event at McGill University Faculty of Law, sponsored for half an academic year by leading Canadian law firms, who supply free alcohol and food to the attending students. As Butler (1993, p. 24) proposes, performativity involves "a reiteration of norms which precede, constrain, and exceed the performer and in that sense cannot be taken as the fabrication of the performer's `will' or `choice'". It is this idea of iteration which Turner and Manderson (2007) are applying to their understanding of transformative forces which are at work in the socialisation of law students.

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[15] There have been a limited number of studies which explore emotional performativity within public and private spaces; however they focus on hospital professionals such as midwives and nurses. It is suggested in these studies that understanding of the performance of emotion management practices in particular and management practices in general may be limited if space is ignored (Lewis, 2008).

Their results showed that the law students present at Coffee House were engaged in a process of confirming their capacity to efficaciously fit into the corporate legal world (Manderson & Turner, 2006). "To each other they reconfirmed their identity as 'McGill law students', whilst in relation to their future as lawyers they were provided with an opportunity to 'try on' and act out the successful corporate player" explain Manderson and Turner (2006, p. 778). However, their conclusion is a mixed one: they (2006) suggest that for the law students at Coffee House, this could have been a rehearsal as well as a performance. The performativity here, can be seen in the students re-vising the coffee-house events, by doing this, it can be argued that the students were acting their identity through this action of re-visitation (Turner & Coen, 2008). However, it is noted that that students at Coffee House are not self-conscious of the implications of their performances, as they insisted to Turner and Manderson, repeatedly, that 'nothing was going on'. It is argued here that subversion and parody, those key Butlerian devices for resistance, require actors to be self-conscious of their own social and performative role. Ironic self-consciousness is the power that Butler (1990) attributes to `drag': for example. "While they remain ignorant of the nature and implications of their performances at Coffee House, they will continue to be unlikely to subvert or parody it. The subconscious remains immune to irony" conclude Turner and Manderson (2007, p. 778). Gregson and Rose (2000) believe that Butler's "radical anti-foundationalism provides a crucial critical tool for denaturalising social categories and for destabilising dominant forms of social reproduction...[however] in the face of these twists to Butler's arguments, regardless of whether Butler is being cited or not, a certain consensus around performativity is emerging in geography, one which is in many ways - notably in its conceptualisation of agency, subjectivity, and their effects - closer to Goffman than to Butler" (p. 438). This could be due to the lack of research, studies or applied testing of Butler's theory beyond 'gendered spaces', conceivably relating to 'organisational spaces' beyond public or private spaces, the current literature suggests, to those of public-communal spaces.

In summary of this section, by considering organisational space as a topology of networks, (spatial power or organisational architecture) it is argued that organisational space shapes action and interaction in networks of actors in

organisations and is reshaped by these interactions in return; thereby representing and acting 'on' its meaning (Hernes et al., 2006). Additionally, it is proposed that organisational space is processual and performative in the construction and creation of identity. Furthermore, supplementary research is required to go beyond traditional considerations of public / private or gendered organisational spaces and consider the public-communal spaces which are becoming increasingly popular to multi-locational workers.

## 2.8.    Summary and Conclusion

This chapter has brought together several theoretical conceptualisations: power, ecological psychology, organisational theory, ANT and performativity, in order to understand the field of organisational space and its alternative conceptualisations.

The chapter began with an introduction to organisational space as a term with a variety of discursive definitions, which revealed that the field is relatively neglected both conceptually and empirically in management and organisational studies. It was maintained that the majority of the literature focuses on the design and planning process of organisational interior spaces. For example, within Organisational studies, the field of organisational space tends to be studied in the context of office spaces or corporate buildings, for example research is typically a comparison of open and closed (traditional) office spaces, or spatial layout. It was suggested that organisational spaces not only include interior but also exterior spaces as well as any space where an individual chooses to work. This is fuelled by developing and emerging technologies and changes in economy or market conditions. It was initially introduced here that public-communal spaces are not commonly viewed as organisational spaces and often remain unobserved as do the individual users of these spaces.

Sections 2.3 and 2.4, argued the precedence of power 'over' in both the built form and the in the social production of space. These were informed by Foucault and Lefebvre respectively, and the nature of power and its materialisation through built form were examined, with a precedence placed on power 'over'. It was further maintained that advances in technology strengthened spatial power through panoptic and visual surveillance and argued

that 'visuality' is important in individual workers who create their workspaces. Therefore, while 'intentional spaces' were popular places for research studies, further literature was presented to support the notion that organisational space matters, not only through how it is designed, but also through how it is created socially, and resisted.

Having discussed the materialisation of disciplinary and spatial power through built form and produced space, section 2.4.1 and 2.4.2, analyses the influences of organisational architecture: structure, hierarchy, communication, creativity and change, on organisational space and vice versa. Through this, possible factors of organisational space resistance are introduced, which lead into the section (2.6) on creating workspace and identity where resistance is more evident. Here, it argued that personalisation is important to individual well-being and self-affirmation through permission to display or perform employee identity. An important contribution of this section is the identification of trends, such as hotelling and hot-desking and limitations of current studies and of their limited view of organisational spaces available to be studied. These trends have been prevailing in the last decade and it is suggested they will continue to be implemented (Bosch-Sijtsema et al., 2010). Therefore, it is proposed that public-communal spaces such as those found in coffee shops and university libraries remain unobserved and their inclusion can provide important understanding to the field of organisational space. The ways in which multi-locational workers choose to construct and create their working environment on a daily basis also remains unobserved and limited in empirical support. Coupling the narrow availability of studies in public –communal spaces and the individual worker and the creation workspace provide both the possible location and participant of this study.

The final section: 2.7, consists of alternative conceptualisations of organisational space: Actor – Network Theory and Performativity. The inclusion and application of these theories to the other disciplines of organisational studies and psychology are unique to this chapter and this study. While ANT provides the consideration of organisational space as a representation and actant 'on' its meaning, the concept of performativity offers support that organisational space is both processual and performative. Both ANT and

performativity offer alternative ways of thinking and conceptualising, what has been termed in this chapter: public-communal organisational spaces.

In conclusion, this study aims to contribute to the socio-spatial school of thought; which in this chapter is considered to be informed by studies in the materialisation of spatial power, as conceptualised by Dovey (2008) and (Foucault, 1995), and socially produced organisational spaces (Lefebvre, 1991), particularly those regarded as public-communal spaces and created by multi-locational workers (Bosch-Sijtsema et al., 2010; Vartiainen, 2008). It is here where this study aims to fill the gap of understanding the changing practices of multi-locational workers and their daily choice of work spaces through an integrated approach of organisational space.

# 3.  Methodology

## 3.1.  Introduction

The previous chapter highlights the gaps in terms of research, in the understanding of multi-locational workers and their use of public spaces. This is reflected in the limited nature and quantity of research conducted on these workers while at their public workspaces. This chapter aims to consider the methods of past studies which have influenced the field of organisational space thus far. With this information, the researcher seeks to make a case for the approach and methods which will be deployed in this study.

While studies in the field of organisational space have recently surfaced under the interests of urban, city planning or even medicine, these as well as OT[16] studies do not generally report on the intersection between work conducted / multi-locational workers and communal-public space; rather they focus on subjects such as work / life balance or gender inequality and their relation to these spaces (Marsh and Musson, 2008). Therefore, knowledge about workers and working in these spaces is limited. The reason for this could be attributed to the general issues which were faced by previous researchers in studying the combination of space and behaviour together. Nonetheless, there have been contemporary studies which offer an empirical analysis of behaviours or perceptions of people in a particular space. The intention of this chapter is not to review the existing knowledge of multi-locational workers and their work in public spaces but rather to identify and explore some of the methodologies and combinations of techniques used currently to examine the use of mobile workers and their working practices in public organisational spaces.

The chapter is divided into five principle sections. The first begins by setting out the underlying ontological and epistemological assumptions which this research is founded upon. The second, centres on the chosen methods of data collection and the reasons for such an approach. In brief, this research will take a mixed-

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[16] Organisation theory (OT) concentrates on the study of organisational phenomena (at both macro and micro levels) and thus will be used interchangeably with the term 'organisation studies' (Tsoukas and Knudsen, 2003).

method case study approach, consisting of elements of non-participant observation, semi-structured interviews and a questionnaire as primary sources of data. The subsequent section will deliberate on the process of collecting data, such as a background introduction to the organisation and chosen case site, and discuss the design and execution of the specific methods employed. Throughout this section, both advantages and limitations of the methods will be discussed. The final section details the chosen methods for analysing the data; thematical and statistical analysis. The researcher will conclude the chapter with a reflection on the ethical consideration of this study.

### 3.1.1. Reiterating the Research Gap

In chapter two, it was demonstrated that current studies under the Organisational Space umbrella provide a limited view of spaces regarded as a public or communal organisational spaces such as coffee shops or university libraries. It is argued that recent trends of hotelling and hot-desking have been prevailing in the last decade and it is suggested they will continue to be implemented (Bosch-Sijtsema et al., 2010). As a result of this, mobile or multi-locational working practices have been changing. Therefore, it is proposed that public-communal spaces remain unobserved and their inclusion can provide important understanding to the field of organisational space. The ways in which multi-locational workers choose to construct and create their working environment on a daily basis also remains unobserved and limited in empirical support. A combination of the narrow availability of studies in public – communal organisational spaces and the creation of workspaces by the individual worker, provide both the possible location and participant of this study. The researcher argues that there is a need for a deeper look at multi-locational or mobile workers and their use and perceptions of space, especially a space which they interpret, create and work in.

### 3.1.2. Restating the aims and objectives

The main research aim of the study is to examine multi-locational workers and their use of space in public organisational environments. As exemplified by the Forum at the University of Exeter. In so doing, this thesis contributes to the socio-spatial school of thought by providing an understanding concerning the

people who choose to work away from private spaces which are termed here as multi-locational workers.

**Table 3.1: Objectives, Research Questions and Associated Methods**

| Objectives | Research Questions | Data Collection Methods |
|---|---|---|
| **1) to investigate their current perceptions of a specific space** | i) What are the demographic characteristics of participants? | • Interviews<br>• Questionnaire |
| | ii) What are the main reasons for visiting the Forum space? | • Interviews<br>• Questionnaire |
| | iii) Can the motivations for working in the Forum be identified? | • Observation<br>• Interviews<br>• Questionnaire |
| **2) to determine their reasons for working in open-plan spaces** | i) Are there different working spaces /areas available in the Forum? | • Observation<br>• Interviews<br>• Questionnaire |
| | ii) How can these areas be differentiated? | • Observation<br>• Interviews<br>• Questionnaire |
| | iii) Is there any statistical significance between these areas and other variables in the study? | • Questionnaire |
| **3) to ascertain any patterns of understanding about a particular space** | i) What are the different activities going on, and the mediums used to conduct them? | • Observation<br>• Interviews<br>• Questionnaire |
| | ii) What are the different mediums used to conduct their activities? | • Observation<br>• Interviews<br>• Questionnaire |
| | iii) Are there any themes which emerge from the data? | • Interviews<br>• Questionnaire |
| | iv) Can it be argued that the Forum is a representative case, of a given typology? | • Interviews<br>• Questionnaire |

(Source: Author)

By identifying their profile and motives they have for working in public environments and the importance of their experience in this space overall. Furthermore, it makes reference to their perceptions of the Forum space.

The main objectives, research goals and associated methods are summarised in Table 3.1, furthermore they are:

1.    To investigate their current perceptions and reasons of a specific space

This objective attempts to explore certain patterns among the students using the space, such as frequency of visits or preferred times and other demographic characteristics in order to better understand the users of the space. Following this, an analysis of the main reasons for visiting the Forum will be conducted in conjunction with the findings from the two previous objectives. Through this, it will attempt to pinpoint participant's motivations for working in the Forum

2.    To determine their reasons for working in open-plan spaces

This objective examines the reasons for participants choosing to conduct their work in the Forum. The goal of the objective is to identify the different working spaces which are available in the Forum and provide a comparison between them. It will attempt to further provide statistical significances among reasons and other variables.

3.    To ascertain any patterns of understanding about a particular space

This objective aims to provide a detailed understanding of the Forum space through the different type of activities and mediums being used in the space by participants. Since the study is primarily interested in interpreting individual multi-locational workers use of space, recognising emerging themes is important.

## 3.2.  Research Strategy

The philosophical assumptions underlying every study are important for clarifying research design, evidence required and the methods which will be used to interpret in order to conduct a good investigation (Easterby-Smith et al., 2012). Awareness of the philosophical assumptions can increase the quality of

any study; hence this section will examine some of the philosophical aspects of the field of organisational space.

In the social sciences –there is a clear preference for a consciousness and experience-orientated, interpretive view of ontology and epistemology (Alvesson & Sköldberg, 2009; Burrell & Morgan, 1979). Fundamentally, ontology questions 'reality' and epistemology is the relationship between that 'reality and the researcher' (Guba & Lincoln, 1994). In the social sciences it is generally maintained that reality is socially constructed and often has a subjective epistemological standing (Alvesson & Sköldberg, 2009). Therefore the purpose of research becomes about the exploration of how these 'social constructions' occur. For example, in this study, the goal is to research multi-locational workers and their practices in public organisational spaces. In the literature it is argued that space and spatial characteristics are both a medium and outcome of actions they recursively organise. Experiencing the space around us and influencing our interactions with it, space, in turn, plays a role in recreating and changing our social being, enabling possibilities of further social construction within it (Rosen et al., 1990).

The researcher aims to interpret and understand this phenomenon through inductive reasoning approaches but theoretical preconceptions will not be rejected. The design of this research project provides a possibility to navigate between current theory and empirical facts for data interpretation and analysis, where both are successively re-interpreted in light of each other. This approach is resonant of 'abduction' (Peirce, 1992); which will be considered in more detail in later sections of this chapter. Consequently, the  researcher believes this study is located within the 'interpretive paradigm' as informed by Burrell and Morgan (1979) and supported by other theorists in the 'socio-spatial school' such as Dale and Burrell (2008) and Taylor and Spicer (2007) as well as Van Marrewijk and Yanow (2010).

**Table 3.2: Methodological Conceptions of Space**

| | Definition of Space | Key Analytical concepts | Approaches | Preferred Methods | Key Studies |
|---|---|---|---|---|---|
| **Space as a distance** | Measurable units between points | Proxemics<br><br>Ergonomics<br><br>Facts and figures | Network Analysis<br><br>Programming (ie. Space Syntax Analysis) | Quantitative distances and diagrams | Hatch (1987)<br><br>Penn et al. (1999)<br><br>Brookes and Kaplan (1972) |
| **Space as materialised Relations** | Space as representation of relations (ie. Power or identity) | Workspace design<br><br>Organisational Architecture | Labour Process<br><br>Foucauldian OT | Qualitative, Case Studies, mainly interviews and participant observation | Dale (2005)<br><br>Dovey (2008)<br><br>Foucault (1995)<br><br>Bauman and Lyon (2013) |
| **Space as Experience** | Space as a Social Construction, the understanding and interpretation of space | Symbols<br><br>Aesthetics<br><br>Actors<br><br>Interpretation | Organisational Culture<br><br>Social Productions of Space | Qualitative, mainly non-participant observation and interviews,<br><br>Visual Data | Oldham et al. (1976)<br><br>Van Marrewijk and Yanow (2010)<br><br>Gagliardi (1990)<br><br>Vilnai-Yavetz et al. (2005) |

Source: Adapted from Taylor and Spicer (2007)

The interpretive paradigm is driven by a concern to understand the world 'as it is'; to understand the ultimate nature of the social world at the level of subjective experience (Burrell & Morgan, 1979). In the present study, the 'world' of interest is that which multi-locational workers conduct their work in, and the aim of the study is to understand the fundamental nature of this phenomenon through the users' words and actions. There are three major strands from which organisational space can be interpreted:

i. Space as a distance
ii. Space as materialised relations
iii. Space as Experience

Table 3.2, summarises these and their methodological conceptions (Taylor & Spicer, 2007).

Each strand is founded upon different assumptions concerning the nature of space and thus is inclined to study different dimensions. Recalling from the literature review chapter these three strands can be simplified into two categories, the body and the mind, as depicted in Table 3.3. Interpretations of space as a distance tend to highlight the empirically observable 'physicality' of organisational spaces. For example, the geographic location of buildings or departments within the building and even the dimensions the body is observed and can pass through and between certain points (Hatch, 1987). Whereas, in conceptualisations of space as a materialisation of relations, predominantly power relations the physicality draws attention to the structural conditions which shape particular spatial dynamics. For example research conducted by Dale (2005) and Dovey (2008) highlights the latent power struggles in planning, design and potentially 'dominating' design of a given space. The third strand of conceptualising space as 'experience' champions the symbolic and imaginary dimensions of how people interpret the spaces which they occupy. Central to this are studies which focus on the individual actor or actants in question (Oldham & Fried, 1987) and sometimes the cognitive experience of the body in a given space (Barker, 1968; Gibson, 1979). It is recognised here, that these three strands have underlying approaches and each accentuate important issues within the field of organisational space hence this study aims to incorporate an integrated attitude of these three strands. Thereby, Table 3.3 additionally, illustrates

this project's objectives as they relate to the previous conceptions of organisational space.

**Table 3.3: Previous Conceptions and Curent Project Objectives**

| | Previous Conceptions | Project Objectives | | |
| --- | --- | --- | --- | --- |
| | | Perceptions of a particular space | Reasons for working in a public space | Patterns of Understanding |
| Body | Space as a distance | | | ✓ |
| | Space as materialised Relations | | ✓ | ✓ |
| Mind | Space as Experience | ✓ | ✓ | |

From Table 3.3, one can see how the study's objectives relate to the previous conceptions of organisational space. Investigating multi-locational workers and their 'current perceptions of a specific space' will centre on the strand of space as experience. In other words, the meaning which is placed on spaces, the 'imaginary' dimension (Taylor & Spicer, 2007). Given the two previous objectives, this added dimension will provide awareness of how a space is experienced through cultural and sensory artefacts people encounter in and of their workspaces (Gagliardi, 1990; Strati, 1992).

The second objective: 'to determine, [multi-locational workers], reasons for working in open-plan spaces' calls for a combination of conceptualisations of space as materialised relations and as experience, while also considering elements of the

'physicality' of the space. Previous studies tend to contrast between the type of organisational spaces, 'open-plan' vs 'traditional' or 'pre-occupancy vs post' spaces (Zalesny & Farace, 1987). Conventionally, the variables here are the relationships between the people and the space and considerations of how the space is organised and in turn organises people (Van Marrewijk & Yanow, 2010). In order to achieve the objective of determining the 'reasons for working in public versus private spaces', the researcher will employ approaches from all three strands of conceptualisations.

To 'ascertain any patterns of understanding about a particular space' requires a combination of conceptualising space as a distance and as materialised relations. Studies in this tradition often consider how geographic location, spatial layout and décor encourage certain patterns of behaviour, mostly based on variables such as interactions or communications among businesses, departments and people (Duffy, 1997; Penn et al., 1999; Peponis et al., 2007). Of course, of relevance to this study the 'people' value is of most importance. An underlying assumption of such studies is the primacy of 'power over' design rather than 'power to' construct one's own workspace and hence here it is important to consider space as a materialisation of power relations (Dovey, 2008). Therefore, a combination of approaches can be used to satisfy the objective of 'patterns of understanding'.

An integrated attitude of these approaches is reminiscent of Lefebvre's (1991) 'spatial triad': spatial practice , representations of space and representational space also referred to as perceived, conceived and lived spaces respectively, which was reflected upon in the previous chapter. The 'perceived' aspect of Lefebvre's triad can be related to the movement and physicality of conceptualising 'space as a distance', while 'conceived' spaces emphasize the materialisation of space, particularly power; how spaces can be intentionally planned and managed to enforce certain organisational goals. Furthermore, the 'lived' aspect can be broadly associated with the human conscious 'experiences' which people encounter in their workspaces.

This integrated framework, which is informed by Taylor and Spicer (2007) can be applied to this study. Consequently, the objectives of the study can be approached from a holistic perspective of perceived, conceived and lived spaces which provide approaches to exploring organisational space empirically. Given that the approaches

to conceptualising this study's objectives have been discussed, the following section will examine the specific methods which will be employed.

## 3.3. Methods

Considering Table 3.2, the different conceptualisations of space typically have a variety of approaches and hence methods in obtaining and analysing their findings. As discussed in the previous section, this study is not seeking to champion one approach above others and the same can be deduced about the methods which will be exercised. In order to apply Lefebvre's (1991) spatial triad and Soja's (1996) notion of 'trialectics of spatiality', a combination of quantitative and qualitative approaches to methods will be used.

### 3.3.1. Mixed Methods

'Mixed methods research' is a term often used to describe studies which integrate quantitative and qualitative research within a single project (Bryman & Bell, 2007). Mixed methods involves the 'mixing' of quantitative and qualitative research methods to generate data which is 'mutually illuminating' (Bryman, 2007, p. 21). This type of approach to methods conquers with previous studies in the field of organisational space.

Historically, the majority of research was informed by quantitative methods of retrieving data to support hypothesis such as 'space syntax methods'. "Space syntax is a set of techniques for the representation, quantification and interpretation of spatial configuration in buildings and settlements" explain Hillier et al (1987, p. 363). Originally, methods such as these where designed to help architects simulate the possible consequences of their design (see: Turner et al., 2001). Nowadays, this type of quantitative heavy approach still remains in research within the disciplines of architecture and experimental psychology. However, with the rise of interest in qualitative methods, many have turned to a 'multi-layered methodological approach' or mixed methods to capture the character, atmosphere and work cultures of organisations as well as their spatial configuration (Sailer et al., 2010).

The main reasons for employing mixed methods come as a result of capitalising upon the strengths of quantitative and qualitative methods and somewhat offsetting

their weaknesses (Bryman & Bell, 2007). "With the aim of either providing a more complete picture or enhancing coverage" as Barbour (2008, p. 151) explains are advantages of mixed methods. This process of capturing and analysing information or data about the same phenomenon, which in this study is multi-locational workers and their working practices in public organisational spaces, is referred to as 'triangulation' (Maylor et al., 2005). Furthermore, the Greene et al. (1989, p. 259) scheme identifies a total of five justifications for combining quantitative and qualitative research. "They found the purposes of mixed methods studies to be based on seeking convergence (triangulation), examining different facets of a phenomenon (complementarity), using the methods sequentially (development). Discovering paradox and fresh perspectives (initiation), and adding breadth and scope to a project (expansion)" explains Creswell (2009, p. 225). These five justifications, allow data from one method to be cross-checked against another method associated with a different research strategy. For example, Peponis et al. (2007) employed secondary qualitative derived data to complement their quantitative results to propose that space should be considered as an 'intelligible structure' rather than in terms of its accessibility alone. Concurrently, Backhouse and Drew (1992) found that statistically based quantitative approaches such as those employed by Hillier and Hanson (1984) were limited in their analysis of human behaviour, particularly interactions and other 'socially organised practices' remained unobserved. They concluded that a mixed-method approach can provide potential for in-depth spatial analysis of 'actual' as oppose to 'presumptive' usage of organisational space. In fact, since Hillier[17] (1984) first wrote about spatial analysis in the 1980s he has since published several papers encouraging an integration of social theory and the built environment (Hillier, 2008).

The recent increase in empirical testing of space in workplace environments and the individual human, particularly in organisational theory; where this study is found, has typically favoured to research the individual's vire in the occurring phenomenon.

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[17] Bill Hiller is currently a Professor of Architectural and Urban Morphology at the University of London where he holds the position of Chairman at Bartlett School of Graduate Studies. Additionally he is the Director of the Space Syntax Laboratory at University College London (UCL). Professor Hillier manages a research programme that is responsible for the development and application of accurate methods of analysing spatial configurations and built form of buildings and cities. Hillier (1984) believes in a process whereby a theoretical description is required to understand the functionality of a building. Additionally, descriptive theory is achieved "through the analysis of spatial form in buildings" (p.61) which results in a "more powerful scientific understanding of function".

Therefore, the following section will introduce the case study approach and conclude with the specific quantitative and qualitative methods which will be employed in this study.

### 3.3.2. Case Study

A case study is defined as 'an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident' (Yin, 2003, p. 13). It is argued that case studies are useful in emphasizing behaviour which can only be fully understood in the context of wider influences within or on the organisation (Hartley, 2004). The emphasis placed on conducting a study in depth within its context constitutes the primary reason for adopting the case study approach.

This is a single case study: the University of Exeter, conducted at several case sites on campus with a primary focus on The Forum. While, single case studies are sometimes prejudiced for their lack of rigor, generalizability and other shortcomings Yin (2003, p. 87 – 90) provides a justification, given that the particular case corresponds to one of five rationales as summarised in Table 3.4:

**Table 3.4: Yin's (2003) Five Rationales**

| | | |
|---|---|---|
| i. | The Critical Case | The case can act as a means of testing an established theory in order to either challenge it or expand it. |
| ii. | The Extreme or Unique Case | Often used in some forms of clinical psychology, where no two injuries are the same or are very rare |
| iii. | The Representative or Typical Case | Regularly used to 'represent' a particular phenomenon where the findings can be potentially applied to a wider group of individuals or organizations |
| iv. | The Revelatory Case | The revelatory case observes and analyses a phenomenon that has been inaccessible to researchers in the past and therefore contributes something completely new |
| v. | The Longitudinal Case | Examines the same case on two or more separate occasions. |

Source: Yin (2003)

A case study approach is suitable to this research because public-communal working spaces are under-researched. A case study approach can provide the depth and focus to answering the research questions (Flyvbjerg, 2006). This case study is justified according to Yin's (2003) rationale of a 'representative or typical case' where a particular phenomenon is studied and the resulting findings can 'represent' or be potentially applied to a wider group of individuals (multi-locational workers) or organisations (other University spaces). Furthermore, the literature suggests that the field is mainly saturated with attitude surveys and thereby calls for the need of empirical case studies in the field of organisational space in general (Sundstrom et al., 1982; Zhang, 2009). More specifically Brown et al. (2010, p. 544) conclude their research regarding the creativity and the creative identities of architects as effects of power by saying "future research needs to focus on the micro-practices of everyday organizational life". More recently, Lansdale et al. (2011) used a case study approach to determine the impact of open office designs in a redesigned spatial environment of researchers.

Given the methodological approach to mixed-methods discussed in the preceding section, this study is best described as a mixed-method case study approach. In earlier discussions of other studies, their case study designs point to an already embedded analysis of mixed methods data. This research design will enable the researcher to address broader and more complicated research questions (Yin, 2003).

## 3.4. Design and Execution of Methods

In discussing the justification of a mixed-methods case study this section will introduce the chosen organisation and the primary case site. Additionally, the design and execution of the specific qualitative and quantitative methods which were employed will be described in the subsequent sections.

### 3.4.1. The Organisation: The University of Exeter

The organisation which has been chosen to be studied is the University of Exeter. Recalling from the literature review chapter, public organisational spaces such as university coffee shops or libraries often remain unobserved in the field of

organisational space. While research has been conduct in these spaces, focus is on education or infrastructure regularly takes precedence over spatial analysis or an integration of both (Carlson, 2009). For these reasons the University of Exeter located in the county of Devon in the UK, is the chosen organisation for this study. This section provides an overview of the University as well as the primary site. The following information was retrieved and summarised as part of secondary data collection.

The University of Exeter conglomerates world class research with excellent student satisfaction at its campuses in Exeter and Cornwall. Established in 1955, today the university boasts 18,000 students from 130 different counties. The University of Exeter is ranked amongst the UK's top 10 universities in the Higher Education league tables produced by *The Times, The Guardian* and *The Sunday Times* and ranked amongst the world's top 200 universities in the QS and Times Higher Education rankings. In the academic Year 2012 / 2013 Exeter was awarded the Sunday Times 'University of the Year' prize (source: UOE, 2013). During the same academic year, the university began a 'Planning Process' which focused on 6 key practices, one of which was the improvement and development of its infrastructure (UOE, 2012/13). On May 2nd, 2012, 'the Forum' was officially opened by Her Majesty the Queen.

### 3.4.2. The Forum

The Forum is the most ambitious and challenging project within the University of Exeter's infrastructure development programme to date. The new £48 million centrepiece building found at the heart of the campus is the primary site of this case study (UOE-Forum, 2013). A state of the art development and a spectacular new hub for students, the Forum in the Exeter University's campus, is a £48 million pound centrepiece, designed by Wilkinson Eyre Architects and built by the Sir Albert McAlpine Company. The construction began in March 2010 and construction was concluded in May 2012, making the Forum, the heart of the social and academic life of the University.  The official opening was performed by Her Majesty the Queen on 2 May 2012.  The Forum can be described as an environmentally friendly building and an iconic sustainable project, which was funded through loans, fundraising, lease premiums and income from joint ventures; however it is important to note that

no Government funding was used. The starting point for the design and the construction of the Forum project was the natural features of Exeter's famously hilly Streatham campus.

**Plate 3.1: View of the Forum from the Main Entrance East Balcony**



Source: www.e-architect.co.uk

The building provides a mixture of both formal and informal performance spaces and connects several facilities under one roof (see: Plate 3.1 and Plate 3.2). The construction materials used for the building have been reused and recycled. The building fabric and glazing used delivers a serious reduction in energy and $CO_2$ emissions. In order to facilitate a sustainable waste strategy, recycling bins have been placed in strategic locations, around the Forum building.

**Plate 3.2: Reversed view, from the alternative Entrance West Balcony**



Source: www.exeter.ac.uk

The central and most impressive piece of the project is the gridshell roof. A landscaped entrance Piazza defines a new front door to the campus that provides students with high quality open space for relaxation at the natural centre of the campus.

At ground level, the "green corridor" runs through the building creating a covered high street with a bank, shops, cafes, breakfast spaces and access to the library, students services centre and auditorium.  The upper level gives access to the Great Hall, student guild and a new suite of advanced learning labs and seminar spaces.

**Figure 3.1: Floor Plan of the Forum Ground Floor**
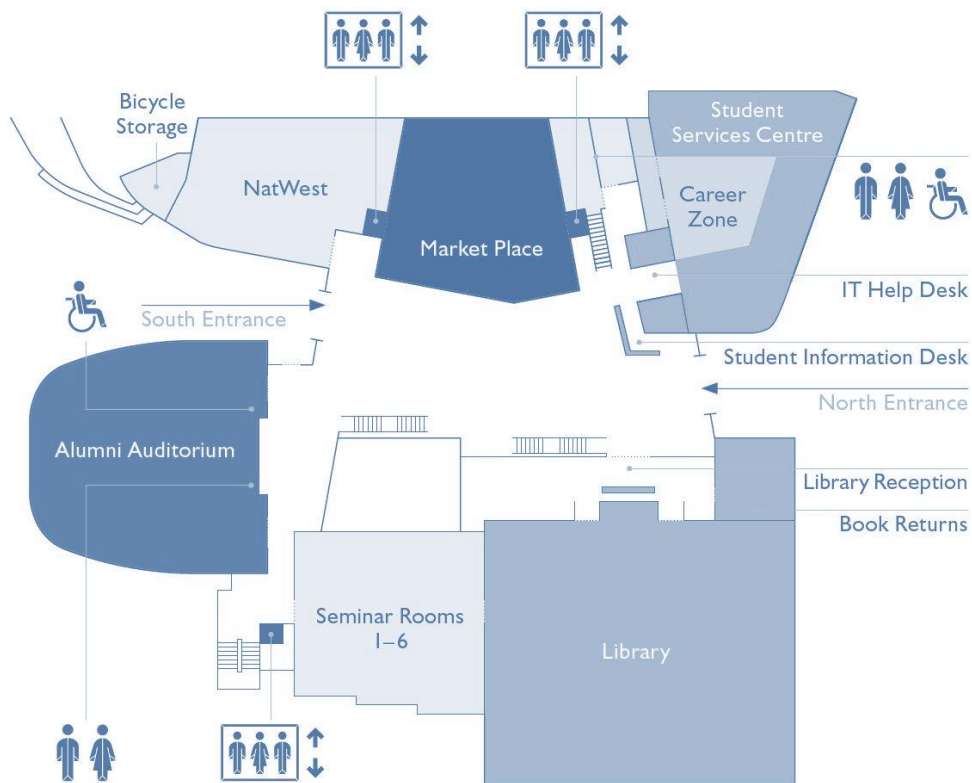


Source: Adapted from Forum Visitor Map

The new student services centre on the ground floor (Figure 3.1), takes a prominent position within the new building, broadening and enhancing the range and availability of pastoral services the university offers. The centre, one of the most important elements of the Forum, provides a first call for students to receive friendly, professional and efficient support and guidance which can all be managed from a queue managing e-kiosks systems and a team of student information assistants.

The centre includes technology rich learning spaces, a soft seating area with IT touch down points, interview rooms and various flexible pods, a training seminar room and payment facilities.

The New Career Zone is a central advice point where students can find more information on graduate opportunities, volunteering and work experience. The New modern fresh learning spaces form an integral part of day-to-day life within the Forum and are equipped with the latest innovative technology. More student spaces in the so called "pedestrians street" covered by high speed WiFi are now available and students can use their own laptops.

An impressive smooth curve near the entrance of the building rises one storey taking one to the upper floor where the newly built state of the art 400 seat auditorium is located with decorated specially commissioned art and, landscaped open spaces.

The 400 seat Alumni Auditorium, with a panoramic window provides the largest teaching space in the university and offers spectacular views out to landscaped lawns. The seating lay out in the auditorium enables people to turn and face each other encouraging and facilitating group discussions and team work. At the same time, all seats are networked.

**Figure 3.2: Floor Plan of Forum 1ˢᵗ Floor**
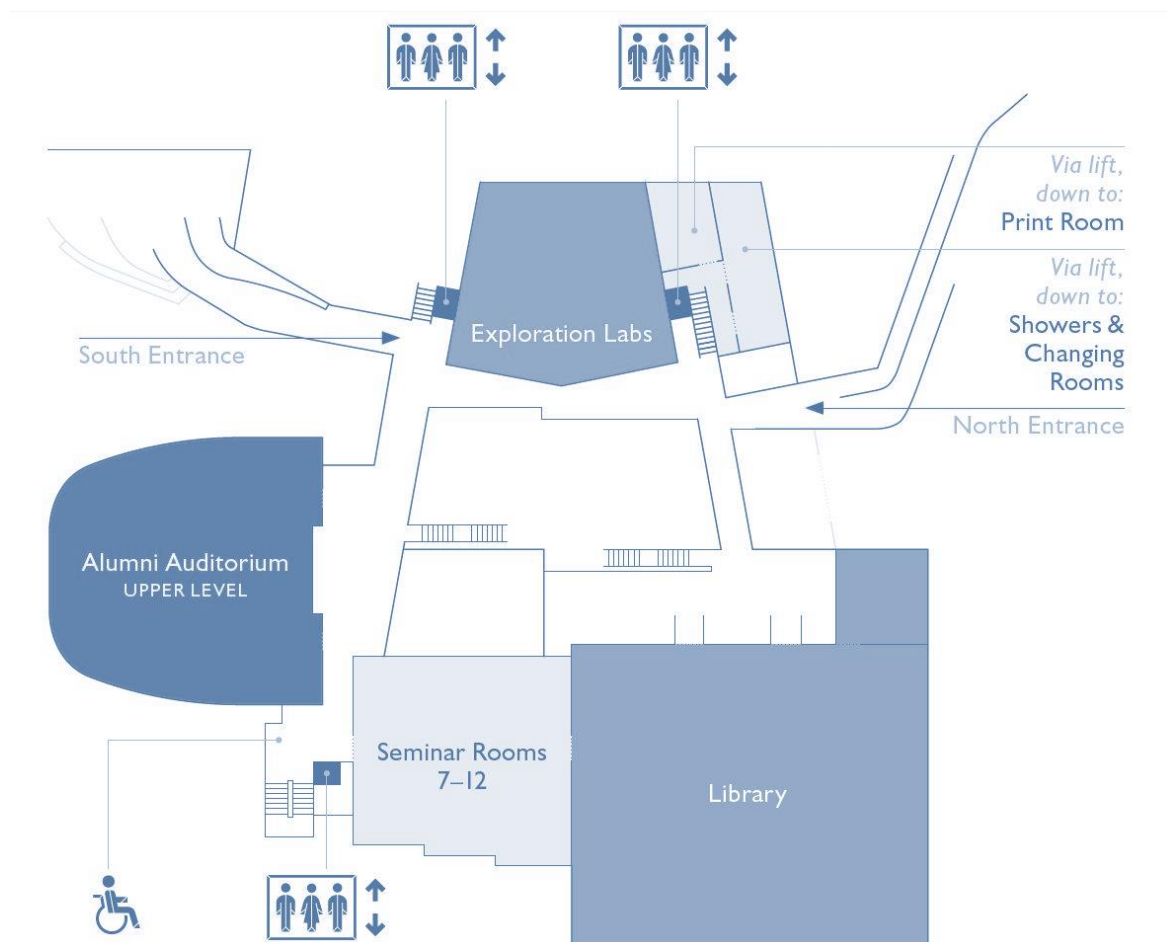


Source: Adapted from Forum Visitor Map

The two exploration labs are also located on the first floor (see: Figure 3.2). The first one features a 60 seat exploration lab with 60 tablet PCs and video conferencing

facilities, while the second one provides 10 surface tables designed to encourage and assist group learning. These are the first of their type to be found in any UK university. Twelve seminar rooms located in the new seminar block can be used for group or quiet study. The refurbished library has 750 study seats increasing to 1000 during exams over 100 network computers and high specification print/copy/scam devices. Library is open around the clock. New retail services are now located in the ground floor, available for students, staff and visitors. The outlets provide affordable and easily accessible local sourced goods. Coffee facilities are provided in the first floor by Costa Coffee, while the Terrace Restaurant features an open plan kitchen and service area. Banking facilities are also available in the Forum down in the ground floor.

The Market Place the largest retail outlet on the campus, offers a wide variety of drinks, snacks, and fresh fruits and vegetables. In addition, an online book retail service is also found in the market place and allows customers to order books.

The Forum is a key milestone in the University of Exeter's £450m capital investment programme, provides a new spectacular entrance to the University which has achieved its long term goal of entering the UK's top ten universities (UOE-Forum, 2013).

### 3.4.3. Qualitative: Observation and Interviews

Qualitative type of methods offer a means of exploring and understanding the meaning individuals or groups attribute to a social or human problem, it involves a process of interpreting the data often collected while the participants is in the setting in question (Creswell, 2009). This study is interested primarily in people's experiences and motivations for working in the Forum or other open-plan public areas on campus. With this in mind, the initial stage of data collection consisted of a 6 week period of observation from December 2012 to February 2013. During May to June 2013, the researcher conducted interviews with 32 participants whilst simultaneously carried out further observation. The following sections discuss the methods of 'non-participant observation' and 'semi-structured interviews', the reasons for implementation, design and execution process the researcher experienced.

**Non-Participant Observation**

This type of observation refers to the observer, myself, monitoring people in their organisational setting, in this study: the Forum (Bryman, 2004). In the process of data collection through observation Gold (1958) identifies the researcher's role as an observer into a range of four roles depicted in Figure 3.3.

**Figure 3.3: The Researcher's Role on the Observation Scale**

**Complete Participant** ← | Participant -as- Observer | → | Observer -as- Participant | → **Complete Observer**
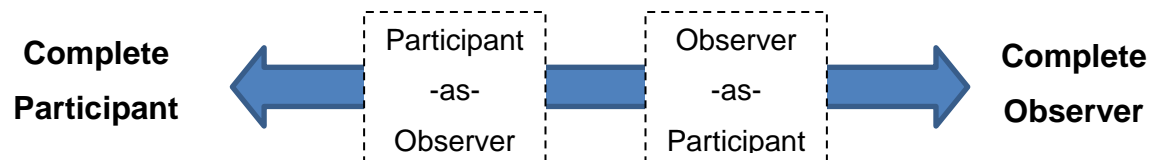
Source: Adapted from Gold (1958)

Complete observer or Non-participant observation as it is often referred to, is not as common as complete participant or participant observation in the current literature, unless it is covert or contrived observation. Participant observation is very common among larger studies conducted over different periods usually interested in pre and post occupancy of organisational buildings (Zhang, 2009). Additionally, participant observation regularly informs enriched ethnographic studies, where the researcher participates in the organisation as a member of that organisation (Bryman & Bell, 2007). In this study, taking part in participants 'work' was not feasible because the type of work conducted in the Forum differs from person to person. Non-participant observation also allowed for more flexibility in the 'observation schedule' and location. While the Forum is an open public space, it is very large (approx.: 9000m$^2$) and there is no one vantage point from which observation can occur. This type of observation is often criticised for the lack of 'informed consent' from everyone being observed at this stage of the data collection (Maylor et al., 2005). To offset this shortcoming, the researcher received informed consent from the Forum Manager. Furthermore, the researcher completed work of her own, throughout the observation process, even though, observation notes were a priority. In this way, the researcher was taking part in participating in the act of creating a workspace, similar to respondents but not directly involved in any work others were conducting.

One of the main advantages and reasons for conducting observations was to discover unexpected topics or issues that can be investigated in greater detail which affords the data collection process a higher level of flexibility (see Appendix 4: for

examples). The first week of observation involved a great deal of movement on the researcher's part to find key observation points where large parts of area were visible. The end result was two areas on the ground floor and two areas on the first floor which in total provided a vantage point of every corner in the Forum. Observations were recorded in a note form during the day, some evenings and some weekends, as the building and the library are open 24 hours a day seven days a week. During the later hours the only services available were those in the library and were generally used by students of the university. However, it was important to 'observe' different time frames of the day as well as the academic year.

It was suggested in the ethics report before the beginning of the data collection phase that if people were to question the researcher's intentions the researcher would reveal her role and the project's objectives and methods. While in practice this did occur it was during another stage of the process, the 'interview' stage, which will be discussed further in the next section.

## Semi-Structured Interviews

Semi-structured interviewing, are one type of qualitative interview and forms one of the principle means of data collection in this study. It is argued that semi-structured interviewing is one of the most flexible methods in existence and it has the ability to concentrate on focussed questions about life within organisations (King, 2004). Generally, the interviewer chooses a rough set of questions on a particular topic to ask the interviewee, this method of eliciting data is the most common in the literature of organisation space and when conducting research on other topics as well. For this reason it is considered to be one of the most accepted methods by participants while also enjoyable (King, 2004). The open-ended questions provided a guide to initiation and direction of the conversation whilst at the same time afforded the flexibility to explore other vignettes in-depth as the conversation progressed (Bryman & Bell, 2007). As Davies (2007, p. 102) explains: "the aim of any research interview is to create a climate in which the respondent can talk freely and be able to offer the full range of responses that apply".

The chosen interview questions (see: Appendix 1: Interview Questions) were designed based on the observational data as well as informed by the current literature. The first three questions centred around how often people visited and their

reasons for choosing to work in the Forum, as understanding the demographic characteristics of participants is important in determining patterns of behaviour and spatial use. Questions 4, 5 and 6 were based on retrieving information about the individual's preference of that space or their ideal space. This was an important step in getting the participants to begin talk about their spatial preferences and compare them to the Forum's characteristics. Question 7 and 8 asked participants about their own observations about other people working around them. The final two questions if they had not been addressed throughout the interview focused on the participant's feelings and emotions about the Forum and their general feeling of working in the space. These are the key questions in determining participants' perceptions regarding 'space as materialised relations' and 'experience'. Finally, before ending the interview, the researcher asked if the respondent had any questions of their own or further topics they wanted to discuss. Additionally, the researcher requested the interviewee if they would be interested in being contacted again for an additional interview.

The first five respondents formed part of the pilot for the interview questions. The researcher found that the questions were sufficient but one participant gave closed end responses. Therefore, the researcher added some 'prompt' questions which allowed conversations to flow.

## **Interview Sampling: Selecting Respondents**

A sample is a representative group of respondents which are drawn from a given population of people (Ryan, 1995). This representative group of individuals are selected and studied by the researcher for the purpose of drawing conclusions about the population of the cases (Kent, 1999). In this study, the population is deemed as the mobile or multi-locational worker who chooses to work in open plan public-communal spaces. The representative group of respondents, hence the sample, are those who work in the Forum's open areas.

There are four broad categories of sampling techniques: i) Probability, ii) Purposive, iii) Convenience and iv) Mixed method sampling, which can be found within the social and behavioural sciences (Teddlie & Yu, 2007). It is argued that qualitative research techniques typically employ purposive sampling in order to enhance the understanding of an information rich case (Patton, 1990), whereas quantitative

research techniques involve probability sampling to allow statistical inferences to be made (Sandelowski, 2000). Regarding interview sampling, the researcher used a procedure aligned with purposive convenience sampling. This meant selecting individuals based on specific purposes associated with answering the research study's aims (Teddlie & Yu, 2007) and further particular settings, persons, or events were purposely chosen for the important information they can provide that cannot be gathered as well from other choices (Maxwell, 2008). For this study, this meant people who were deemed to be working anywhere within the Forum space.

**Table 3.5: Interview Sample Characteristics**

| Gender | Year of Study | | | | Frequency of Use | | |
|---|---|---|---|---|---|---|---|
| | F/Y1 | Y2 | Y3 | Y4/PG | Daily | Weekly | Occasionally |
| **Male** | 6 | 0 | 3 | 1 | 4 | 4 | 3 |
| **Female** | 12 | 4 | 1 | 3 | 15 | 2 | 4 |

(Source: Author)

As mentioned earlier there were a total of 32 respondents which comprised of students and staff (also see Table 3.5). In selecting the interview respondents a convenience sampling strategy was adopted, which seeks to obtain perceptions from those who are identified as easily accessible and present within the field (Rubin & Babbie, 2007). In this study, respondents were chosen if they were deemed to be working in the Forum. Generally, this meant they had some sort of work they seemed to be conducting at the time the researcher approached them, Table 3.5 depicts some of the samples characteristics according to gender. While, most people were more than willing to speak and be recorded as well, the downside of a convenience sample, means that some demographics cannot be used as comparable variables if there is a large discrepancy between them (as seen by gender[18] in Table 3.5). Some people who were busy at the time identified the researcher at a later time to conduct the interview. Typically, the interviews lasted

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[18] Gender analysis is beyond the scope of this thesis, therefore this is only a minor downside

between 20 - 25 minutes each with a couple reaching up to an hour[19]. It is important to note here that the interviews remained short because participants were indeed conducting work, hence any time spent participating in the interview meant it was time away from their work.

**Documentary Analysis**

It is important to note here a form of the secondary data collection method. Secondary research is a form of study whereby the researcher captures data which may already exists that are relevant to the purposes of this study (Kent, 1999). Documents which are publicly available can act as a source of data for a case study research, as documents can be extremely valuable in supporting evidence from other means (Yin, 2003). Documentary analysis will be not be 'analysed' as pieces of data in their own right, they were used to obtain background information on the organisation and for the researcher to stay informed of the past and current affairs of the Forum during the period of this study. This allows the researcher to be better informed when conducting the interviews and interacting with participants during the data collecting process. Although, it is argued that one of the limitations of this method, is the potential concern of authenticity from mass media outputs, which can potentially result in biased opinions (Bryman & Bell, 2007). However, the purpose of this method is to provide holistic view of the organisational context. The main documents or sources of secondary information are summarised in Table 3.6.

**Table 3.6: Sources and Documents of Secondary Data**

| Author / Organisation | Material / Document |
|---|---|
| **University of Exeter** | Information regarding the history, current student status and publicly available reports |
| **Wilkinson Eyre Architects** | Images and information on the pre and post design process of the building and  building dimensions |
| **Newspapers** | Relevant material regarding the organisation and its infrastructure |
| **Social Media** | General public opinions of the organisation and the Forum |

(Source: Author)

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[19] See Appendix 2: for an example of a transcribed interview

It is important to note here that the researcher remained critical of all the materials obtained from a secondary source, nevertheless the information was useful in sketching an understanding of the organisation and the Forum.

### 3.4.4. Quantitative: Questionnaire

Quantitative type of methods, typically offer a means of testing objective theories by examining the relationship among variables, which can be statistically measured and analysed (Creswell, 2009). Quantitative research is generally objective when compared to the subjectivity which results from qualitative data, this means discovering answers to questions which typically require the application of scientific procedures to satisfy the research objectives (Denzin & Lincoln, 2003).

The most common type of quantitative method for generating primary data is linked to questionnaire surveys (Coles et al., 2013). Some of the main advantages of questionnaires, are that they can potentially capture a great deal of data or information from a small group of people over a short period (Creswell, 2009). The format for employing questionnaires in this study, are administered face-to-face rather than postal or internet based. The main reason for this is attributed to the purpose that the researcher would like to ensure respondents fit the criteria of previous participants; those who are conducting work in the Forum.

Typically, when quantitative research is conducted following qualitative methods it is referred to as a 'sequential' approach to mixed-methods (Creswell, 2009). A reason for this approach is that the researcher wants to explore the phenomenon and expand on current qualitative findings, such as demographic characteristics. This sequence is contrary to the most recent trends of methods employed in the field of organisational space. As mentioned earlier, in the field of organisational space there is a tendency to study space as materialised relations and space as experience rather than simply space as a distance. However, the methodological framework, discussed earlier, incorporates a combination of these three approaches to ensure this remains true there are some characteristics which as the current literature support are better captured through quantitative means. Therefore, while the quantitative approach aims to help research all three of the main objectives, it also provides an avenue for further exploration within the data, particularly users'

perceptions of the Forum space. More precisely, this method will produce results for research question 2.iii, namely whether there are any statistical significance between these areas and other variables in the study It is maintained that a combination of results from both qualitative and quantitative methods will provide further insights into the case study, through an examination of conversations in participant interviews and emerging patterns in the participants' questionnaire responses.

In designing the questionnaire (see: Appendix 3: Questionnaire) the researcher included some similar questions from the interviews, such as visiting frequencies and area where the questionnaire took place. Additional questions were informed by the interview data, such as question 14 (feelings of community or individuality). In order to capture an individual's perception on many variables, the researcher used Likert Scales. A summate rating scale such as the Likert Scale format, is formed by "allocating numerical to ordinal response categories for each aspect of the item being measured" explains Kent (1999, p. 41). The 5-point Likert scale is aimed at eliciting information about attitude and behaviour, similar to Donald's (1994b) study. Questions 15, 17 – 20 were Likert scale questions, which aimed at determining the participant's likelihood, agreement or importance of the Forum space. Furthermore, the questionnaire offered some open ended questions (Q16 and Q21), as well as offering the opportunity for individuals to 'explain why' they chose a certain response.

Given the time limitations and observational stage, the researcher deemed it useful to deploy the questionnaire electronically rather than on paper. Early in the observational process, the researcher noticed other people conducting surveys with the use of an IPad, and respondents seemed pleased with this method. Therefore, the researcher used the service from freeonlinesurveys.com to produce an electronic copy of the questionnaire. On the days the researcher was collecting data, there were three IPads and a laptop which were used to collect the data. This was a particularly useful part of the process of data collection. Furthermore, the data collected was saved online and was downloaded at the end directly into Excel and then into SPSS. Additionally, the electronic element meant that participants had to complete the answer to every question before progressing, which meant there were no missing values.

**Questionnaire Sampling: Selecting Respondents**

The questionnaire is designed to support the data already collected. It is aimed at capturing a larger, fuller and richer picture of the 'Forum Worker'. Following the semi-structured interviews, the researcher wanted to capture a bigger data set, therefore employed the questionnaire.

**Table 3.7: Questionnaire Sample Characteristics**

| Gender | Year of Study | | | | | Frequency of Use | | | |
|---|---|---|---|---|---|---|---|---|---|
| | F/Y1 | Y2 | Y3 | Y4 | PG | Daily | Weekly | Monthly | Rarely |
| **Male** | 13 | 12 | 12 | 2 | 11 | 34 | 6 | 1 | 3 |
| **Female** | 6 | 15 | 11 | 5 | 6 | 31 | 13 | 2 | 6 |

(Source: Author's Fieldwork)

Convenience sampling techniques were used in selecting respondents for the questionnaire. Convenience sampling or availability sampling is one of the most frequently used techniques in research, in which respondents are chosen based on their accessibility and presence within the field (Rubin & Babbie, 2007).A sample of 102 respondents was chosen, from different areas in the Forum (see Table 3.7 for some of their characteristics). People were asked to participate in the questionnaire if they were deemed to be working in any of the Forum areas, generally this meant their focus was on working rather than socialising. The first 10 participants formed part of the pilot. The researcher reviewed the responses and concluded that all the questionnaires had been answered with accuracy and consistency; therefore they were included in the overall data set

## 3.5.    Data Analysis

This section of this chapter will discuss the ways in which data in this study has been analysed and why such an approach has been chosen. This section will focus on the

data gathered from interview and questionnaire methods, since they are the principle data sets of this study.

### 3.5.1. Thematic Analysis

Qualitative thematic analysis approach has been taken to analysing the interview data. This is a common approach to analysing qualitative data. It is a method by which themes or patterns develop with the data set (Braun & Clarke, 2006). It is recommended by Ryan and Bernard (2000) when searching for themes and patterns in the interview transcripts to consider the following:

a) Repetitions: Topics that recur again and again
b) Indigenous topologies or categories: local expressions that are either unfamiliar or are used in an unfamiliar way
c) Metaphors and Analogies: the ways in which participants represent their thoughts in terms of metaphors or analogies
d) Transitions: the ways in which topics shift in transcripts
e) Similarities and Differences: exploring how respondents might discuss a topic in different ways
f) Linguistic connectors: examining the use of words like 'because' or 'since' because such words point to causal connections in the mind of the participant
g) Missing Data: reflecting on information which was not mentioned
h) Theory-related material: using social scientific concepts are starting points for patterns or themes.

Additionally, Braun and Clarke (2006) warn that because something is repeated several times it does not warrant being considered a theme. They recommend thematic analysis is seen recursive process, one which is reflected upon throughout the process of analysing the data.

Thematic analysis offers itself to providing a rich thematic account of the entire data set and therefore is a useful approach when exploring novel or limited research areas such as organisational space (Braun & Clarke, 2006).

### 3.5.2. Statistical Analysis

Following the distribution of the questionnaire, the researcher employed a statistical analysis to process the questionnaires. Statistical tests determine if the probability of

the results is due to chance and conclude whether the data set can be said to be statistically significant or insignificant (Finn et al., 2000). In the case of significance the sample correlation can be further used a generalizable variable of the whole population. There are two main types of statistical analysis: parametric and non-parametric statistical techniques. In social science research and as is common in the current limited available organisational space studies, measurable variables are not normally distributed (Pallant, 2005). Therefore, it was judged that non-parametric tests would be the most appropriate. Furthermore, this decision was confirmed as the data did not adhere to basic conditions for parametric testing set out by Bryman and Cramer (2005, p. 144):

> "the level or scale of measurement is of equal interval or ratio scaling, that is, more than ordinal;
>
> the distribution of the population scores is normal; and
>
> the variances of both variables are equal or homogeneous."

Preliminary data processing revealed that the majority of the data was not normally distributed. Therefore, non-parametric tests would be better suited for analysing the current data set, as the non-parametric techniques do not make assumptions concerning the shape of the distribution (Pallant, 2005).

The researcher will use the Statistical Package for the Social Sciences (SPSS) software programme to conduct the statistical analysis. It is important to note here that probability value will be used for this questionnaire. The level of probability that is adopted in the tests is 0.05. As Finn et al. (2000, p. 217) explain: "if the probability of [$P$] is small, then the result is unlikely to be due to chance i.e. the result in the sample is likely to exist in the population" and they further concur that $P=0.05$ is the widely acceptable level within the social sciences. When a level of $P=0.05$ is assigned this means that an estimate of 5% will be incorrect and thus 95% correct which then can be argued as being statistically significant. The researcher will reject any estimate above this level and accept below, thus: $P<0.05$.

There are various ways of analysing and exhibiting information related to variables, the first stage is univariate analysis, which is carried out to explain how data or individuals are distributed in relation to a single variable, for example gender or area they work in (Bryman & Cramer, 2005). However, this analysis often proves to not

provide suffice significance between variables, hence the researcher will conduct bivariate analysis.  This allows the researcher to analyse two variables at a time and examine their relationship. Furthermore, employing statistical analysis on more than just a pair of variables is called multivariate analysis. The specific non-parametric tests which the researcher has chosen are summarised in Table 3.8.

**Table 3.8: Non-Parametric Tests**

| Type of Analysis | Test Name |
|---|---|
| **Univariate** | • Descriptive Statistics (Mode, Mean, Standard Deviation and Chi Squared) |
| **Bivariate** | • Mann–Whitney U test<br>• Kruskal–Wallis test<br>• Spearman's correlation coefficient ( $r$ )<br>• Ordinal Logistic Regression |
| **Multivariate** | • Two-step cluster analysis |

(Source: Author)

The questionnaire[20] yields an overall total of 47 variables, with a mixture between nominal and ordinal data and Question 8 scale data. Nominal variables are categorical variables which have two or more categories, for example gender has two variables: male and female, but there is no intrinsic ordering to them (Field, 2009). For this study, nominal variables are yielded from Questions: 2 - 5, 9, 11 -14. Whereas ordinal variables have an ordered ranking which come as a result of the chosen Likert Scale questions: 6, 7 10, 15, 17 – 20.

Subsequent to the univariate analysis, the researcher has conducted an initial Mann-Whitney U test with the 'Area' variable across all the relevant variables to determine if a relationship exists between where people have chosen to sit and other variables such as the probability of interactions and likelihood of making new friends. The Mann-Whitney U test determines between the two independent variables if a statistical significance exists. The Kruskal-Wallis test is computed in parallel with the Mann-Whitney U test three or more groups of variables against a dependent

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[20] See Appendix 3: Questionnaire

variable, such as gender, year of study and area against all the remaining relevant variables. This will further determine a statistical significance.

Where the above tests show a statistical significance, the test of Spearman's Rank Order Correlation will be used to reveal the strength of the relationship (Pallant, 2005). These results will be further supported by the analytical technique of Ordinal Logistic Regression in order to further explore ratios and odds of relationships within the data and help research objective 2: to determine multi-locational workers' reasons for working in open-plan spaces.

Establishing between strength of differences and strength of relationships will be further tested using multivariate analysis of Two-Step clustering. Cluster analysis is a data reduction technique which helps reduce the data information into specific groups (Hair, 2009). Therefore, the researcher is able to then use the final solution from a two-step cluster to profile individuals into certain groups (Hair, 2009). Furthermore, the clusters can then be made into new variables which can be tested using the previous bivariate tests to reveal more relationships in the data set.

## 3.6.    Research Ethics

It must be acknowledged that any piece of research needs to have some ethical considerations. For this study, the ethical guidelines have been set out by the University of Exeter. An ethical report was submitted and approved by the Business School Ethics Representative (see Appendix 5: Ethics Report and Confirmation). Furthermore, a more detailed explanation of the research ethics which this study adheres to is deliberated in this section.

Ethical considerations were established before the process of data collection began, it reflected on issues of confidentiality, data protection, security and storage, voluntary participation and awareness of the study's purpose and reporting. Before any data was collected at the Forum, the researcher approached the Forum manager to request permission to record information at the site. Once access was negotiated, the initial stage of observation began. Although, the researcher's position and intent was not hidden, the researcher acted in a discrete manner in order to record people without participating. During this six week period the researcher made

notes of events, patterns of movement and the type of people who used the space in the Forum. In May 2013 it was decided that more information was needed to understand the phenomenon of people working in the Forum. This period of time coincided with the revision and exam time of the academic year at the university which impacted how the space was used. The researcher created information cards which would be handed out to interviewees with information about the study, its methods and contact details which could be used if the participant required more information at a later stage or would like to terminate their role in the study. To this date no one has had a change of mind on their inclusion. Of course informed consent was required before the interview began (and the self-administered questionnaire) and the researcher offered to either record the information by hand or through a recording device, 94% off people were happy to be recorded. Additionally, the researcher has assigned pseudonyms in the transcripts to protect participants' identity. The 'Forum Manager' who agreed to take part in an interview as well was anonymised, it is important to note here, the name is not real and role within the organisation while it is a management position is one of many in managers of the Forum, however the pseudonym was chosen to represent his position in the organisation for simplicity and clarity during analysis in the following chapters. Furthermore, early on in the negotiation process, the decision to not anonymise the organisation itself and the Forum (which is rather unique) was made, as the particular building and location were important for the analysis. This was also agreed with the manager as the study is not seeking to criticise the space but observe, understand and experience it.

## 3.7.   Summary

This chapter presented the research aims and objectives and constructed a research strategy. References were made to previous conceptualisations of space and their different approaches. An integrated framework of the different approaches: space as a distance, as materialised relations and as experience, has been discussed, allowing the objectives of the study to be approached from a holistic perspective of perceived, conceived and lived spaces which provide methods to exploring organisational space empirically. The researcher concluded that a mixed method case study would outline the methodology for this research project.

The University of Exeter's new Forum building was introduced as the main case study site where the main methodological approaches would be employed. Concerning these, secondary and primary data were collected by qualitative and sequentially quantitative techniques of non-participant observation, interviews and a questionnaire. Therefore, the primary research and hence the main tool of the study included a combination of the two main types of research.

Regarding the qualitative research, a purposive sample of 32 people was chosen to take part in semi-structured interviews conducted on site. The interview questions were built upon observational notes and consisted of roughly 10 topical questions which guided the interviewer and responded to a discussion about the Forum space as a working space. Furthermore, the researcher reasoned that a thematic analytical approach would be taken towards this data. Additionally, the researcher is confident that the thematic analysis in addition to more quantitative data could begin to construct a typology of multi-locational workers in a public communal space.

Given this confidence, the researcher has designed and executed a questionnaire, a quantitative research technique. Following the thematic analysis, the questionnaire was designed to retrieve a larger sample of information from the available population which provided a statistical importance and therefore further confidence to the construction of the typology. To achieve a statistical significance of a larger sample (102 respondents) the researcher used the SPSS software programme, to employ three types of statistical analysis: univariate, bivariate and multivariate analysis.

Having discussed and summarised the methodology and methods of this study, the thesis will now turn to an analysis of the qualitative findings from both the observational and interview process.

# 4.  Qualitative Analysis

## 4.1.  Introduction

As discussed in the previous background, literature and methodology chapters, a gap exists in the understanding of multi-locational workers and their use of space in public organisational environments. This is reflected through the limited nature and quantity of discussions on of multi-locational workers and their working practices in public spaces. This chapter aims to build an understanding of a certain type of multi-locational worker in a particular public setting, the 'Forum Worker' at the University Of Exeter (UOE).

To recapitulate, the previous chapter drew on three strands of methodological approaches to analysing space: space as a distance, materialised relations and as an experience. It was recognised that these three strands and their underlying approaches accentuate important issues within the field of organisational space and therefore this study intends to incorporate an integrated attitude of the three. Therefore, this study is best defined as a mixed-method case study approach; this chapter will form the first of two analysis chapters, providing a consideration of both thematic and statistical (Chapter 5) analytical techniques to the data.

This chapter is divided into three key sections and aims to address the research questions associated with objective one, two and three (as shown in Table 1.1). As mentioned previously in chapter three, this study will take a mixed method approach; therefore this chapter as well as the next will provide answers to the majority of the objectives, while achieving elements of the three objectives. The first section: 'The Forum Workers' provides an overall demographic discussion on the sample of participants (research question 1.i). The second begins to build an understanding about the participants' use of the space from observational and interview data (research question 1.ii, 2.i, 2.ii, 3.i and 3.ii), categorised by: What, How, Where and Why? The subsequent section develops the findings from a thematic analytical approach, in order to answer research question 3.iii, through two main themes: unspoken reciprocity and the isolated scholar. The chapter will conclude with the

limitations of the current qualitative findings which provide a starting point for the next stage of quantitative analysis.

## 4.2.    The Forum Workers

> "I've got my cupcakes, my recorder, my questions and I just have to approach people now…" [Field Notes[21]: 20/05/13].

During the months of May to June 2013, semi-structured interviews were conducted with a total of 32 participants. As previously mentioned in Chapter 3, for the first sample of respondents, the researcher chose participants according to their working activities in the Forum. This sample consisted mainly of students and one member of staff[22]. 56% of respondents were either in their foundation or first year of university, the rest were either their 2nd, 3rd or 4th years of their degree. There were also a minority of people who had either finished their primary level of higher education and are currently in their secondary level (ie MSc, PhD) and two who were not directly affiliated with Exeter University (see also Table 4.1).

Table 4.1 additionally shows the type of 'Area' people were occupying at the time of the interview; either at a bench (see: Plate 4.1), sofa (see: Plate 4.2) or desk (see: Plate 4.3) type of table space. Regarding the sofa workspace, unlike most studies (see: Lansdale et al., 2011; Oseland et al., 2011), which consider the 'sofa' areas in a workplace as break out spaces, the 'sofa' area at the Forum is used as an alternative seating for working at when compared to benches and desks which have traditional seats.

While the researcher attempted to obtain an even number of people in a variety of areas, of the people who were interviewed the majority were situated at a 'Bench' table type of space. From the observational notes:

> "Sitting upstairs again today, the movement of people is different, people here and particularly those sitting on the sofas don't get up as much, it seems that it's the same people I saw yesterday" [Field Notes: 20/05/13].

It is evident that there was a higher turnover of people who chose benches when compared to those who worked at sofas, particularly in the downstairs areas. This

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[21] For examples of field notes see Appendix 4: Observational Notes

[22] For more information on participants, such as interview date and pseudonyms see Table 4.1

explains why the majority of the people who were interviewed were situated at benches because they rotated more often.

**Plate 4.1: Bench Workspaces**



(Source: [Left: AD-Decorators, 2012], [Right: JISC Info Net, 2012])

**Plate 4.2: Sofa Workspaces**



(Source: [Left: JISC Info Net], [Right: UOE blog, 2014])

**Plate 4.3: Desk Workspaces**



(Source: Author)

In terms of 'Regularity', 60% of respondents visited the Forum on a daily basis, while 6 people came on a weekly basis and only 3 people monthly. Additionally, 6 of 32 respondents also frequented during the weekend to work at the Forum. Furthermore, only 38% of the respondents came more often because it was 'revision' time; hence the majority of the interviewees were daily users of the Forum regardless of the academic timetable.

While, 50% of the respondents said they spend 8 or more hours working in Forum, the average number of hours spent across all respondents is 7 hours. Additionally, 15 of 32 people preferred to make their 'entrance' in the morning, of these people only one was a weekly user, while the rest visited on a daily basis.

Moreover, the researcher also questioned respondents on their preference regarding the busyness of people or noise levels of the Forum; it emerged that 63% of people actually prefer having 'background noise' while working and no one preferred to work in the Forum when it was 'busy'. Those who preferred it when the Forum was quiet would generally spend less than 8 hours in the Forum, only 4 of these people worked 8 hours or more.

## Table 4.1: Sample Population Summary

| Pseudonym | Date | Area | Gender | Year of Study: | Regularity: Daily / Weekly / Monthly | Weekend | More During Revision | Times Spent (Hours) | Entrance: Morning, Afternoon, Evening | Preferred Time: Busy / Quiet / Background Noise |
|-----------|------|------|--------|----------------|--------------------------------------|---------|---------------------|---------------------|---------------------------------------|------------------------------------------------|
| 1 Costa | 21/05/13 | Desk | F | INTO / F | D | - | - | 6 | A | Q |
| 1 S1 | 21/05/13 | Sofa | F | N/A | D | - | - | 4 | M | BN |
| Abigail | 20/05/13 | Sofa | F | 1 | D | - | x | 8 | A | BN |
| Alicia | 27/05/13 | Bench | F | INTO / F | M | - | x | 4.5 | A | BN / B |
| Amelia | 20/05/13 | Sofa | F | 1 | D | - | x | 8 | A | BN |
| Amy | 20/05/13 | Bench | F | 2 | D | - | - | 9 | M | BN |
| Angela | 27/05/13 | Bench | F | INTO / F | M | x | x | 6 | A | BN / Q |
| Bell | 20/05/13 | Desk | M | 3 | D | x | - | 9 | M | BN |
| Brandon | 21/05/13 | Sofa | F | 2 | D | - | - | 9 | M | BN |
| Buddy | 22/05/13 | Desk | M | 4 | M | x | x | 9 | E | BN |
| Carmen | 20/05/13 | Bench | F | 2 | M | - | x | 8 | Variable | BN |
| Cinderella | 27/05/13 | Sofa | F | INTO / F | D | - | - | 8 | A | Q |
| Edith | 21/05/13 | Desk | F | 4 | D | - | - | 9 | M | BN |
| Ferran | 20/05/13 | Bench | M | 3 | M | - | x | 2 | E | Q |
| Flavia | 20/05/13 | Bench | M | INTO / F | D | - | - | 6 | M | Q |
| Kay | 21/05/13 | Desk | M | INTO / F | W | - | - | 9 | E | BN |
| Kosmo | 21/05/13 | Bench | M | INTO / F | D | x | - | 4 | A | Q |
| Kweli | 23/05/13 | Sofa | F | 1 | D | - | - | 9 | M | BN |
| Lamya | 23/05/13 | Sofa | F | 1 | D | - | - | 9 | M | Q |
| Lucy | 23/05/13 | Bench | F | 2 | D | x | - | 8 | M | BN |
| Pericles | 22/05/13 | Desk | M | Alum | M | - | x | 3 | A | BN |
| Phoebe | 20/05/13 | Bench | F | 1 | D | - | - | 9 | M | BN |
| Prue | 20/05/13 | Bench | F | 1 | D | - | - | 9 | M | BN |
| Rez | 20/05/13 | Bench | F | 1 | M | - | x | 1.5 | M / A | Q |
| Ron | 24/05/13 | Bench | M | 1 | W | - | x | 9 | Any | Q |
| Talise | 24/05/13 | Bench | F | MSc | D | - | - | 9 | M | BN |
| Thalya | 24/05/13 | Bench | F | MSc | D | - | - | 9 | M | Q |
| Vicky | 23/05/13 | Bench | F | 3 | D | - | - | 9 | A | BN |
| Wayne | 21/05/13 | Bench | M | 1 | D | - | x | 8 | M | BN |
| Winnie | 20/05/13 | Bench | F | PhD | W | - | - | 4 | M | Q |
| Xc | 20/05/13 | Desk | M | 3 | W | x | x | 2.5 | E | BN |
| Yahya | 20/05/13 | Desk | M | 1 | W | - | - | 6 | Any | BN |

(Source: Author)

## 4.3.    Forum: What, How, Where and Why?

It is important to review the Forum as it is portrayed in secondary sources before beginning to build an image of the researcher and participants' perceptions. Here, the main source of information is gathered from several publicly available articles and reports. It is significant to note here that this information was collected in order to form a general understanding of the primary case site prior to the data collection commencing. Additionally, the researcher's perceptions, captured through observations in the form of field notes will have primacy over secondary data findings. Therefore, the majority of this section will centre on the participants' insight as this study's primary interest is their experience of their working spaces.

### 4.3.1.   Secondary Document Analysis

This section will provide detail about the Forum as it is portrayed in publically available articles and reports (for more information of the sources and documents see Table 3.5). The information to follow has been divided into information that was provided prior to the Forum's opening and after the Forum was opened to the public.

**Pre-Opening**

In 2010, LDA Design provided a 'Master Plan Framework' for the University of Exeter Campus, this included the future vision of the infrastructure of the University. The Forum's purpose was to provide a "new Campus heart" (p. iv), one of the main reasons for this was to fulfil "important roles such as improving environmental awareness and promoting more sustainable *modes of behaviour*" the report explains (LDA-Design, 2010a, p.iv, emphasis added). Therefore, this supports Dovey's (2008) and Foucault's (1995) modes of thinking about framing behaviours through built spaces.

The Forum, formed part of a £450 million investment programme to update and upgrade the University Campus, as the LDA-Design Report (2010, p.15) explicates:

> "The Forum project is an exciting new development for the heart of Streatham Campus to create an inspirational mix of outside and inside space that brings together:

An extended and re-furbished library

A variety of formal and informal learning spaces

A mixture of frontline student services

A good mix of catering and retail outlets

A landscaped plaza

A new University of Exeter reception".

Additionally, a local newspaper reported that the £48million Forum project was aimed at boosting the local economy as well as improving the student and staff experience while providing more opportunities for more interactions between students and staff as well as locals (Express&Echo.co.uk, 2009).

Certainly, the Forum project had many objectives aimed at those working in and around the area as well as the city of Exeter. It was officially opened by Her Majesty the Queen on 2 May 2012, admittedly a few months after its original schedule.

## **Post-Opening**

2013, was a year of awards presented for the Forum's design and sustainability features. First, The Royal Institute of British Architects (RIBA) announced that the Forum is among the winners of the 2013 RIBA National Awards and later in October, it received international recognition at the World Architecture Festival where it was the winner in Higher Education and Research Category (UOE-Forum, 2013).

Additionally, the University began a Planning Framework of which the reports details its strategies for Finance, Research, Internationalisation, Human Resources, Education and most relevant to this thesis: its Infrastructure. Since, the Forum has been completed, there are no clear plans for it in the document, however, there are recurring statements on the 'openness' of spaces and a move towards more 'flexible working patterns' of the campus in general (UOE[23], 2012/13).

While some research must have been undertaken prior to the Forum's opening, none is available for further analysis. Furthermore, while it is evident that the

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[23] University of Exeter

building has achieved some of its objectives as the above awards demonstrate; further insight into the user's perception of the Forum may provide a better understanding of the success of the Forum space and the Forum worker.

## 4.3.2.  Primary Interview Data Analysis

The interview data consists of conversations with participants regarding the Forum, their activities in the space, where they choose to situate themselves, how they go about their days and most notably their reasons for visiting the Forum (see Appendix 1: Interview Questions). It is important to be reminded here that due to the nature of the semi-structured and informal interviews, they were limited to approximately 20-25 minutes each with only a couple reaching up to an hour because participants were indeed conducting work, hence any time spent participating in the interview meant it was time away from their work.

An overall word frequency is displayed in Figure 4.1. This depicts the most common words throughout the aggregate of interviews. The mention of 'people' demonstrated to be word or topic participants used most frequently, while 'space' was the second popular word and the words 'study', 'library' and 'students' have similar frequencies. The figure portrays an image of what the participants discussed and also suggests that respondents were excited to discuss the topic.

**Figure 4.1: Nvivo Word Frequency**



(Source: Author's Fieldwork)

This section of interview data analysis has been divided into four categories: where, what, how and why. These have been further coded into sub-categories to further provide detail into the participants' perceptions of the Forum.

## What: the activities

> "Today, I've noticed a variety of activities going on, there are those who are working (workers), socialising (socialisers) and those who seem to walk in one side and out the other, I think I'll call them 'temps'." [Field Notes: 10/01/2013].

From the observational field notes, the researcher began to categorise certain types of people, for an easier process to understanding what type of activities the researcher assumed they were conducting at the time. There was discrepancy between users who worked (workers) upstairs and those downstairs and their interactions with the 'socialisers'. However, observations are limited in detail in terms of what activity was going on. The next section, introduces the type of work conducted in the space as it has emerged from participant interviews. It is broadly divided into two categories; studying or revising and socialising. These terms are taken from the participants understanding of different types of activities. For example, when people referred to 'studying' they followed up with statements of essay work or course work, whereas when they spoke about 'revision or revising' they implied note taking and reading. One participant (Mr Kosmo) differentiated between his types of work by explaining that studying required new materials and research and revision was simply remembering. Perhaps this can also be seen as which activity requires more attention and which can be done more absent minded.

- Studying (Essays, Coursework) and Revising (Note taking, reading)

The majority of discussions began with interviewees' reasons for visiting the Forum, in terms of activities which were being conducted. As the two quotes above show, when it came to 'working' in the Forum, the type of work which is being conducted in the space is: studying and revising:

> "I believe it depends on what we work on, for example: revising or an essay" [Interview: Miss Rez].

And,

> "Mostly individual work, for essays or doing revision or just doing reading for seminars…." [Interview: Miss Edith]

The majority of people who are daily users of the forum did not distinguish between the type of work that they were doing and in that space. However, there were a few people who preferred sitting inside the library while working on essays or individual coursework and would choose to work in the forum during revision time, irrespective of whether they were there with a friend or not, as Mr Kosmo pointed out:

> "It really depends.  If I want to go somewhere conducive I go there, but if casual meeting I work down here" [Interview: Mr. Kosmo].

Although, some did prefer when having a 'peer or a friend' working at the same time they would sit in close proximity in areas where they could speak:

> "Exactly, most of the time I come with either my boyfriend who would like to sit next to me or on the balcony or one of my friends" [Interview: Miss Flavia].

Or

> "Eh yeah, I would probably, the best place, because we can also like talk, like together" [Interview: Miss Phoebe]

As is shown in the above statements, it is common that most people working in the Forum, visit with a friend or one other person, irrespective of if they are conducting the same type of activity.

- <u>Socialising</u>

In turn, this leads to the 'socialising' activity which goes on in the Forum and most often the activity that runs parallel to the main activities work; studying and revising. As Mr Kosmo suggests:

> "I suppose their element of socializing is an implied consent for that… If you choose to be visible, and working, you really make ur choices." [Interview: Mr Kosmo].

And Mr Brandon adds:

> "Yeah, you know what, my social life actualy extended by coming and studying here, yeah and I've made so many friends… its what encouraged me to keep coming here" [Interview: Mr Brandon]

Furthermore, Miss Edith concurs, while offering a view of pre and post Forum socialising practices:

"Well before, none of this street was here this was the library and that was the shops across there, so I think with the forum now it feels like it does seem like a lot more space and there's more of like a social hub to it that can come out and have a break from revision whereas before when you were in the library you'd have to walk out somewhere so I'd say its more social now. You know the way you have everything in one place you kind of come out…I know it can be quite social like I know when I come I always call my friends and we'll always come together and you do see other people like on their lunch break like sat out together on the their lunch break having lunch together… so I think people do come in groups even in the library there will be people talking to each other like asking questions you can tell they come together, they go for their break together so yeah I would say it's quite social as well." [Interview: Miss Edith].

From her statement, it becomes apparent that this 'socialising' activity taking place within the Forum is a welcomed change and further supports the argument that the two activities: studying and socialising, are running parallel to each other as the two most common activities taking place within the Forum.

It is important to note here, that while socialising is an important activity taking place within the Forum, discussions on the work type of activities conducted are more central to this thesis. Therefore, the following section will consider 'how' and what medium is used to execute their main activity.

**How: the Mediums**

Observation notes on this topic are narrow, as there are two types of mediums which people in Forum did work: electronically or manually writing on paper. A third type emerged from speaking to participants: verbal communication.

- Electronic (Laptop, tablet)

  "There are a lot of electronic gadgets around, pretty much every one has a laptop and a phone. The majority of people have both electronics and papers visible and interchange between the two to conduct their work. Only a small minority have just papers, they seem to be more relaxed though" [Field Notes: 10/12/2012].

Plate 4.4, shows a typical Forum users' workspace, consisting both electronic, laptop and paper based, notes. Additionally, as can be seen in the photograph, typically most participants would also have their portable phones out as well.

**Plate 4.4: Example of Participants' workspace**
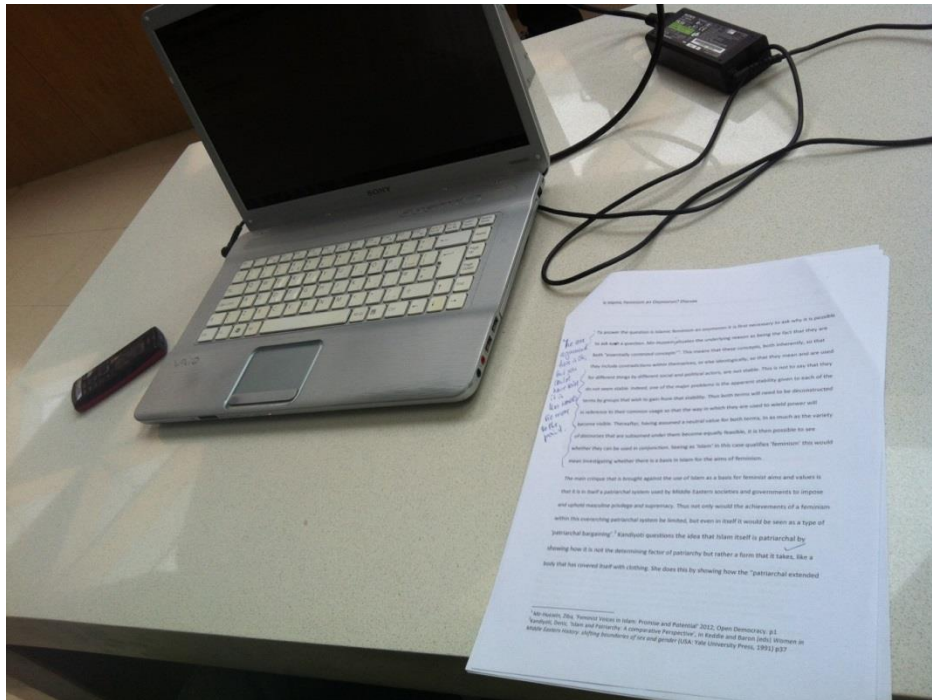


<div align="center">(Source: Author)</div>

Participants did agree that there were laptops everywhere all the time, but when they thought about their own mediums they believed there was more of a balance between electronic and paper based work they did:

> "Well if I'm even working on like paper, I'll be referring to my laptop anyway, I'll be on VLE[24] or something like that" [Interview: Mr Xc]

Therefore, it seems that for some people the type of medium used depended on the type of work being conducted: studying or revising.

- Paper (Printed, Written)

Of course, as can be seen in Plate 4.5 there were a majority of people who did use both laptops and papers but had a preference:

> "Sometimes with my laptop but I prefer working with my papers or with books… I prefer in the corner, because I like to focus" [Interview: Mr Kay]

Or

> "Um, it's usually more...it's kind of a bit of both because I use my laptop to get the lectures up and then use...I prefer to write down

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[24] Virtual Learning Environment – University of Exeter's online materials access which support the modules

things for notes and stuff, I don't like to type, I don't like typing notes" [Interview: Miss Flavia].

**Plate 4.5: Example of Participants' workspace**
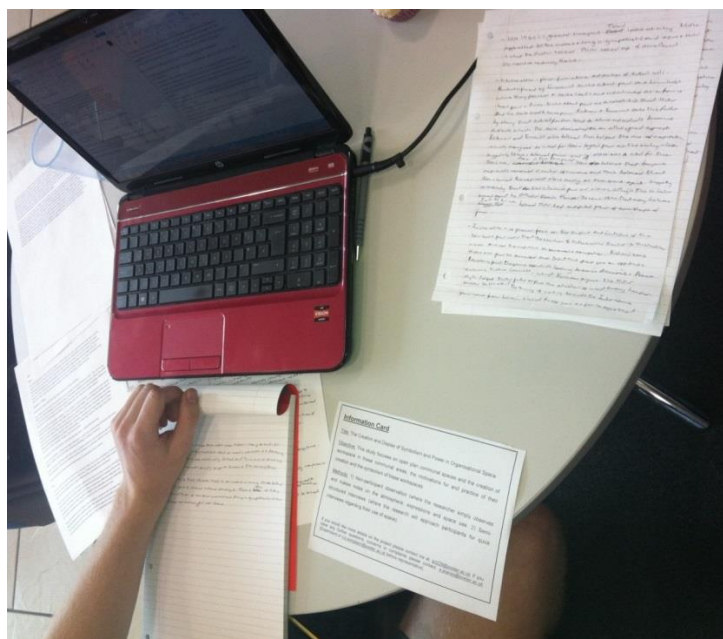


(Source: Author)

From observation notes I can see that around 90% of the time the electronic devices being used were Apple products, especially laptops. This statement is resonant of an online newspaper article which described the common Exeter student as a "middle class or privately educated student" says Crace (2009).

> "If I had to guess, I would say everyone around here typically has a phone AND a laptop, a ratio of 1.5:1 device to individual at least! If not more" [Field Notes: 14/01/2013].

Participants, agreed that the use of 'papers' or 'notes' was more common during revision time. When asked about their preference, most people said they did most 'learning' work on paper and more 'focused essay work' on electronic devices. There were even a few people who made this distinction very firmly:

> "I won't remember it if I type" or "I find it distracting". [Interview: Miss Carmen].

- Verbal Communication

As mentioned previously in the 'socialising' section, people come in groups to discuss or share group work. When asked about how work is conducted, people often mentioned either laptops or notes; however verbal communication was often implied:

"I think people do come in groups even in the library they'll be people talking to each other like asking questions" [Interview: Miss Edith].

Or

"Eh yeah…because we can also like talk, like together" [Interview: Miss Phoebe].

Participants further spoke about discussing ideas and collaborating:

"Yeah we bounce stuff off of each other, like certain people know a lot more about other stuff than other people, we can't talk to each other really in the library" [Interview: Carmen]

Verbal communication was just as important as working individually through any other medium, whether it be for group work or socialising purposes. The mediums which people chose to conduct their work also affected their preferred working space, in terms of noise levels. It was suggested that downstairs was noisier than upstairs and there was more access to 'power plugs' for laptops upstairs. Whereas, when working on paper it was recommended that more desk space was needed to spread out and see everything. This is analysed further in section 4.4, first the different spatial areas will be analysed.

### Where: the available Locations

"The Forum areas can be divided into two; primarily upstairs and downstairs, mostly by divided by either the flow of people traffic and noise levels" [Field Notes: 11/01/13][25]

It quickly became evident during the observational period that there was a difference among the people who worked upstairs and downstairs as well as the people who worked in individual quiet or silent and group areas.

However, during academic revision periods; where the Forum is typically at capacity some participants explained that:

"We visit more now during revision, otherwise we normally come in between classes" [Interview: Miss Lucy]

And that,

"We come here to work anyway, even when we don't have classes so when it's busy, we sit wherever there is space really" [Interview: Miss Amelia]

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[25] Refer to Figure 3.1 for the ground floor (downstairs) and Figure 3.2 for the 1st floor (upstairs)

Whereas some participants had their area preference:

> "We are usually here, and our stuff is here most of the time" [Interview: Miss Lamya]

This section is divided into two main locations, the Forum areas (upstairs and downstairs) and the Library areas[26], termed so because they are closer to the library entrance and also referred to as part of the library section of the Forum by participants.

- Forum

Throughout the interviews, participants were asked to talk about their preference of area within the Forum. It emerged that participants preferred the Forum for their working area rather than their home as Miss Cinderella and Alicia explain:

> "I can't stay in my room to study, I'm always outside because I like to talk, I am not sure why the Forum and not another place, maybe because it is more space… I think it is bright and bigger and because there are lots of students" [Interview: Miss Cinderella]

And

> "I don't think I can stay at home to study, Im always watching movies or searching the internet, so I must come here [Forum] to study… also the desk space is bigger and brighter" [Inteview: Miss Alicia].

There is a variety of locations available in the Forum, as well as types of desks which people can choose to work at:

> "Sometimes I'm there, sometimes I'm upstairs and sometimes I'm on those benches not with a table just a bench (Plate 4.1) to look at my notes or anything like that." [Interview: Mr Ron]

i) Downstairs (Figure 3.1)

> "Downstairs tends to get more busy more often, during lunchtime it's typically buzzing with people… regardless of revision time or not… from 11am to 3pm nearing the strike of the hour, people pour in and head up to the auditorium for lectures or use the Forum simply as a passage to the other side of campus" [Field Notes: 12/01/13 and 20/05/13]

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[26] Also known as the sofa areas (see Plate 4.2)

As the researcher reflects on the field notes, the downstairs areas in the Forum become busier more often and hence noise levels fluctuate more frequently. The downstairs area has more access to main entrances, such as the two main entrances to the Forum, the library, the market place and it is also where the Information Desk is located.

> "Downstairs - there is a glass wall that separates the library from the other bit, you can literally just, I can just sit there and people watch, like everytime I look up there is people" [Interview: Miss Phoebe].

And

> "I am doing my degree via an online course at another univerisity, so as a non-Exeter University student, I really enjoy having access to this space downstairs near the library, I'm close enough for access to books but I feel comfortable working here as oppose to the Library in town" – [Interview: Miss 1 S1]

The popular areas; the ones with less turnover, seemed to be those near the library entrance. However, some people clearly had a preference for the upstairs areas:

> "I don't like downstairs because it's too noisy" [Interview: Miss Carmen]

And, although he doesn't visit the Forum very often Mr Ron agrees:

> "I hear that a lot of people don't have these social conventions and just talk loudly and it gets to my nerves and that's why I don't like working here (points to the general downstairs area of the Forum)". [Interview: Mr Ron]

ii) <u>Upstairs (see: Figure 3.2)</u>

> "There is a definite difference between sitting here [upstairs] than downstairs, the noise levels are probably the most obvious difference at first, but the atmosphere seems more peaceful here, people generally have their heads down in their notes or typing away on laptops. People don't 'move' as much up here" [Field Notes: 22/05/13].

Reflecting on the days spent upstairs, the researcher noticed that people turnover is not as high, people come here in the morning and seem to spend eight hours plus, only getting up and moving for a brief time.

> "I think I like it up here because it's a mixture between social and working whereas downstairs everyone's just chatting and hanging around." [Interview: Miss Flavia]

As Miss Flavia explains, there is still a variety of activities going on upstairs similar to downstairs but perhaps the ratio of working to socialising is lower upstairs than downstairs.

> "Well in my experience when I use the forum library area I'll spend 10 minutes walking around or so and then if I do find a spot I'm sort of surrounded by people quite nearby and I prefer an environment where there's a bit of noise as opposed to complete silence as well" [Interview: Mr Buddy].

As Mr Buddy points out, there is an element of preference for an area which has people surrounding him, to understand the individual areas the next section looks at the 'Library Areas' in the Forum which can be categorised into i) individual quiet areas ii) individual silent areas and iii) the seminar rooms.

> "I really like the element that there is food and drink allowed in this section' so I mainly sit outside the library" [Interview: Mr Yahya]

- <u>Library Areas</u>

Recapitulating, throughout the interview, it emerged that there is a difference between 'quiet' and 'silent' areas. The majority of participants had a preference for some background noise rather than none (see: Table 4.1). Hence, the following areas have been divided into three categories.

   i)    <u>Individual (Quiet)</u>

> "I'm not a fan of silent study… no I prefer to have other people in the room, I prefer there to be a sort of background noise but not too loud obviously and just lots of space to myself so like the whole table here is ideal for example where as if I'm sort of cramped in the library with people either side and its silent" [Interview: Mr Buddy]

Or

> "Yeah, then I'd go and sit in like the silent study room, well not the silent study room but a quiet study room" [Interview: Miss Flavia]

Mr Buddy, as well as the majority of participant's preferred some background noise while working, the extract from the interview below summarises most of the participants views on why quiet is better than silent.

> "I don't know I think it's kind of an eerie silence it's like everyone's trying too hard to be quiet I feel like then if I make any sort of noise I'm disrupting other peoples flow, I find as well any small noise there is immediately a distraction where as if there's background noise you

don't notice if someone else is talking for example" [Interview: Mr Buddy]

This was reflected in other interviews also:

"I prefer outside the Library because I feel I can talk, whereas inside I feel I need to be very quiet" [Interview: Miss Angela]

And

"I know it's weird but, I just find it hard to work in complete silence" [Interview: Miss Amelia]

Or

"I hate like being in silent study rooms, yeah I can't work in silence" [Interview: Miss Flavia]

While, Miss Abigail explains that background noise is a form of a minor distraction:

"Yeah, I like a bit of a distraction with some background noise" [Interview: Miss Abigail]

ii)  Individual (Silent)

Generally, the individual silent areas have a negative stigma about them in terms of certain behavioural etiquette of noise making or respect for others working in those areas, as Miss Amy explains:

"Because in the library, I tend not to move about as much, but I tend to focus on my work, and I don't listen to music - especially in the silent study because I don't want to annoy anybody else…" [Interview: Miss Amy]

While it emerged that the silent room exists, the researcher did not feel it was neither appropriate nor relevant to this thesis to approach people inside these rooms for interviews, however some participants did mention the areas in a positive way:

"Yeah there, cause I find it the quietest part of the library, um, and it's got individual desks".[Interview: Mr Xc]

And,

"I usually sit in the inside the library when I find a space, I prefer the silent rooms because of the desk space and less distractions, I like

having that option, there is a certain understanding in those rooms" [Interview: Miss 1 Costa]

### iii) Seminar Rooms (Group work)

Seminar rooms, although these are inside the library, but they are represented here as part of the Forum since they considered to be new spaces designed in conjunction with the Forum building. The researcher did not approach people in seminar rooms for interviews as it was revision time and these were considered 'silent spaces' during that particular period; however participants did speak about them throughout the interviews as chosen spaces to conduct work.

> "Yes actually over revision time, me and my friend Laura would try to get in just before 9 just so we can get the seats we want…so yes in the seminar rooms we'd try and get the window seat" [Interview: Miss Edith]

While it is stated on the Forum webpage that the seminar rooms were installed for group work, during revision time they become individual working spaces which are usually silent to accommodate the increasing number of people working in the Forum during those times.

> "Because some of my friends, we are like in the seminar rooms which is really good to be, some of my friends, or some of my productive friends, when they are sitting there you can find that they are really focussing on their work so being with them you are being visible at the same time you are looking at them working so mostly you are getting the best of both worlds, so this is quite interesting" [Interview: Mr Kweli, emphasis added]

Throughout this section, the researcher has attempted to understand the different activities taking place within the Forum, what mediums are used to conduct the activities and the location of the activities from participant interviews. It has emerged that all three are interrelated, for example if the type of activity is revision, people tend to work in note taking form rather than electronic and therefore choose areas with some background noise, preferably upstairs in quiet rather than silent areas.

Next the researcher will examine the reasons why participants have chosen to work in the Forum.

**Why: the Reasons**

Focusing on the reasons people come to different areas of the forum to work is very important to this study as it can give an insight into perceptions of the Forum, what the spaces and artefacts afford to them and how their meanings are constructed and re-constructed by individuals.

This section is divided into two main reasons, resources and atmosphere as they have emerged as the most prominent reasons throughout the interviews.

- Resources

While for a majority of people atmosphere was one of most common reasons for working in the Forum and not elsewhere, a large number of people also mentioned 'resources' to be the reason for visiting and choosing to work in the forum. Sometimes, it would be evident at the start of the conversation where as other times access to books and food would be one of the reasons they chose the Forum to work in.

i)    Research Material

When the researcher asked about the reasons a participants visits the Forum, access to 'Books' was one of the most commonly cited resources for visiting the Forum:

> "Because of books and other resources in the library" [Interview: Miss Prue]

Or

> "I think books are very important to me, I generally come already prepared with like drinks and stuff" [Interview: Mr Xc]

And

> "I worked inside the library cause I need to do read something or search on the internet" [Interview: Miss Talise]

> Or ease of access to those resources:

> "If I'm up in the physics building, like, I would have to walk all the way down here, just to get a book out, but if I'm already here, then….its easier" [Interview: Miss Amy]

### ii) Peers / Colleagues / Classmates

The second most popular resource for visiting the Forum, under the category of resources, relates to sociable element of the Forum. Participants often implied that they came with friends, and often conversations would have a plural rather than singular indication:

> "Like when me and my friends go for a break so like me and Laura will walk round the library just like have a beer or something get some fresh air" [Interview: Miss Edith]

And

> "Exactly, most of the time I come with either my boyfriend who would like to sit next to me or on the balcony or one of my friends" [Interview: Miss Flavia]

Furthermore, as participants discussed the space in the Forum, the majority of the time a friend was mentioned: 'My friend thinks' or 'when *we* go to lunch, *we* sit…'

### iii) Food / Drinks

Food (or Drink) was also a resource which came up in conversation among the majority of interviewees.

> "Food, is  a big big factor!" [Interview: Miss Prue]

And Mr Yahya concurs:

> "I prefer coming here because there's food and drink" [Interview: Mr Yahya]

As Miss Prue and Mr Yahya explain, the availability of food or drinks in the Forum is one of the main resources participants choose to work in the Forum, or it is one of the main reasons they work longer in the Forum.

According to several individuals availability of food or drink meant that they could stay in Forum and work for longer because 'boosts of energy' in the form of snacks were just below or around the corner. As Table 4.1, depicts 20 out of 32 people who visit the Forum to study remain for almost or more than eight hours.

- <u>Atmosphere</u>

Atmosphere was one of the commonly cited reasons for visiting the Forum to work, more so than resources. While it has been mentioned before that the majority of people approached by the researcher came to the Forum for work or study type of activities, some also came for the sociable element of the Forum. The atmosphere attraction can be further divided into i) the relaxed atmosphere, ii) social atmosphere and most importantly iii) studious atmosphere.

Mr Kweli sums it up best:

> "Umm, I think it is the atmosphere, its very workaholic, many students are there and when you see students studying, you get more enthusiastic, you get sort of, feel this competitiveness in some way, in which you have to study more and I think its more - the library and especially the forum is a place where you can find, a lot of your friends and you can discuss al to of things that, or study the topics that you don't understand - so mostly its a space where you can talk to friends and study at the same time, so its mostly fun, a fun place"
> [Interview: Mr Kweli]

Here he mentions two main atmospheric reasons for visiting the Forum, the studious environment and the sociable elements of the Forum and concluding that it is a 'fun place'.

### i) Relaxed Atmosphere

There was a general feeling among participants that the Forum provided a 'relaxed' atmospheric characteristic which they were drawn to as one of the minor reason they visited the Forum.

As Amy, Bell and Carmen converse over their justifications for visiting:

> Amy:        It is more relaxed…
>
> Bell:        Yeah it is a bit more relaxing..
>
> Amy:        And if you are doing group work as well..
>
> Carmen:    Yeah we bounce stuff off of eachother, like certain people know a lot more about other stuff than other people, we cant talk to each other really in the library.
>
> Bell:        It's a space that easily, you can work and concentrate, but you don't have to do it –it's nice and relaxed…
>
> Carmen:    Yeah, oh Yeahh..

Amy:     I would say that people mainly come here to work, its more relaxed sort of thing, you find a lot more people talking

And others agree:

"here people just glance across it more like relaxed atmosphere, it's fine" [Interview: Miss Flavia]

And when asked how they are feeling working in the Forum:

"Oh yeah I feel very relaxed" [Interview: Mr Ron]

And

"Yeah if I'm doing something where I need a bit of like, like relaxation as well at the same time then I do like to be in the forum where there's loads of people coming in and out so I'm not fully focussed on work but I'm not necceseraly interacting either" [Interview: Mr Xc]

The relaxed atmosphere seems to be providing people with a means for minor distractions:

"Normally I would do things here. I'm not only just like reading books or learning something here sometimes I relax myself in the library area and it is good place to gather information on what is happening in the university and we sometimes feel comfortable to talk, which is quite useful and it is just by chance you see these things" [Interview: Miss Talise].

Furthermore, Carmen believes that the relaxed atmosphere provides more of a learning environment:

"When I have to focus, like too much though, it goes in less than sometimes when I am a little more relaxed - I don't realise it's going in, but then I go home and 'Ohhh' I remember that - or like when I am actually concentrating on it, I feel like I'm working hard but then I go home and I don't find I remembered anything more than when I'm relaxed doing it" [Interview: Miss Carmen]

From this evidence, it can be said that she finds studying in a relaxed atmosphere more productive and efficient than the alternative silent areas. Therefore, as it has been mentioned previously the Forum atmosphere is made of both sociable and studious elements. These will be analysed next.

ii)   Sociable Atmosphere

The sociable atmospheric element of the Forum has been echoed throughout this chapter. It is very evident that participants feel this is one of the main

reasons they prefer to work in spaces such as the Forum rather than their home or inside the library where individual silent areas can be found.

> "I think it's to be honest out here [outside the Library] its similar to me, like similar personalities to me as in every one's very sociable and they like people around them and um obviously people want to work but they prefer the social aspect of it" [Interview: Miss Flavia]

Or

> "I have made some very good friends, obviously that is the result of this environment" [Interview: Miss Rez]

And

> "I don't think it's important but I think it definitely helps, I'm quite comfortable working by myself as long as it's not at home so the change of atmosphere is enough to get me out of that sort of element but then equally if I've got something else watching me or if i'm visible i work much more efficiently so if there is someone watching me its better but its not essential" [Interview: Mr Buddy]

While Mr Buddy enjoys the social atmosphere he agrees that 'it is not essential', hence the most important atmospheric reason is the studious environment which the Forum provides.

iii) <u>Studious</u>

> "The atmosphere is more like....I can study, focus like that… as long as there's a study atmosphere" [Interview: Miss Thalya]

Typically all participants agreed that the Forum provided a studious atmosphere and environment for them to work in.

Mr Kweli explains further:

> "So I think this gives a huge role… I think mostly - when studying you can find those there, and not inside the library, because inside the library it is a study, atmosphere, you can find them here in the forum where its outside and you can see a lot of people collaborating and talking and you know someone, and your friend is talking to someone else and you end up knowing him and having a new friendship" [Interview: Mr Kweli]

Therefore it is a mix of the studious and sociable atmosphere which provides a productive environment for people to work in.

"Yeah. I think the atmosphere is quite friendly and happy… I think it's really important that everyone kind of feels in it together because all of us who are here haven't finished exams and it kind of gives you a bit of encouragement that everybody's still around and we're all in it together kind of thing" [Interview: Miss Flavia]

Furthermore, it can be said that the Forum worker is built on a community of individuals working together but privately. Together an atmosphere is created which is relaxed, sociable and studious at the same time allows for everyone to feel a sense of 'togetherness'.

These are some of the potential *affordances* the Forum space offers. These *affordances* in turn can provide a basis for understanding the 'studious' atmosphere the forum offers according to its occupants. When asked to describe the atmosphere in the forum, the second most spoken atmospheric attraction after social is the working environment. People felt empowered and motivated to study give that others were working around them. Another common description and attraction to the forum was its 'relaxed' atmosphere, often implied by people suggesting the library was too 'intense' or 'tense'. In summary, according to the participants, the atmosphere in the forum has strong social attractions where people are comfortable to study and converse in the same *relaxed* space simultaneously.

The findings of this section ring true with a statement made by the Forum Manager:

For me the most interesting thing when I was in univeristy, if we wanted to study went to library wanted the silence. Now we have got this social study space. Broadly speaking we have three zones, the library, which is a quieter study space, the break up areas so that bits zero on plus on a soft seating areas outside the library., there is still more noise, then you have the social study space area, with benches along and that is a study space where students meet their friends. I am not in no way a study space expert, so not a best person to talk about it, but from my perspective it's the future of the way space study should be designed" [Interview: Mr Stavros].

It is here where the researcher re-examines the initial categorization of people according their activity: the worker, the socialiser and the temp. While it was suggested that people remained in their respective categories throughout observations, the researcher now understands, that the Forum worker, is all three categories at different stages. The Forum worker wants to visit the space

with intentions to work, but throughout the day moves into the role of socialiser and temp before returning back to work: worker.

## 4.4. Thematic Analysis: Rhetorical Metaphors

As the literature review has come to show, power (chapter 2, section 2.3) is an important theme in organisational space. The evidence of power in the interviews and observations will be discussed here through 'unspoken reciprocity' and subsequently turn to an analysis of the theme: 'isolated scholar' (see also Table 4.2).

**Table 4.2: Main Themes and Sub-themes from Participant Interviews**

| Main Theme | Sub-themes |
|---|---|
| **4.4.1. Unspoken Reciprocity** | • Behaviour<br>• Visuality |
| **4.4.2. Isolated Scholar** | • The working individual |

(Source: Author)

### 4.4.1. Unspoken Reciprocity

The term 'unspoken reciprocity' has been chosen to explain the binary spatial relationships as they have emerged through the participant interviews. The term is comprised of two words 'unspoken' and 'reciprocity', the former was used once by a participant during an interview and further implied by others and the latter is used by Churchill and Wakeford (2001) to describe collaborative interactions between multi-locational workers. Behaviour and 'visuality' proved to be the most prominent sub-themes to 'unspoken reciprocity' and will be examined next.

**Behaviour**

Influenced by a combination of Dovey's (2008) spatial disciplinary power and Lefebvre's (1991) social production of space concepts, this sub-theme presents behaviour as a binary spatial relation.

When one participant was asked to explain what their perceptions were of people around them and their activities, he responded:

> "I think it's sort of an unspoken agreement that you know that we've both got a lot to do. I wouldn't actually speak to those people" [Interview: Mr Buddy].

It can be deduced that, he perceives others around him as having a similar workload; he identifies with them as well as empathises, but does not interact with them. He mentions the 'unspoken agreement', one of the first implications that there are some rules or obligations which are 'unspoken' and 'reciprocal', suggesting that through these build a certain way of behaving in that space.

Social exchange theory (Blau, 1964), explains that good quality social interactions induce 'unspoken' obligations to yield favours to those people which have acted in one's interests. However, this unspoken reciprocity applies in so far as the relationship remains mutually beneficial (Blau, 1964).

For example, in the case of the Forum, appropriate behaviour would be to respect 'noise' levels, as several participants suggested. Therefore, if noise levels are silent, they seem to remain so if people feel obligated to be silent by conforming and participating in the silence. The same notion can be applied to quiet and areas with more background noise.

Here a spatial pattern emerges as behaviours by way of 'noise making' become dependent on people and their acceptance or denial of these unspoken agreements.

One participant pointed out that:

> "It's a library, it's expected to be quiet, the Forum is public, so by nature it is louder" [Interview: Mr. Kweli].

It is people's behaviours which make up this characteristic of 'nature' which determines noise levels differentiations by area. This finding is in-line with Lefebvre's (1991) concept of the social production of space, particularly the 'lived'; intentionally planned spaces and 'perceived'; the production and reproduction of socio-spatial characteristics.

Additionally, Dovey's (2008) notion of spatial domination, manipulation and seduction through 'coercive[27]' power in the built form is also evident here. To recapitulate (see Table 4.3):

**Table 4.3: Recap of Dovey's (1999) coercive forms of spatial power**

| Coercive Spatial Power | Summary Definition | Example |
| --- | --- | --- |
| **Domination** | Spatial Representation of Isaac's (1987) 'power over' | • Public Parades<br>• Public Monuments |
| **Manipulation** | Concealed form of power, whereby an individual is kept ignorant | • Modern day Panopticon design of cities or organisational layout |
| **Seduction** | Manipulating an individual's interests and / or desires | • Conforming behaviours seduced by the individual's work organisation |

(Source: Adapted by Author from Dovey (2008)

In the case of the Forum, spatial domination can be viewed as the 'public' nature of the open-plan space and the library. As Mr Kweli suggested the two afford different noise levels which are affected by spatial domination.

Forms of spatial manipulation in the Forum are more subdued. This form of coercive power is more evident in casual conversations at the end of the interviews after the recorder was turned off. Several participants explained that they found themselves questioning their surroundings for the first time; especially when they were asked about their perceptions of others around them. Typically participants showed an interest in this study and its spatial element as they explained it provided a novel insight into their working practices. In spatial terms, the Forum open-plan space can be seen as a modern panopticon

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[27] It is important to note here as before, that while the term 'coercive' is used, it does not necessarily imply a negative connotation but rather it denotes a form of control which is enforced rather than chosen.

design, where the workspaces are all place along the interior walls and the 'piazza' or 'street' is found in the middle (see ▣ in Plate 4.6).

**Plate 4.6: Forum Plan of Ground and First Floor**
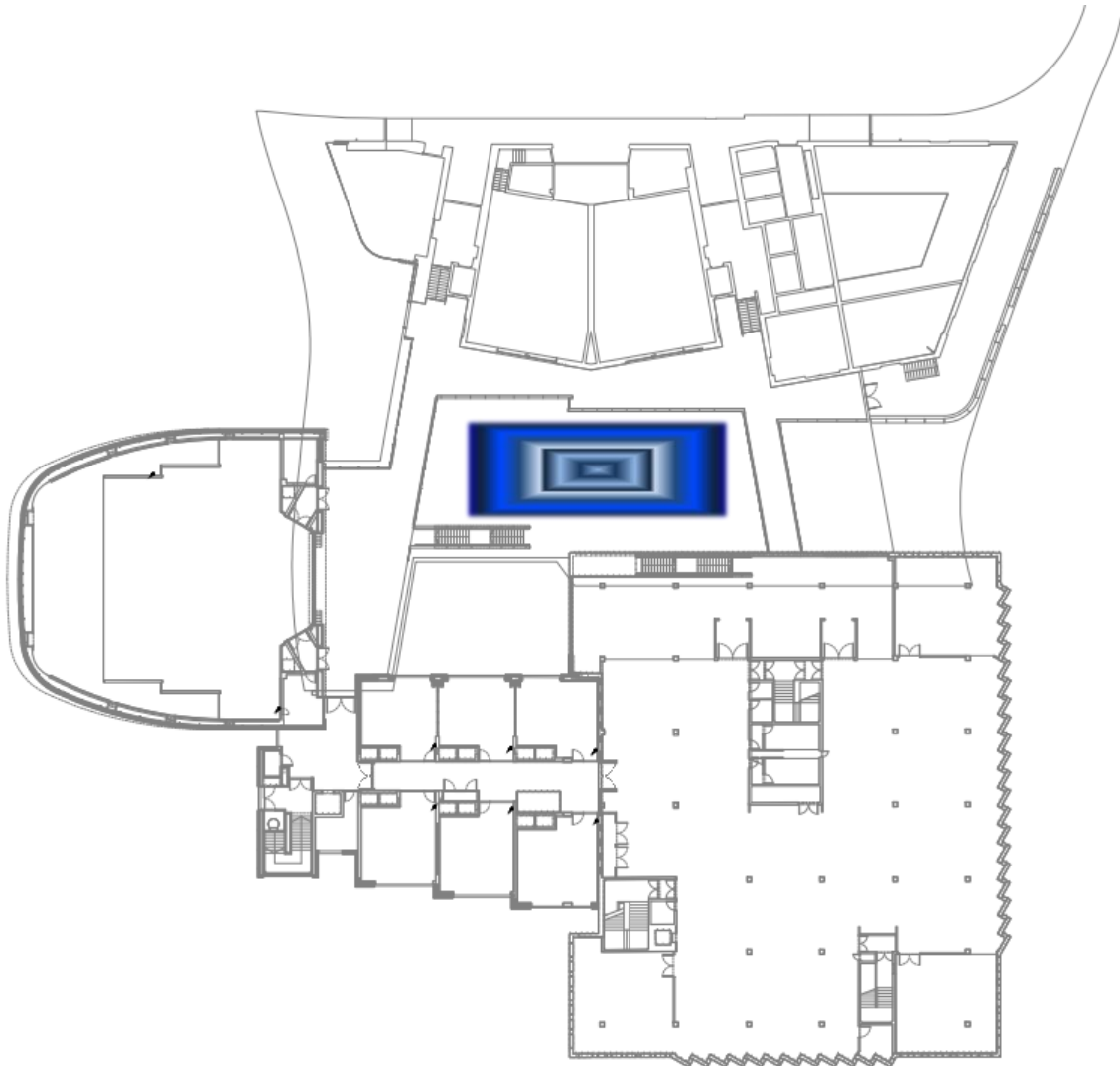


(Source: Adapted from Wilkinson Eyre Architects)

Forms of spatial seduction are the most evident in the findings. One participant suggested:

> "Most of the things you need are here, I think the forum, plays a huge part in the University of Exeter's being one of the best universities… it's a very good way to tell the students, don't go, stay in the library, we want you to. I think this plays a huge part in this university. This university has achieved the 7th, in the top 10... I think one of the reasons is the importance of the students because they care for a lot of the students, a simple thing like, if they wanted something, or they wanted a student to be more productive, why not keep them here in the library where all the resources are there. And the other thing is

the 24 hours, the 24/7 hours thing, which is a very good beneficial thing to the university" [Interview: Mr Kweli].

Therefore, Mr Kweli believes that the abundant available access to resources encourages more students to work in the Forum or the library, and furthermore the 24 hour availability 7 days a week is a form of seducing students to work for longer which in turn, as he suggests, benefits the University in the rankings. While no other participant gave similar reasoning, Mr Kweli may be making a valid point in supporting Dovey's (2008) spatial power of 'seduction'. In an article by Fleming and Spicer (2004) titled: *'You can checkout anytime, but you can never leave'*, they discuss the blurring boundaries between the inside and the outside of the organisation beyond the organisations' physical boundaries.

Furthermore, comments mentioned earlier in the sub-section 'How' (4.3.2.) such as:

> "I tend not to move about as much, but I tend to focus on my work, and I don't listen to music - especially in the silent study because I don't want to annoy anybody else" [Interview: Miss Amy].

And

> "So it does help me, If I was in a quieter room I think I'd probably get more distracted it sounds kinda silly i think like if there's other people working it keeps me more focused because their working i suppose it's like a relationship in a way because of what they're doing affects me" [Interview: Miss Edith].

Here students associate certain beliefs about different areas and therefore produce conforming behaviours can also be seen as a sign of spatial seduction. This further supports the theme of unspoken reciprocity, where forms of spatial 'power over' encourage individuals' behaviour in different spaces.

Noise levels proved to be participants' responses to behavioural characteristics. From the researcher's observation notes it can be seen that noise levels fluctuate throughout the day. In the mornings there is some sort of hustle going about, but generally people are quiet (ie not silent), during lunch time as the traffic increases through the Forum it becomes more acceptable for people speak a little louder, to have conversations or to speak on the phone. However, after lunch is over, the quiet areas become quiet and the silent areas are generally noiseless. There is a general consensus among participants that

'open' spaces are more acceptable to be louder than 'narrow' spaces. This is true among the researcher's observation notes and participants' preference of noise levels compared to different areas.

For example, people situated upstairs on the narrow balcony (see: Plate 4.1 for further detail)

Generally worked with minimal noise levels; speaking in hush tones, walking away to take a phone call, whereas people situated directly below them in the 'street' area had conversations on the spot with people who passed and typical took phone calls without leaving their workspace. Furthermore, the researcher noticed a significant difference in the level of conversations which were recorded downstairs and those upstairs, which agreed with the above finding.

While some participants' mentioned that:

> "Sometimes if we are just talking which, no matter if it isn't in the silent study area, if some people around you have some other facial expressions like, thing, we will see we might disturb him or her and we must slow down or talk in some other places" [Interview: Miss Talise].

The researcher did not observe these 'facial expressions', however, what was observed was when people would make some sort of "abnormal" sound as Mr Kweli explains, they would put a hand up or two and mouth 'sorry' pretty slowly to those around, additionally, people in sat on the balcony (see Plate 4.1 above) would generally lifted their chair to pull it out and if not and it squeaked it generally looked like people would be 'sorry' even though it seemed that no one really fussed about it ever, not in an obvious way. An interview with three friends: Amy, Bell and Carmen, also demonstrates that they agree with the above statement.

Currently, the organisational space or management literature is limited in studies which examine noise levels in organisational spaces. The researcher is aware of a case study which is being conducted at present which seeks to fill this gap. However, the current literature does suggest that opening up spaces encourages a more interactive environment among individuals. Here the noise levels only offer a small indication of interaction levels. Therefore, this will be further analysed in the theme: the 'Isolated Scholar', before this however, the

researcher will turn attention back to unspoken reciprocity and its sub-theme of 'visuality'.

**<u>Visuality</u>**

Visual images, symbols and aesthetics are important concepts within the field of organisational space. They are important because the symbolise and afford meanings to individuals, whether it be about what people can see and the impacts and what cannot be seen and its impact. The researcher has chosen the term 'visuality' over the term 'vision' or 'visibility' is because the latter is about the mechanical process of receiving visible light waves through the retina whereas 'visuality' is the social/ psychological process of socially constructing the meaning of perceived visual data (Natharius, 2004).

The act of being visible and viewing people at the same time; something which the researcher has chosen to apply the term: 'visuality', was a common theme among participants.

Participants (especially Daily users) were asked if they had noticed any faces becoming familiar they responded:

> "Yeah definitely, I've noticed some people, in the same seats, sitting in the same seats, sometimes people are overprotective about where they sit" [Interview: Miss Amy].

The conversation continued among the two friends:

> Bell:   "Oh I wonder if my person is here yet…"
>
> Amy:   "No he is not"
>
> Bell:   "Aww he's cute"

And,

> "Yes (laughs) people you have not spoken to before in your life - and you recognise them" [Miss Phoebe].

And,

> "Um and also like it does kind of, you do again see people on a daily basis who you don't know the name of but you see them all the time so you kind of think you know them and also if I want to leave my stuff I'd like ask the person next to me" [Miss Flavia].

What was more interesting was the fact that people enjoyed seeing other people work and being watched as they worked:

"I don't really, no one seems to watch you - no one pays attention to what you are doing, there are just always people here… And I feel like, I'm the type… And especially if people watch me too much, I'm paying attention to what I do. When I see people who are really concentrating, I feel bad, that I'm not concentrating, stuff like that" [Miss Amy]

And her friend Miss Bell concurs:

"I feel as well like, because - this sounds a bit weird - because in the library you are around - say like – it's quite a small space - people sit down and they stay there for hours - are you not looking at the same person [Questioning, looks to friends] Quite a lot? Even though you don't know them..."

And Miss Carmen even states:

"I do that too much".

Although participants were asked how they felt about the 'visibility' element of the open plan space, they chose to use the term 'watch'. This quickly became apparent that a majority of the participants agreed that they 'people watched'. This is evident as the above conversation continued:

Amy:    Well she's [points with her eyes at someone else on the balcony] looking at dresses right now, soooo….

ALL:    (others look and giggle too)

Amy:    I always see people on Facebook.

Bell:    Yeah there are a lot of opportunities for distraction

Carmen:    So you are always thinking people are working really hard on a computer – and then I like see it – oh really not.

Bell:    Yeah they are like watching videos or something like that, more distracting really…

And other interviewees agree:

"Yeah, certain people you will definitely see just because they're in the same room as you and you see them every day so you feel like you know them." [Miss Edith].

And

"like the glass bit down there (points to the left and below) you can just be literally people watch" [Miss Phoebe]

And what becomes more evident:

"I quite like watching other people to work, because it makes, motivates me to work" [Miss Prue]

And

Yeah, I always think like, what else like am I going to do? if I'm not working, like I'm just going to be like sitting around. People are going to be like 'oh she should be working' - If I go on Facebook – it doesn't count as work… Whereas if I am in room, by myself - I'll just be on Facebook for like ages [Miss Phoebe].

And,

"I like to look outside; sometimes it's boring studying, I like to see people." [Miss Cinderella]

Or

"Yeah like people watching – we come here in between classes just for that" [Miss Lucy and Lamya]

Or

"I like seeing the local [as oppose to INTO students] students, Yeah, I like it better" [Miss Alicia]

Whereas Mr Buddy adds:

"equally if I've got something else watching me or if I'm visible i work much more efficiently so if there is someone watching me its better but it's not essential" [Mr Buddy].

While 'people watching' proved to be a common activity for participants, some liked sitting next to a window

"so the spot I pick is on the top floor and there's a small window there I can see outside, see the cloud is moving when I'm not looking at the books. And sometimes it can have some sunshine but the sunshine won't flash on the screen, so it's moderate light and quite refreshing, um yeah a nice kind of space and I got books surrounding me and it feels quite academic." [Miss Winnie].

Returning to the theme of visuality, the commonality among the above responses indicates that there is a dualism of visibility and visuality. Participants felt motivated to work in an environment where they were being potentially

monitored. This can be argued as evidence of Dovey's (2008) spatial manipulation in addition to Lefebvre's (1991) social production of space. It is reasoned that it is the people which make up this feeling of watching one another and through that monitor their own work progress.

**Figure 4.2: Visibility and Visuality**
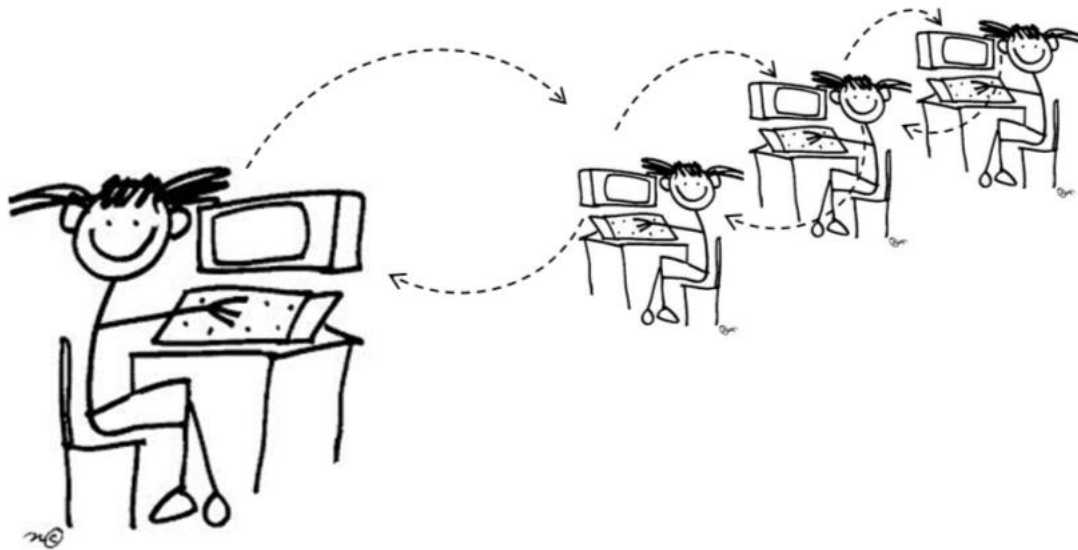


(Source: Adapted by Author from June, 2014)

Furthermore, this behavioural characteristic was more apparent in the narrower public areas, mostly found upstairs in the Forum. It can be deduced that this finding lends itself to the panopticon concept, particularly the notion of self-control, self-survey, self-discipline or, as Bauman and Lyon (2013, p. 59) term it, "Do-It-Yourself [DIY] surveillance". It is evident that 'vision' or 'sight' has become more than a sense, and is part of a process (see also Figure 4.2) whereby people see others working and feel either obligated or motivated to work as well because they can be seen.

While visuality is still a paradoxical concept to comprehend, it can be closely linked to spatial motivation and manipulation through DIY or self - surveillance. People in Forum seem to create an environment of their own, through certain behaviours and common perceptions of others around them. Given this people ethic that participants have for their colleagues it is questioned whether through

their sharing of an open plan space in the Forum, if they feel they are part of a community or if they still feel quite individualised.

## 4.4.2. Isolated scholar

The literature has shown that collaboration and interaction among employees is important in many organisations (see: Fayard & Weeks, 2007; Haner, 2005). It is contended that interactions between colleagues encourages mediums of knowledge sharing which are both beneficial to the organisation as well as the individual (Backhouse & Drew, 1992). Heerwagen et al. (2004) argue that collaborative work environments require spaces and furnishings to support both individual worker focus and project group interactions.

Participants did not admit to feeling part of a community when questioned, instead the majority of people agreed that they worked on an individual basis:

> "Community? That is a bit of a strong word. Community in the broad sense, under the umbrella of the university, but community would imply some kind of connection. I can't see any connection." [Mr Kosmo].

Or

> "Alone, usually I work alone…I don't internationally use body language to indicate when I'm open to conversation or not, I think for example if I have a deadline and there is a lot of work, then just typically I won't be making eye contact, I'll just be - my head will be down" [Mr Pericles]

Or

> "Well sometimes I come alone and some other times I come with some of my friends, most of the times I come alone and end up going with some other friends. Yeah, so mostly I think…it depends who do you come with sometimes, so if someone is your classmate, he will come with you because of the nature of you have the same work so it depends on who comes with you" [Mr Kweli].

It is suggested here that a blurred relationship exists between social and working patterns. There was a discrepancy in the way people viewed the atmosphere of the Forum and how they visualised themselves in it. A social environment does not necessarily mean a community to the Forum worker.

Mr Buddy explains himself in more detail:

"To a small degree I'd say, I don't really get a massive sense of community, as a whole… I think because it's such an expansive and large school because there's so many students and because I had a year out as well so for a lot of my friends I made on my course went on and got on with their lives for example so yeah I just use this place more to work rather than a place of community."

Not many people admitted to feeling as part of a community, I would say 90% of people agreed they worked on an individual basis, but below I present signs of 'community'. Perhaps, they see a difference between socialising and working as part of a community.

"If I'm doing something where I need a bit of like, like relaxation as well at the same time then I do like to be in the forum where there's loads of people coming in and out so I'm not fully focussed on work" [Mr Xc].

Or only feel a part of a community with people they can culturally identify with:

"I think that, when it comes to this point, when I could feel the sense of a community, those which share the same culture or same ideas you can tend to go to these communities, in a way you can find their thoughts accompanying yours, and you can gain more information as them ,so I think yeah it plays a part, the community and who is actually in that community" [Mr Kweli].

Where as a member of staff has an alternative view:

"I think the Forum absolutely generates a sense of community.  There is certainly a different vibe between the teams and the building but we do work quite closely together all the teams together and socialize and there is lot of cross team work and a lot of it is because the space is a shared… Undoubtedly I do feel part of the community than I have done elsewhere.  Speaking to students, I think they feel that the Forum provides central community it's the place to be seen, where to hang out, something always goes on.  I think it does provide that". [Mr Stavros].

And his is not alone in his belief in feeling a part of a community, a few people agreed:

"I do, I do think like everyone um, there is a kind of a community spirit but sometimes people are very loud and um… I definitely feel like I'm part of the university community" [Mr Xc].

And a mature alumnus also agrees:

"That is a good question, I don t know If I have consciously reflected on that and asked myself whether or not I belong to a community, I think that I'm somebody on the one hand, I would say, I'm not part of

a community because I'm not currently a student, I'm an alumnist - so I don't feel that I'm part of that community… on the other hand, I do feel a little bit of solidarity that I'm doing, is what other people around me are doing, so that in a sense gives me some comfort that I'm not sticking out or acting in a way in a public place that is contrary to what other people are doing, as oppose to say on the high street where there are mothers with their children, lots of people shopping, when I'm not doing that" [Mr Pericles].

What he highlights here may explain why other participants don't feel a part of a community. Given that all Forum workers seem to working on an individual goal, their activities and behavioural conformities have similar characteristics. As Mr Pericles pointed out, when he is working he can align himself more to the people working around him here at the Forum rather the coffee shop in town. Therefore, while some people believe there is: "an understanding, an empathy" as explained by Miss Edith, towards other people working around them they maintain the perception of individualised work.

Additionally, from the above findings it can be deduced that smaller communities exist, more private ones, which don't necessarily align with the mass majority of people.

"Except for our, I call it our forum group, since it is our group so we regularly come here. There is also some students just living near our house…. And also normally, sometimes we sit over there and there is maybe ah, can I say boy, things like that and he always sits opposite and we spoke to him several times" [Miss Talise – emphasis added].

In this case, this group of people lived in close proximity and seemed to share workload and resources in the Forum. This 'forum group' bonded over similar cultures and shared equipment (see also Plate 4.7).

**Plate 4.7: Picture of Participant workspace**



(Source: Author's Fieldwork)

Furthermore, Plate 4.7, which depicts an image of a small kettle being used as part of the participants' workspace, signals a touch of personalisation to their workspace, as well as the user's dedication to working there for a long period of time.

Overall, there is a sense of a more isolated scholar or individual working privately in the open plan space. There is a hint of community among certain small groups of people who share other characteristics such as culture which feel they are part of a community.

## 4.5.   Conclusion

This chapter aimed to build an understanding a certain type of multi-locational worker in a particular public setting, the 'Forum Worker' at the University of Exeter. In regards to objective one: to investigate multi-locational users' current perceptions of a specific space and its associated research questions. It is maintained that the chapter provided answers to all three of the objectives. The chapter began by exploring the demographic characteristics (research question 1.i) of the Forum Worker, key results were that the majority of participants (60%) interviewed, visited the Forum on a daily basis and 50% of respondents

suggested that they spent on average 8 hours in the space and that 63% preferred having some 'background noise' while working. The two prominent reasons participants visited the Forum space (research question 1.ii) were access to research materials, peers and food. Furthermore, the thematic analysis brought to light some of the participants' motivations (research question 1.iii) for working in the Forum, the element of 'visuality' which is paralleled conceptually to Dovey's three forms of spatial power and Lefebvre's (1991) 'lived' and 'perceived' notions of socially produced space.

When objective two: 'to determine multi-locational workers' reasons for working in open-plan spaces' is concerned, this chapter responded to the first two research questions. Different areas (research question 2.i) within the Forum space were differentiated according to participants' responses where it became apparent that a difference exists between the downstairs (Figure 3.1) and upstairs (Figure 3.2) areas. These areas were further differentiated (research question 2.ii) by their 'noise' levels and atmosphere.

Regarding, objective three: to ascertain any patterns of understanding about a particular space, this chapter has comprehended the patterns emerging from both observation notes and participant views. The different activities (research question 3.i) were studying and socialising, typically using the mediums (research question 3.ii) of paper, electronic as well as verbal communication. Understanding the Forum in terms of the activities taking place within it, how these take place, where and why the users chose certain particular areas to work in, creates a better understanding of multi-locational workers and their working spaces through the emergence of two themes(research question 3.iii): unspoken reciprocity and the isolated scholar.

Participants' perceptions have further brought to light certain themes which provide causal understanding of behaviours and habits within the Forum space. As mentioned earlier in chapter 3: section 3.4, this study aims to explore the phenomenon and expand on current qualitative findings, however there are some characteristics which as the current literature supports are better captured through quantitative means. The more objective nature of quantitative techniques means discovering answers to questions which require the application of scientific procedures to satisfy the research objectives. Therefore,

the research will now turn to the next chapter, which will provide the findings and analysis of the questionnaire, and where possible make reference to the differences and similarities of the qualitative findings.

# 5. Quantitative Analysis

## 5.1. Introduction

Following the previous chapter on the qualitative results of both observational and interview data, this chapter presents the quantitative results of the field questionnaire. The aim of this chapter is to build on the results from the interviews by exploring statistical significances found in the quantitative data.

Analysis of the data in this chapter has been conducted in accordance with the two main types of analysis: univariate and bivariate analysis (Kent, 1999). Univariate analysis will be conducted first and its role is more descriptive, hence offering information regarding a holistic view of participants' demographic profile and their visiting habits to the Forum. Furthermore, bivariate analysis is employed to find any association (if any) between the characteristics of the sample with the dependent variables, in order to derive useful information regarding participants' perception of working spaces in the Forum. Additionally, further multivariate analysis will reveal more relationships in the data, through a two-step cluster analysis test (Hair, 2009).

This chapter is divided into five principal sections and aims to address the research questions associated with objective one, two and three (as shown in Table 1.1). Given the mixed method approach taken in this study, this chapter will provide answers to the majority of the research questions. The first begins by providing a holistic analysis of participants who took part in the questionnaire. The second offers a summary analysis of the open-ended (qualitative) and Likert scale question variables. Following this, the results of the bivariate analysis are presented using a thematic approach. Using the results from the above univariate and bivariate analysis the research has additionally employed a simple multivariate analysis.

## 5.2. Sample Demographic Profile

To recapitulate, participants were selected based on convenience sampling. The researcher approached people who were deemed to be working in the Forum's open plan places. 102 participants' responses were studied and Table 4.1 depicts their demographic characteristics.

From the 102 respondents, 50 were males (49%) and 52 (51%) females, while the average age was 21.71 years old. Given the even distribution of gender the same can be said for the 'International' variable, with 53 (52.1%) of people originating from Britain and 49 (47.6%) of people being outside of the UK. It can be deduced here that, given the even distributions of the gender and international variables, these will act as the explanatory variables throughout the analysis. By controlling appropriate explanatory variables, differences and similarities in terms of impact on other variables were revealed.

The majority (26.5%) of participants were in their second year of their course and the second most popular year group were those in their fourth or postgraduate year. The two highest groups of people were affiliated with the Business School (32.4%) and Social Science and International Studies (SSIS, 26.5%). From these figures and the addition of the third highest group of Humanities (23.5%), make up a total of 82.4% of participants. Therefore, it can be further inferred that the majority of participants working in the Forum fall under the discipline umbrella of the social sciences while, the natural sciences (Engineering and Life Sciences) participants present form a minority group of only 17.6% combined.

**Table 5.1: Characteristics of the Sample**

| Characteristic | Number (n) of respondents | Percentage (%) of Sample |
|---|---|---|
| **Gender** | | |
| Male | 50 | 49.0 |
| Female | 52 | 51.0 |
| **International** | | |
| Yes | 49 | 47.6 |
| No | 53 | 52.4 |
| **Age** | | |
| 17-20 | 39 | 38.2 |
| 21-24 | 50 | 49 |
| 25+ | 13 | 12.7 |
| **Year** | | |
| Year 1 | 19 | 18.6 |
| Year 2 | 27 | 26.5 |
| Year 3 | 23 | 22.5 |
| Year 4 | 8 | 7.8 |
| Postgraduate | 25 | 24.5 |
| **Area (Simplified)** | | |
| Downstairs | 61 | 59.8 |
| Upstairs | 41 | 40.2 |
| **Area (Specific)** | | |
| Bench | 78 | 76.5 |
| Desk | 13 | 12.7 |
| Sofa | 11 | 10.8 |
| **College** | | |
| Business School [BS] | 33 | 32.4 |
| SSIS[28] | 27 | 26.5 |
| Humanities [H] | 24 | 23.5 |
| C. Engineering. MPS[29] | 11 | 10.8 |
| C. Life. ES[30] | 7 | 6.9 |

Source: Author's Fieldwork

Regarding the spatial distribution of participants, Table 4.1 shows participants' location in the Forum at the time the questionnaire was conducted. Participants have been divided into two categories; simplified and specific. First, respondents are simply grouped into whether they were located upstairs or downstairs and then specifically categorised whether they were sitting at a bench, desk, or sofa type of workspace (see: Images 4.1, 4.2 and 4.3). The majority of participants which took part in the questionnaire were found in the downstairs (59.8%) working areas of the Forum. Furthermore, the specific area

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[28] College of Social Sciences and International Studies
[29] College of Engineering Mathematics and Physical Sciences [CEMPS]
[30] College of Life and Environmental Sciences [CLES]

desk space was predominantly the bench area (76.5%). These results reflect the turnover of the different areas; benches whilst are the most common and widely available seating arrangement are also the areas which turnover the most. Therefore, reflecting a discrepancy between the different areas.

**Figure 5.1: Different Categorisations of Area**
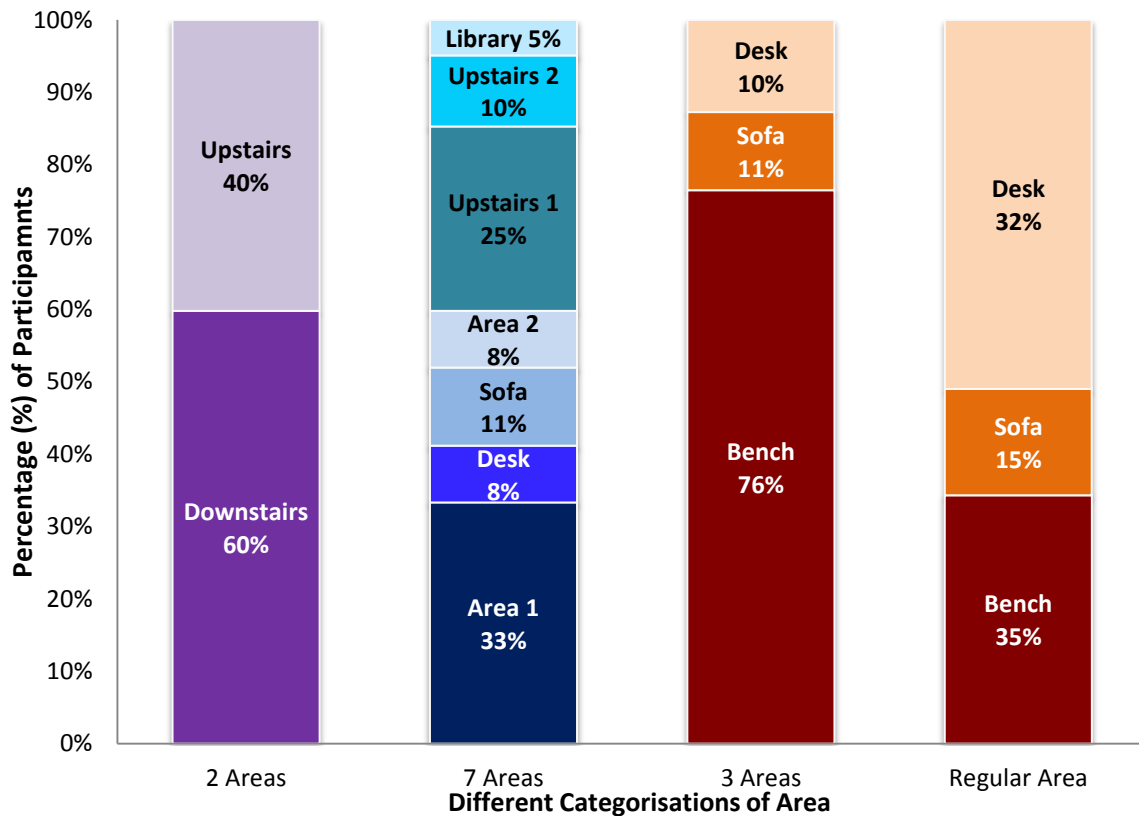
Figure 5.1, shows the different categorisations of the Forum areas. The first three bars indicate the areas where participants completed the questionnaire, with Area 1 (33%) and Upstairs 1 (25%) proving to be the most popular among participants (see: Appendix 3: Questionnaire Question 3). The 'Regular Area' bar refers to Question 11 of the questionnaire, which asked participants if they normally sit in the area where they completed the questionnaire, it is here where the discrepancy decreases and it can be inferred that Desk Areas (32%) are as similarly as popular in terms of preferred regular areas as Benches (35%). Given there is a better balance between 'Regular Area' rather than '3 Areas', the majority of further analysis will be conducted using the former rather than the latter categorisation.

**Table 5.2: Visiting Profile of Respondents**

| Characteristic | Number (n) of respondents | Percentage (%) of Sample |
|---|---|---|
| **Frequency** | | |
| Daily | 67 | 65.7 |
| Once a Week | 20 | 19.6 |
| Once a Month | 6 | 5.9 |
| Rarely | 9 | 8.8 |
| **Day** | | |
| Both | 61 | 59.8 |
| Weekdays | 38 | 37.3 |
| Weekends | 3 | 2.9 |
| **Time of Entry** | | |
| Evening | 36 | 35.3 |
| Afternoon | 35 | 34.3 |
| Morning | 31 | 30.4 |

Source: Author's Fieldwork

Table 5.2 represents the frequency of respondents' work visits to the Forum. Predominantly, 65.7% of participants visited the Forum on a daily basis and only 9 out of 102 participants visit less than once a month (rarely). Further to this, it has emerged that Forum workers visit on both weekdays as well as weekends (59.8%), whereas only a small amount of people (3 out of 102) visit just on weekends. In terms of preferred times of entry into the Forum for work, there seems to be a balance among all participants, with most people choosing to work during the Evenings (36.3%) and Afternoons (35.3%) rather than the Mornings (30.4%).

## 5.3.    Qualitative Questions

The questionnaire for this thesis was designed to include some open-ended questions, in order to allow for a wider range of exploration of themes. The four main qualitative questions were:

Q13:    Do you like to work when it is...Empty, Busy or No Preference and Please explain why…

Q14:    Do you feel you are working as part of a community or individually? Also please explain why.

Q16:   Which words best describe your experience in the Forum?
       (Please provide at least 3)

Q21:   In your own words can you give the reasons you come to the
       Forum?

When an overall word frequency query is applied to the results of all the above questions, it can depict the most common words throughout the aggregate of the 102 respondents (see: Figure 5.2).

**Figure 5.2: Nvivo Word Frequency from Questionnaire**



(Source: Author's Fieldwork)

Figure 5.2, portrays an image of the top 100 common words[31], which participants chose to be associated with Questions 13, 14, 16 and 21. The mention of the word 'study' indicates this is one of the main Forum activities, while 'people' is the second most popular chosen word, with 'friends' and 'lunch' having similar frequencies. In comparison to the overall interviews word

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[31] See also Appendix 6: Word Frequency Table for the top 10 most common words

frequency (Figure 4.1), where 'space', 'people' and 'study' were the three most common words among the respondents answers, it is evident that 'study' and 'people' are important variables which make up the Forum space. On the other hand, while the words 'looking', 'talking' and 'friends' were among the top 10 most frequent words during the interviews, the questionnaire revealed 'friends' and 'social' among the top 10 most frequent words, as well as 'individual' and 'productive'. This suggests that, the questionnaire was able to capture a more balanced view of the Forum's users, where some participants described the 'social' and other the 'individuality'. This divide will be discussed next as the results to each of the more qualitative questions in the questionnaire are analysed, and further in section 5.5 during the bivariate analysis.

## 5.3.1. Forum 'Busi-ness'

The Forum 'Busi-ness' refers to both the preferred atmosphere; ie: busyness or emptiness of the Forum, and the types of activities taking place within it; ie: everyone's business within the Forum, as well as the Forum as an organisation.

The results of question 13 are presented below in Figure 5.3. The majority of participants preferred to work in the Forum when it is 'empty' (60.8%), however, a further third of respondents had no preference (25.5%), which means only a minority of 13.7% of people who completed the questionnaire preferred to work when it was busy.

**Figure 5.3: Question 13**

**Do you like to work when it is... Empty, Busy or have No Preference?**
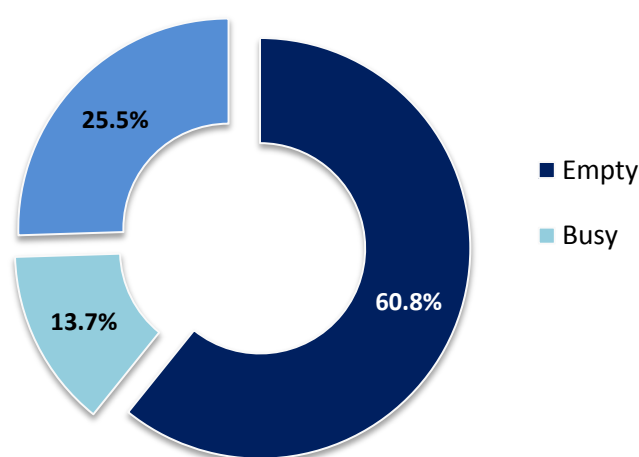


Source: Author's Fieldwork

To understand their reasoning further, attention can be turned to the latter part of the question data: 'explain why'. At first sight, a word frequency reveals the most common reasons they preferred to work in the Forum when it was empty can be attributed to 'noise' level 'distractions' which affected 'concentration' (see Figure 5.4).

This result offers an alternative view of some of the side effects of large open plan spaces, and similar to these spaces the Forum space is no exception (Banbury & Berry, 2005). Unlike the previous two word frequencies figures (Figure 4.1 and Figure 5.2), this one offers a more in depth look at participants preference of the busyness of the Forum. Nevertheless, these words do not affect the overall word frequency of the questionnaire, but this result begins to build an image of the importance of 'noise' as a variable of the space.

**Figure 5.4: Nvivo work Frequency for Question 13**
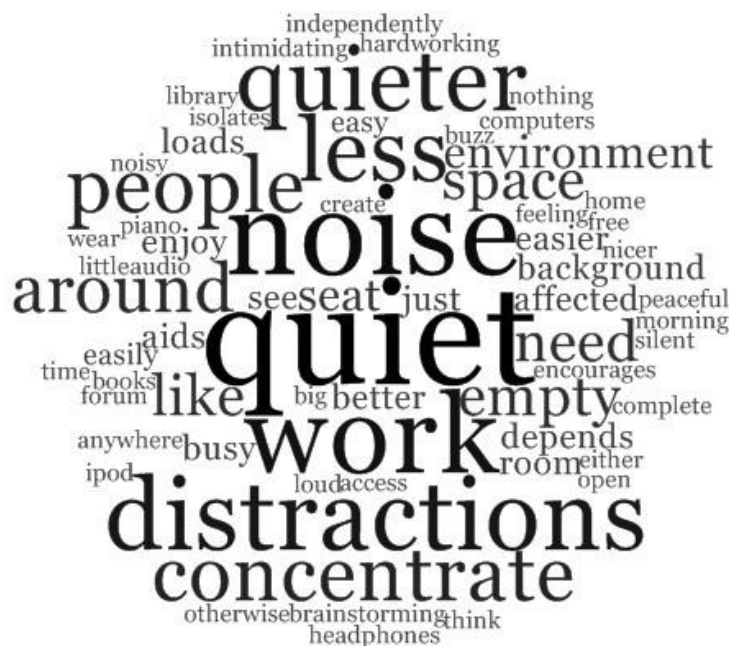


Source: Author's Fieldwork

Some participants[32] who chose 'empty' wrote:

"I like feeling the open space and people around me but I don't enjoy loud noise. Or when they play piano" [Bench, Male, 1, BS]

And,

---

[32] Each participant quote is followed by the participants' demographic variables presented in the following order [Regular Area, Gender, Year of Degree, abbreviated College] (see also Table 5.1)

"I get very easily distracted if the here are lots of people around" [Desk, Female, 3, SSIS]

And,

"Less distractions and it's quieter so easier to concentrate" [Bench, Male, 5, BS].

While those who preferred 'busy' said:

"I like the buzz when I'm studying. Don't want complete silence" [Bench, Female, 2, H]

And,

"Having other people working around me makes me concentrate better" [Bench, Female, 2, SSIS]

And,

"I love seeing people around in the forum" [Bench, Male, 1, BS].

Other participants who had 'no preference' explained that:

"Anywhere is easier to work than at home" [Bench, Female, 5, BS]

Or,

"Either way I wear headphones so I create my own audio environment. It is nicer to see people moving around than a big empty space" [Bench, Male, 3, CLES].

Therefore, for question 13, the reasons behind the majority of participants' response to preferring an 'empty' Forum rather than a busy one, is primarily based on noise, which snowballs into affecting distraction and hence concentration levels. Whereas the people who favour the alternative 'busy' atmosphere to work in, enjoy the some background noise while working and seeing other people around motivates them. This finding is similar to section 4.4.1: Unspoken Reciprocity on Visuality, where participants felt motivated to work in an environment where they were being potentially monitored. It further supports evidence (Dovey, 2008; Lefebvre, 1991) that people being present in a work space encouraged participants to work, as they felt they were monitored by one another and through this feeling improved the own work progress. Furthermore, the respondents who had no preference, reasoned that the Forum provided a workspace away from home to concentrate and that wearing headphones was their solution to combat the noise issue.

## 5.3.2. Forum Working

'Forum working', refers to a particular working habit among participants within the Forum; the feeling of individuality or community. In Chapter 4, section 4.4.2: Isolated Scholar, it was suggested that there was a strong sense of the individual person preferring to work on their own private work in a public-communal area. Furthermore, the analysis revealed that there was a hint of 'community' feel among some small groups of people. Therefore, question 14 was included to shed light on the above data and the results are displayed in Figure 5.5.

It is evident from Figure 5.5 that the divide between feelings of individuality and community is very small, but feelings of 'individuality' (54.9%) still prevail over 'community' (45.15%) albeit by only a small percentage. Nevertheless, a clearer image is created of the different senses which can be further seen from participants' explanations of their reasons.

**Figure 5.5: Question 14**

**Do you feel you are working as part of a community or individually?**



- Community
- Individuality

45.1%

54.9%
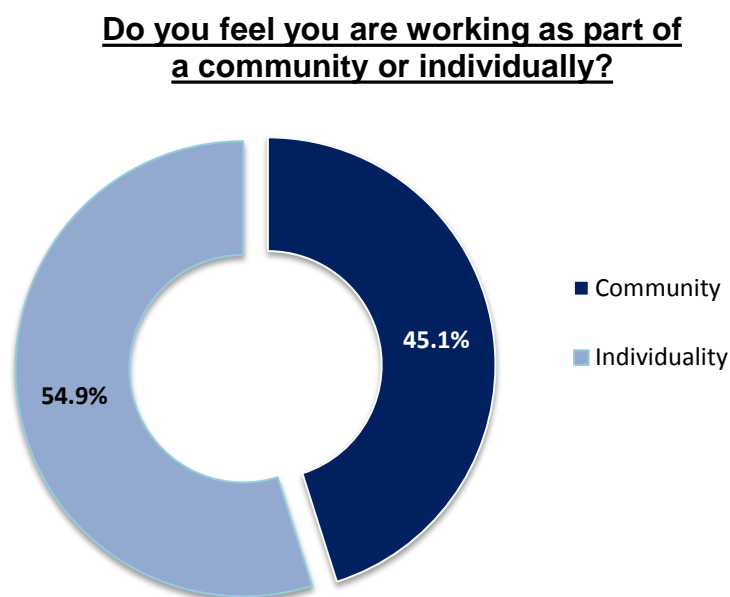
Source: Author's Fieldwork

Participants who chose the 'community' sense option, believe that:

> "Near deadlines there's a big community feel among people of same year/course" [Bench, Male, 3, H]

Reasons for the above are explained further:

> "Love how you see the same people around that time, and everyone has an *unspoken rule* to look after each other's stuff when you leave. [Bench, Female, 2, H: emphasis added]"

And,

> "Other people working around is good motivation" [Desk, Female, 3, CEMPS]

Or,

> "Working with other people encourages me" [Desk, Male, 3, SSIS]

Because,

> "I feel there is shared empathy" [Desk, Male, 5, BS].

However, the participants who chose 'individually' have a different interpretation:

> "I am working for me and with my own method so it is individual but it is true that sometimes having people working around you can give you the idea that you're on the same boat, part of a group so both really." [Sofa, Female, 5, SSIS]

Or,

> "My reading is individual - my collegiate work is done outside in the public areas of the Forum" [Desk, Female, 3, SSIS].

Therefore, participants divided individual work as working alone and group work as communal, while one participant pointed out that:

> "People don't tend to interact with each other" [Desk, Male, 1, CLES].

### 5.3.3. Experience Dialogue

Question 16 asked: Which words best describe your experience in the Forum? Table 5.3, shows the top 10 most frequent words and their associated 'similar words' which formed part of that specific word's frequency.

**Table 5.3: Nvivo Word Frequency for Question 16**

| Word | Frequency | Similar Words |
|------|-----------|---------------|
| Busy | 27 | busy |
| Study | 17 | study, studying, work, working |
| Productive | 14 | productive |
| Good | 12 | effective, good, just |
| Sociable | 12 | sociable, social |
| Comfortable | 11 | comfortable, convenience, convenient, easy |
| Lively | 9 | alive, animated, experience, know, lively |
| Relaxed | 8 | easy, relaxed, relaxing |
| Friendly | 7 | friendly, friends |
| Social | 7 | social, socialising |

Source: Author's Fieldwork

From Table 5.3, it is evident that the most frequent word describing one's experience of the Forum is 'busy'. This is something which has become an increasing perspective of the Forum worker, when concerning their experience of the space. The second most popular word was 'study', which also featured as the top common word in the whole questionnaire (see: Figure 5.2). However, neither 'busy' nor 'study' can be attributed to a sense of experience. Therefore, the next frequent words of 'productive, good, sociable and comfortable' have a stronger merit in the explanation of one's experience of the Forum. Overall, looking at Table 5.3, it can be said the experience of studying in the Forum, albeit its busyness is a positive one.

### 5.3.4. Words of Motivation

This subsection on 'words of motivation' is termed so in order to summarise responses to question number 21 which asked: "In your own words can you give the reasons you come to the Forum?" Table 5.4 summarises the top 10 most frequent words the 102 participants used as their reasons for visiting the Forum, and their associated 'similar words' which formed part of that specific word's frequency.

**Table 5.4: Nvivo Word Frequency for Question 21**

| Word | Frequency | Similar Words |
|------|-----------|---------------|
| Study | 69 | studies, study, studying, working |
| Lunch | 27 | lunch |
| People | 21 | people |
| Friends | 20 | friendly, friends |
| Place | 12 | location, locations, place, space |
| Library | 10 | library |
| Social | 10 | sociable, social, socialise, socialising, socialize |
| Meeting | 7 | meeting, meetings |
| Lectures | 5 | lecture, lectures |
| Relaxed | 5 | relax, relaxed |

Source: Author's Fieldwork

From Table 5.4, one can see the most frequent word as a reason for visiting the Forum is to 'study'. This further confirms that the participants taking part in the questionnaire were correctly identified as people who were visiting the Forum to study or work, which meant that the sample can be defined as multi-locational workers. The second most common word was 'lunch', with 'people' and 'friends' having similar frequencies. Recalling the results from chapter 4: section 4.3.2, these and previous results are aligned with studying being one of the most common activities as well as socialising and further reasons for visiting include access to resources such as research material (books, printing) or food (ie lunch).

Participants' responses from question 21 were coded to be further analysed with statistical tests later in the chapter, thus forming the variable 'reason'. The coded responses are summarised in Figure 5.6, with the reason 'study' being the most common reason (65%) for visiting the Forum among the 102 participants, while 'social' reasons were the second most popular at only 19% of participants. Furthermore, 'access' to resources was the third most common reason at 13% and 3% of participants answered with "everything" or "all of the above".

**Figure 5.6: Question 21 Coded Responses**

**Coded: Question 21 Responses**
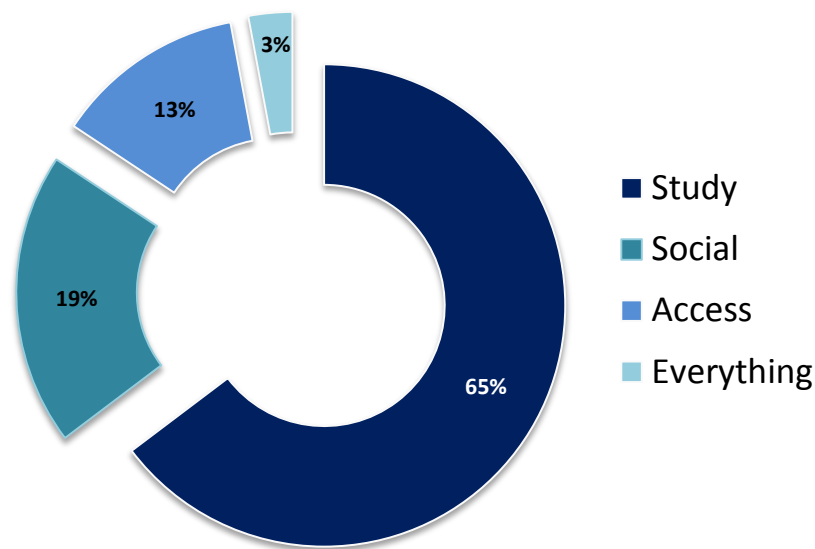


Source: Author's Fieldwork

Regarding this section on the qualitative responses to questions, 13, 14, 16 and 21 it can be summed up that there is a preference for an empty Forum because as the participants have said it is currently very busy. One of the main reasons the preference leans towards the 'empty' preference is due to the noise levels in the Forum. Furthermore, this contributes further to the majority of participants' belief that they have a higher sense of 'individuality' rather than a 'community' feel within the Forum space. Nevertheless, as question 16 responses show, their overall experience of the Forum is a positive one and yet a large portion of participants continue to visit the Forum for 'study' purposes.

## 5.4.    Likert Scale Questions Summary of Results

In order to capture an individual's perception on numerous variables, Likert Scales were used, to elicit information about attitude and behaviour (Kent, 1999). A summate rating scale was used in Questions 15, 17 – 20, to determine a participant's likelihood, agreement, importance or satisfaction of different variables regarding the Forum space and their perceptions of it.

The results are presented in a variety of figures and tables depicting the participants responses, and where relevant statistical univariate analysis. The

mode, sum and mean scores are presented in tables to aid analysis of different variables. While the mode and sum results represent the most common response and total score for each variable, the mean is used to understand where on the 1 to 5 scale the overall variable lies. The standard deviation provides a "sophisticated measure of dispersion that takes the average of the distances between the mean score and all the other values in the set" as Kent (1999, p. 176) explains, thus further explaining the results. Furthermore, the values from the goodness of fit Chi-square Test[33] ( $x^2$ ) are also presented which will be used to calculate the statistical significance of a variable when compared to the total of all the sample variables. As Finn et al. (2000, p. 217) explain: "if the probability of [$P$] is small, then the result is unlikely to be due to chance i.e. the result in the sample is likely to exist in the population" and they further concur that $P$=0.05 is the widely acceptable level within the social sciences. When a level of $P$=0.05 is assigned this means that an estimate of 5% will be incorrect and thus 95% correct which then can be argued as being statistically significant (Pallant, 2005). The researcher will reject any estimate above this level and accept below, thus: $P<0.05$. Moreover, it is suggested that the if the standard deviation result is proportionally very much larger than one third (1/3) of the value of the mean, then the mean loses some of its significance as a representative of the data (Balsley, 1970), hence the Chi-square Test ( $x^2$ ) and Significance Value (Sig. Value) will be taken into consideration when examining the results. Therefore, Balsley's (1970) suggestion will be implemented for the univariate analysis.

### 5.4.1. Likelihood

Question 15, asked participants to rate the likelihood of 6 different scenarios (see Appendix 3: Questionnaire):

1. Speaking to someone who walks by and recognizes you
2. Asking someone to keep an eye on your belongings

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[33] It is important to note here that there are two types of chi-square tests: goodness of fit (also known as one-sample chi-square) and the chi-square test of independence. The latter determines whether two variable are related; a test of association, whereas the former explores the proportion of cases that fall into the various categories of a single variable. In this thesis the chi-square test goodness of fit is used as a univariate test rather than bivariate as there are other bivariate tests which were conducted and hence believed to provide similar information (Pallant, 2005).

3. Reserving your work space when you step away for a while

4. Making a new friend in the Forum

5. Wear headphones

6. Initiating interactions with the people around you,

Of which 1, 2, 4 and 6, can be grouped to form a 'Q15' variable which indicate aggregate likelihood of 'interaction'.

Figure 5.7, reflects the results from question 15, where the variables have been ordered horizontally from likely to unlikely (left to right) and vertically dark to light. The variable with the most likelihood of occurring is: 'Speaking to someone who walks by and recognises you' (93% total of very likely and likely), with the next likely variable being: 'Wear headphones while working' (77% total of very likely and likely), while the variables: 'initiating interactions'(39% total of very likely and likely) and 'making a new friend in the Forum' are the least likely (27% total of very likely and likely).

Table 5.5 illustrates the likelihood of certain variables occurring in the Forum space. This is done to show that the mean can be used as a representative of the data. The table shows the univariate results of the data in question 15: mean standard deviation, chi square and significance value.

**Figure 5.7: Question 15 Results**



To what extent do you believe the following are unlikely or likely?
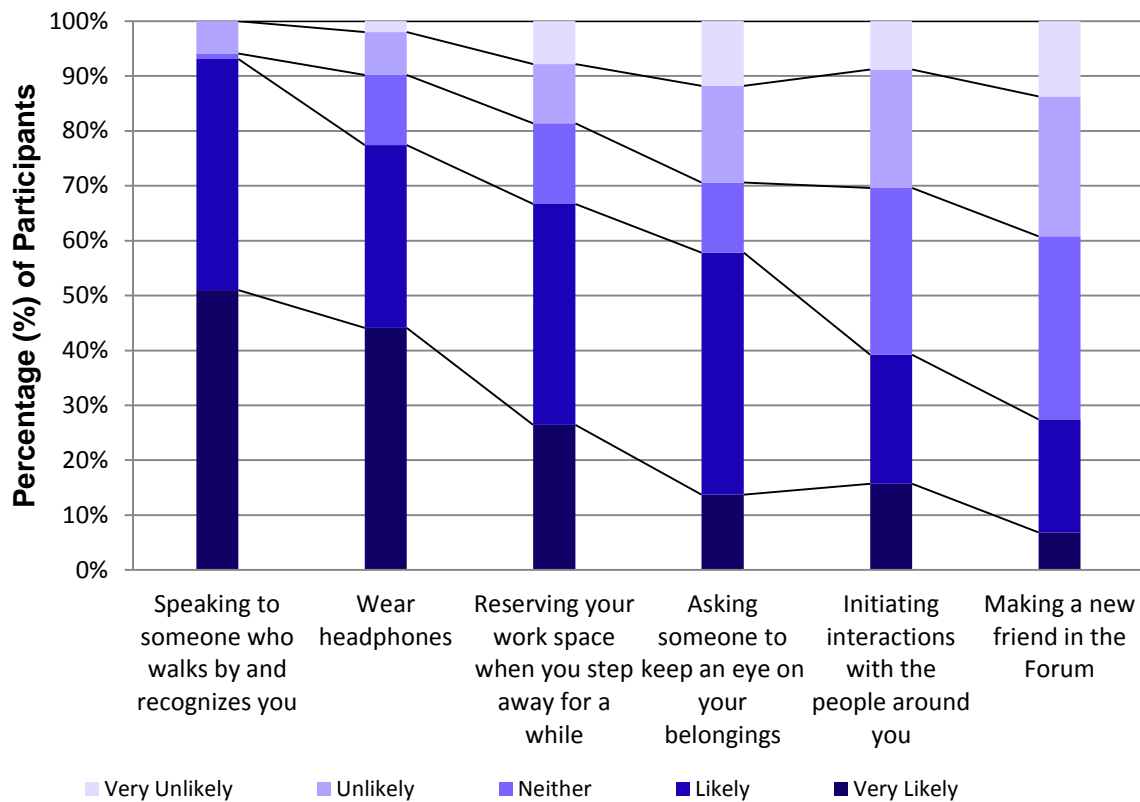
*Variables ordered from likely to unlikely (left to right)

Source: Author's Fieldwork

**Table 5.5: Univariate Results: Likelihood of Question 15 Variables**

| Variable | n | Mode | Sum | Mean | Std. Deviation | Chi-Square | 1/3 Mean | Sig. Value |
|---|---|---|---|---|---|---|---|---|
| Speaking | 102 | 5 | 447 | 4.38 | .78 | 78 | 1.46 | .000 |
| Watch Belongings | 102 | 4 | 337 | 3.30 | 1.25 | 38.10 | 1.10 | .000 |
| Reserving Space | 102 | 4 | 374 | 3.67 | 1.21 | 36.24 | 1.22 | .000 |
| New Friend | 102 | 3 | 287 | 2.81 | 1.12 | 21.43 | 0.94 | .000 |
| Head Phones | 102 | 5 | 418 | 4.10 | 1.03 | 65.55 | 1.37 | .000 |
| Interaction | 102 | 3 | 322 | 3.16 | 1.19 | 13.59 | 1.05 | .009 |
| Q15 | 102 | 3.75 | 348 | 3.41 | .77 | 35.26 | 1.14 | .001 |
| Q15_total | 102 | 3.33 | 364 | 3.57 | .60 | 30.39 | 1.19 | .011 |

(Source: Author's Fieldwork)

It is suggested that the if the standard deviation result is greatly larger than one third (1/3) of the value of the mean, then the mean loses some of its

significance as a representative of the data (Balsley, 1970). With this in mind, as Table 5.5 shows, the standard deviation is not very much larger than 1/3 of the mean; when concerning the variables from question 15, thus it can be argued that the mean value represents the sample data with confidence. Therefore, the order of the variables in Figure 5.7, are arranged so that when read from left to right the most likely variables are presented to the least likely.
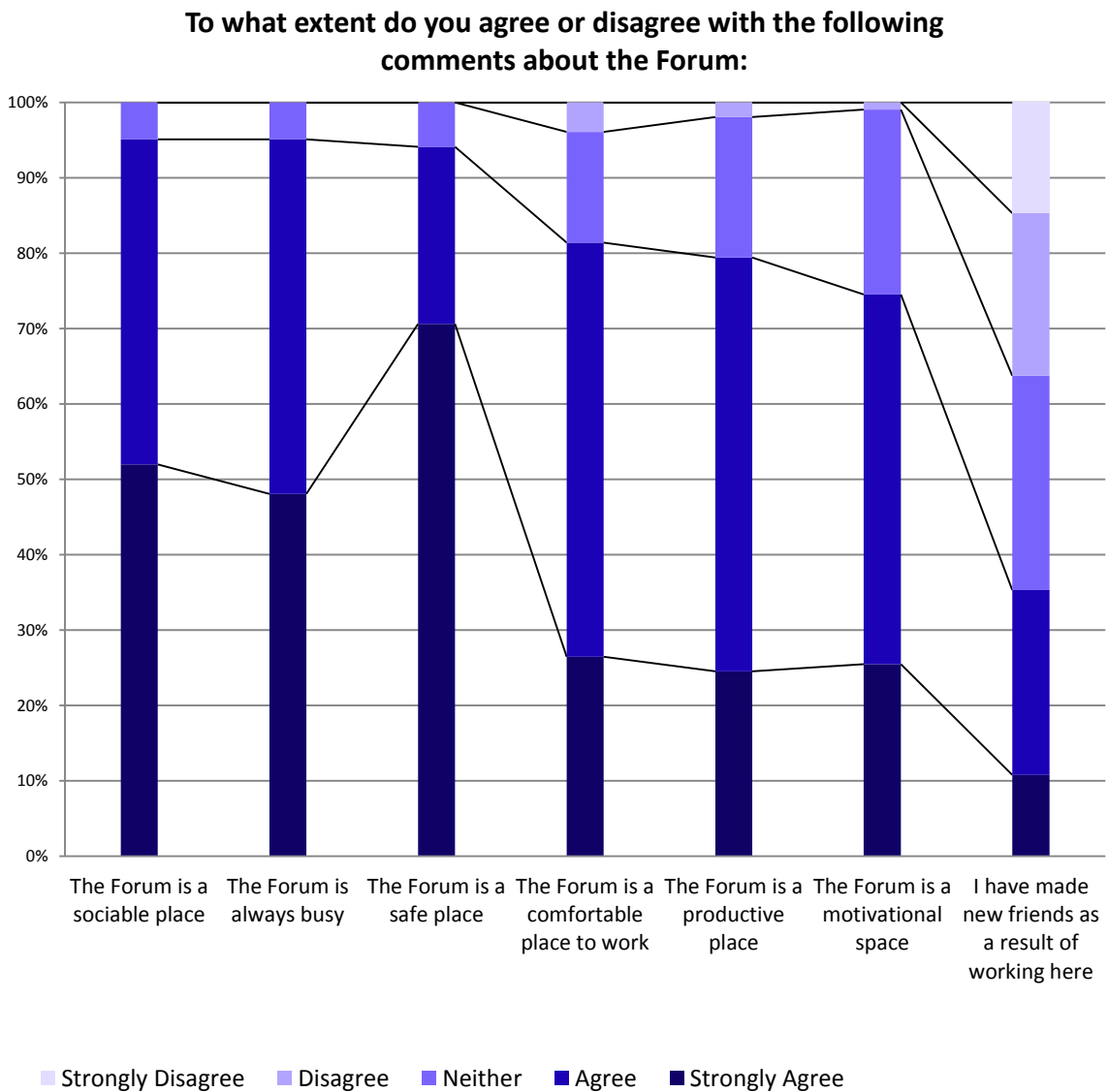
Furthermore, this suggests that the results for Question 17 and 18 below will also follow a similar pattern and the mean will be used as significant demonstrative of the data.

## 5.4.2. Agreement

Questions 17 and 18, asked participants to rate the extent to which they agreed or disagreed with different scenarios. Question 17 provided the positive comments while question 18 the negative of the same variable, for example: the Forum is a productive place versus the Forum is an unproductive place. The average result for each opposing variable was calculated and the results are presented in Figure 5.8 and Figure 5.9. Split into two parts, the first part presents the comments associated with the Forum and the part 2 scenarios about the individual's feelings.

Figure 5.8 refers to the variables which regard the Forum, for example whether the participant thinks the Forum is sociable or busy or safe place. The variable which was by far in the strongly agree scale was: 'The Forum is a safe place' (71%), however the variables: 'The Forum is a sociable place' (95% total of strongly agree and agree) and 'The Forum is always busy' (95% total of strongly agree and agree) had the highest overall agreement. The variables regarding comfort, productivity and motivation all scored above 70% (total of strongly agree and agree). Therefore, it can be deduced the overall impression of the Forum space is a positive one, with the exception of the variable 'I have made new friends as a result of working here' which scored 35% (total of strongly agree and agree) scale with the majority of people ranking it a 3 out 5 (28%) on the Likert Scale.

## Figure 5.8: Questions 17 and 18 Average Results (Part1)

**To what extent do you agree or disagree with the following comments about the Forum:**



■ Strongly Disagree  ■ Disagree  ■ Neither  ■ Agree  ■ Strongly Agree
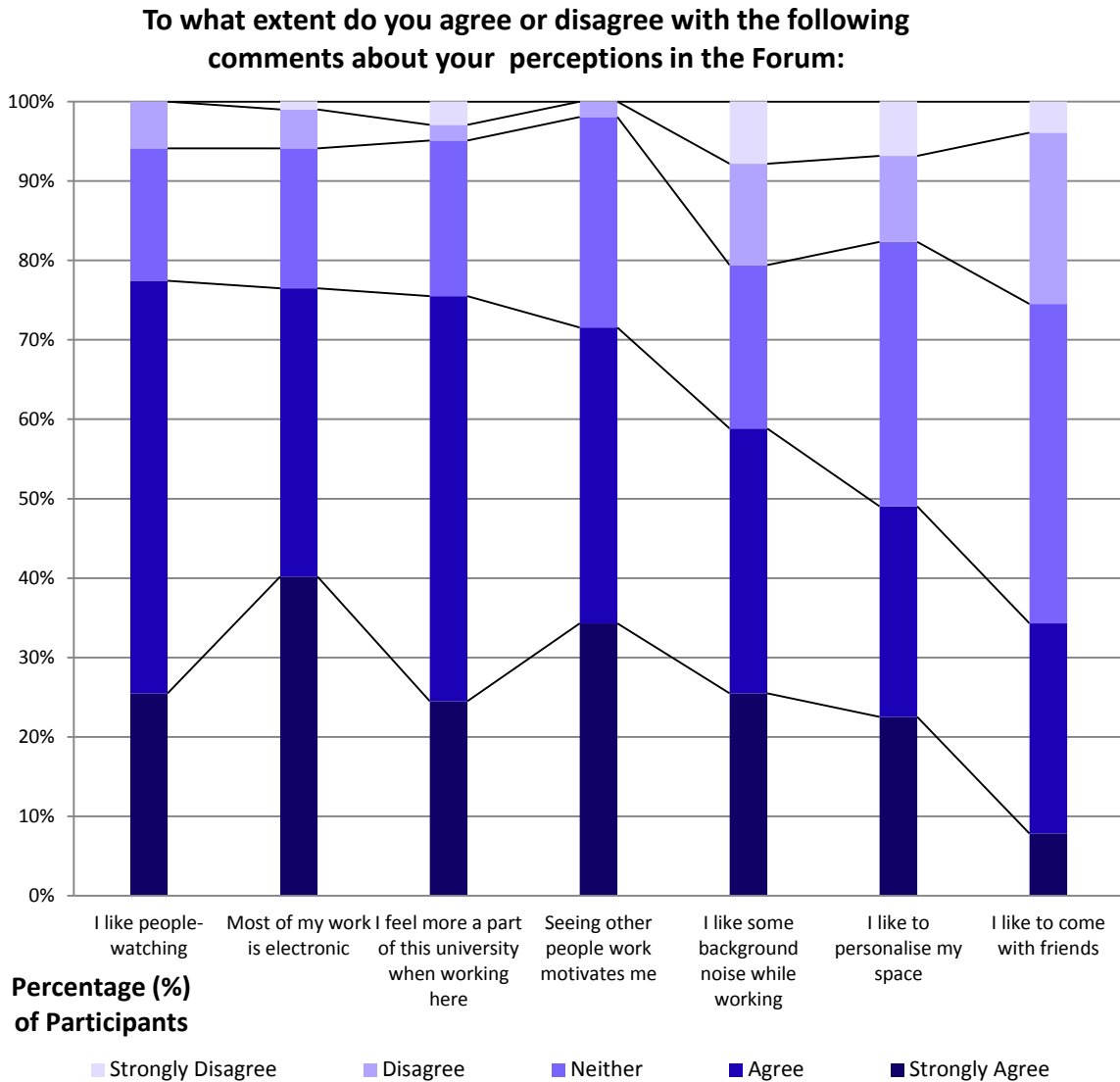
***Variables ordered from likely to unlikely (left to right)***

<u>Source: Author's Fieldwork</u>

Figure 5.9 depicts the variables in questions 17 and 18 which relate the individual's preferences of particular variables, for example: 'I like some background noise while working' or 'I like to come with friends'. The variable with the highest total of strongly agree and agree scale was: 'I like people-watching' (77%) with 'Most of my work is electronic' (76%) and 'I feel more a part of this university when working here' (75%) being equally in total agreement. Similar to Part 1, the general feelings of individual preferences scored highly with the exception of the variables: 'I like to personalise my space' (49% total of strongly agree and agree) and 'I like to come with friends' (34% total of strongly agree and agree).

**Figure 5.9: Questions 17 and 18 Average Results (Part 2)**

**To what extent do you agree or disagree with the following comments about your perceptions in the Forum:**



Percentage (%) of Participants

■ Strongly Disagree ■ Disagree ■ Neither ■ Agree ■ Strongly Agree

***Variables ordered from likely to unlikely (left to right)**

<u>Source: Author's Fieldwork</u>

It is important to note here, the recurring theme where participants are scoring the Forum highly in sociable attributes and people being around but scoring other 'friend' attributes, such as 'made new friends' and 'I like to come with friends' quite low and individuality higher than community. With this in mind, a further variable will be computed which provides an average of the 'sociable' variables together; named 'Q17 – sociability', to be used for comparison against the 'Q15 – interaction' variable for further statistical tests.

### 5.4.3. Importance

Questions 19, asked participants to rate the extent to which they felt certain Forum characteristics were very important to unimportant:
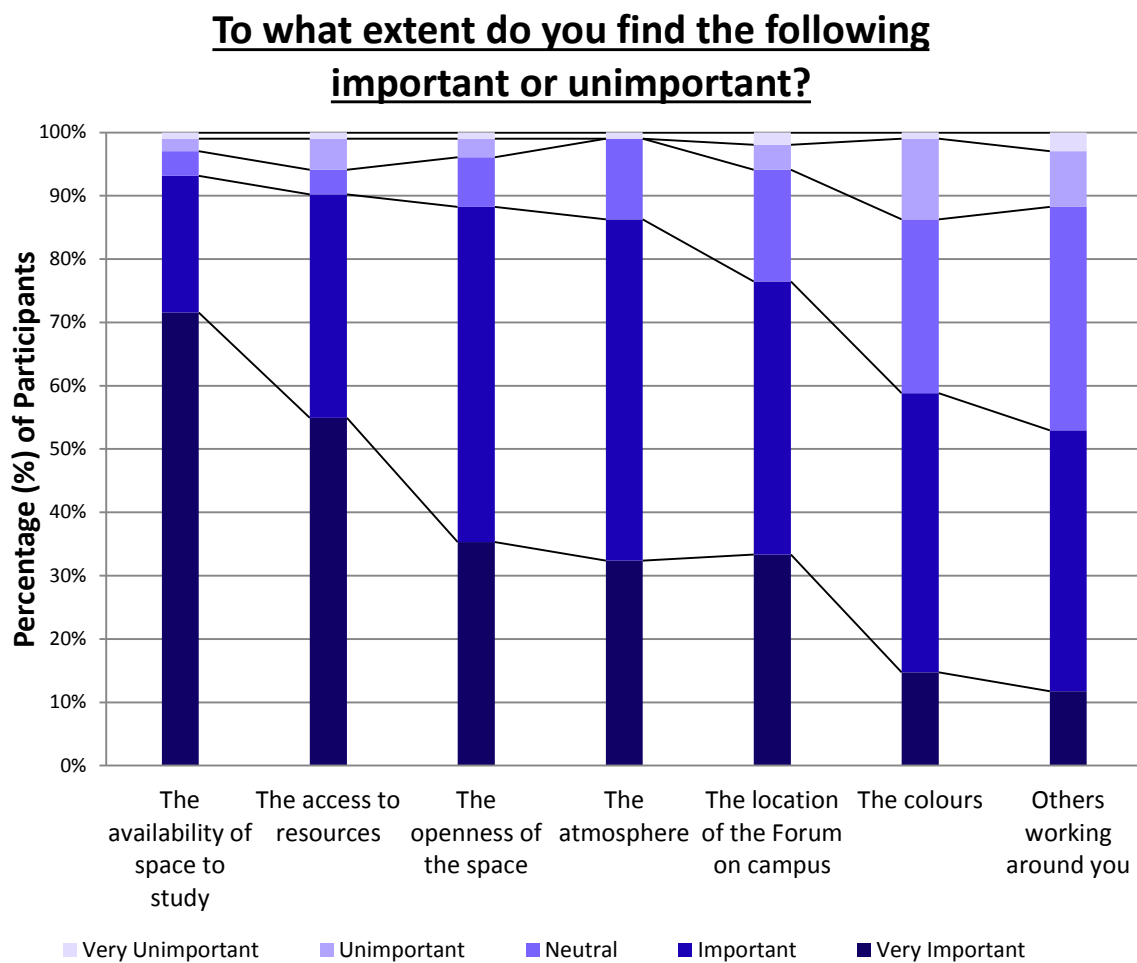
1. The location of the Forum on campus
2. The atmosphere
3. The openness of the space
4. The colours
5. The access to resources
6. The availability of space to study
7. Others working around you

The 7 characteristics were chosen as a result of their high occurrence in conversations during the interview stage of data collection.

Figure 5.10 reflects the results of question 19. The variable rated with the highest importance is: 'The availability of space to study' (72%, in very important and 93% total of very important and important). 'The access to resources' (90% total of very important and important) is closely just as important, with the openness of the space (88%), atmosphere (86%) and location on campus (76%) also scoring highly important. The 'colours' variable received the highest score of the very *un*important and *un*important scale (14%).

In contrast to the results in questions 15, 17 and 18 where 'people watching' scored high in likelihood of speaking to someone who recognises you in the Forum and high agreement of likeness to people-watching. The variable here of 'others working around you' scored the lowest on the importance scale with the majority of people ranking the variable 3 out of 5 (35%).

**Figure 5.10: Question 19 Results**

## To what extent do you find the following important or unimportant?



*Variables ordered from likely to unlikely (left to right)*

Source: Author's Fieldwork

Furthermore, an aggregate total of Forum characteristics will be computed to create another variable called: 'Q19' of overall importance of Forum characteristics.

**Table 5.6: Univariate Results: Importance Variables**

| Variable | n | Mode | Sum | Mean | Std. Deviation | Chi-Square | 1/3 Mean | Sig. Value |
|---|---|---|---|---|---|---|---|---|
| Location | 102 | 4 | 410 | 4.02 | .92 | 66.43 | 1.34 | .000 |
| Atmosphere | 102 | 4 | 425 | 4.17 | .72 | 66.00 | 1.39 | .000 |
| Openness | 102 | 4 | 427 | 4.19 | .78 | 108.10 | 1.40 | .000 |
| Colours | 102 | 4 | 366 | 3.59 | .93 | 55.06 | 1.20 | .000 |
| Resources | 102 | 5 | 447 | 4.38 | .86 | 117.31 | 1.46 | .000 |
| Space Availability | 102 | 5 | 470 | 4.61 | .75 | 183.98 | 1.54 | .000 |
| Other people | 102 | 4 | 357 | 3.50 | .92 | 59.47 | 1.17 | .000 |
| Q19 - Importance | 102 | 4.33 | 406 | 3.98 | .64 | 72.90 | 1.33 | .000 |

Source: Author's Fieldwork

As Table 5.6 suggests, the standard deviation is not larger than 1/3 of the value of the mean, therefore overall importance, which scored a mean value of 3.98 lies on the positive end of the 'very important' scale. Furthermore, the chi-square test revealed a significance value of 0.00, which indicate that there is significance for the overall importance of the characteristics of the Forum.

### 5.4.4. Satisfaction

Questions 20, asked participants to rate their satisfaction of 7 Forum characteristics, of which 2, 3 and 7 were similar to question 19:

1. Temperatures
2. Atmosphere
3. Availability of space to study
4. Noise levels
5. Ambiance (light levels)
6. Technology Access (Eg: Wifi or power outlets)
7. Others working around you

Figure 5.11, depicts the results of question 20. 'Technology Access' was the highest variable which scored 45% on 'very satisfied', whereas 'atmosphere' was rated with the highest satisfaction level of 90% (total of very satisfied and satisfied).

In comparison to the importance score in question 19, the variable 'others workilook sgood ng around you' scored higher in question 20 with a total of 62% (in very satisfied and satisfied scale).

'Availability of space to study' scored higher in the total of very *un*satisfied and *un*satisfied (43%) than the reverse (33%). This result is on the opposite end of the scale of the same variable in question 19, where it was scaled as one of the most important characteristics of the Forum, but is also one of the least satisfied Forum characteristics. Furthermore, while browsing through the many available social media relating to the Forum, Plate 5.1 was posted online to highlight the lack of available spaces. The image was 'liked' by 143 people, which means that 142 people saw the image and clicked the 'like button'. The act of an individual clicking the 'like' button (which is visually represented by a thumbs

up) acts as a shortcut to commenting on the image in order to replace short affective statements such as 'awesome' or 'agreed' or more plainly 'I like this' (Gerlitz & Helmond, 2013). Therefore, given that, there are 143 'likes' this translates into 143 people which are in agreement with the image caption: "the search for study spaces is getting desperate" the image in Plate 5.1, it suggests that further emphasis can be placed on the need for more spaces.

**Plate 5.1: The need for more available spaces**



**(Source: 'Spotted in the Forum' Facebook page, 2014)**
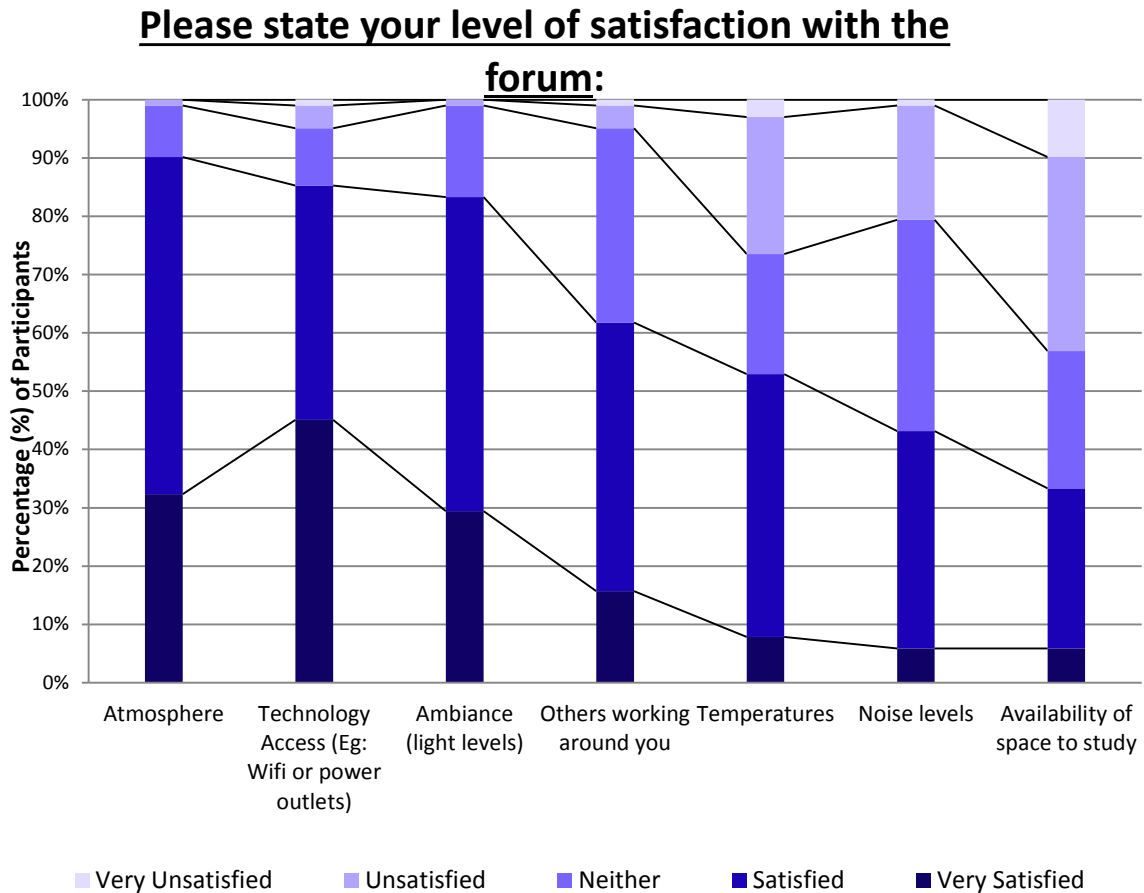
## Please state your level of satisfaction with the forum:



*Variables ordered from likely to unlikely (left to right)

Source: Author's Fieldwork

As Table 5.7 suggests, the standard deviation is not larger than 1/3 of the value of the mean, therefore overall satisfaction, which scored a mean value of 3.68 lies on the positive end of the 'very satisfied' scale. Furthermore, the chi-square goodness of fit test (59.29) revealed a significance value of 0.00, which indicates that there is significance for the overall satisfaction of the characteristics of the Forum.

**Table 5.7: Univariate Results: Satisfaction Variables**

| Variable | n | Mode | Sum | Mean | Std. Deviation | Chi-Square | 1/3 Mean | Sig. Value |
|---|---|---|---|---|---|---|---|---|
| Atmosphere | 102 | 4 | 430 | 4.22 | .64 | 80.43 | 1.41 | .000 |
| Space Availability | 102 | 2 | 292 | 2.86 | 1.11 | 28.00 | 0.95 | .000 |
| Noise | 102 | 4 | 334 | 3.27 | .88 | 57.31 | 1.09 | .000 |
| Temperatures | 102 | 4 | 338 | 3.31 | 1.01 | 55.16 | 1.10 | .000 |
| Ambience | 102 | 4 | 420 | 4.12 | .69 | 62.00 | 1.37 | .000 |
| Technology | 102 | 5 | 433 | 4.25 | .86 | 89.86 | 1.42 | .000 |
| Other people | 102 | 4 | 379 | 3.72 | .81 | 76.33 | 1.24 | .000 |
| Q20-Satisfaction | 102 | 4 | 375 | 3.68 | .50 | 59.29 | 1.23 | .000 |

Source: Author's Fieldwork

In a tentative summary for this section, the highest variable of likelihood is: "Speaking to someone who walks by and recognizes you" which scored a mean of 4.38 and the least likely scenario is "Making a new friend in the Forum" which scored a mean of 2.81 which while lower than the average of the question ($\mu = 3.57$) falls closer to the 'neither' unlikely or likely point. For the agreement scenarios which was split into two parts: 1) Comments regarding the Forum space and 2) Scenarios about the individuals feelings / perceptions. For the first part, the variables "The Forum is a safe place" and "The Forum is a sociable place" scored the highest mean scores of 4.44 and 4.27 respectively, with the 'safe' variable scoring one of the highest means in the entire questionnaire. While for the second part, the highest scoring variable was: "I feel more a part of this university when working here" ($\mu = 3.98$) and lowest was "I like to personalise my space" ($\mu = 1.74$) which meant participants either 'strongly disagreed' or 'disagreed' thus indicating the opposite of the variable is true. The importance of "Others working around you" ($\mu = 3.50$) was attributed as the lowest ranking variable while, "The availability of space to study" ($\mu = 4.61$) was ranked very highly which also makes it one of the highest ranking variables in the questionnaire. On the other hand over, the same variable received the lowest ranking score of $\mu = 2.86$ in terms of satisfaction where the majority of participants answered 'neither unsatisfied nor satisfied', whereas "technology" access as a variable received an overall mean score of 4.25, making it the most

satisfied attribute of the Forum and the variable of "atmosphere" (μ = 4.22) the second most satisfied.

Concluding the univariate analysis, the chapter will now turn to analysing how the data or individuals are distributed in relation to two variables; bivariate analysis, for example gender or area (simplified) they work in.

## 5.5.    Bivariate Analysis

The main purpose of bivariate analysis is to find the potential statistical significant associations between the groups of the sample according to their demographic information (gender or age) and working characteristics (college, area both simplified and specific, etc…) and their likelihood, agreement, importance or satisfaction of different Forum attributes.

First, the results of the Mann-Whitney U test will be considered, using the variable 'Area' (simplified) across all the relevant variables to establish if a relationship exists between where people have chosen to sit and work and other variables. The Mann-Whitney U test will determine between the two independent variables if a statistical significance exists. Following this, the results from the Kruskal-Wallis test will be presented for the attributes which have three or more groups of variables against a dependent variable to further determine a statistical significance. Any statistical significance will be highlighted further using the test of Spearman's Rank Order Correlation to reveal the strength of the relationships (Pallant, 2005). These results will be further supported by the analysis of Ordinal Logistic Regression, which applies a model that incorporates the ordinal nature of the dependent variable (Norušis, 2011b). This will be computed in order to determine causal factors within significant variables in order to further support strong relationships in the data. "When logistic regression is calculated, the regression coefficient (b1) is the estimated increase in the log odds of the outcome [factor variable] per unit increase in the value of the exposure [dependent variable]. In other words, the exponential function of the regression coefficient ($e^{b1}$) is the odds ratio associated with a one-unit increase in the exposure" explains Szumilas  (2010, p. 227). Therefore, the results of the test will be stated as the log odds and Odds Ratio where:

**Equation 5.1: Odds Ratio Formula**

$$Odds\ Ratio = e^{\log odds}$$

### 5.5.1.  Mann Whitney U Results

The only possible variables which can be used to conduct the Mann Whitney U test are those with only two groups:

- gender; male and female
- international; yes or no
- area (simplified); upstairs and downstairs
- individuality and community

The following results tables show the four variables (Gender, International, Area (Simplified; upstairs and downstairs), and individuality) which have been tested against all the relevant variables in the questionnaire, which have a statistical significance. Recalling Chapter 3, the level of probability that is adopted in these tests is 0.05. As Finn et al. (2000, p. 217) explain: "if the probability of [$P$] is small, then the result is unlikely to be due to chance i.e. the result in the sample is likely to exist in the population" and they further concur that $P$=0.05 is the widely acceptable level within the social sciences. When a level of $P$=0.05 is assigned this means that an estimate of 5% will be incorrect and thus 95% correct which then can be argued as being statistically significant. The researcher will reject any estimate above this level and accept below, thus: $P$<0.05.

Table 5.8 shows the results from the Mann-Whitney U test, Z value and Statistical Significance of the variables which scored : $P$<0.05. The three variables are:

- The likelihood of 'Initiating interactions with the people around you' (Interaction)
- The importance of 'colours' in the Forum space (colours)
- The overall importance of Forum characteristics (Q19 – Importance)

It can be deduced that gender against 'interaction' shows a Z value of -2.256 and a significance level of $P$=0.024, which means that there was a statistically

significant difference between the way males and females perceived the likelihood of initiating interactions with the people working around them.

**Table 5.8: Test Statistics – Grouping Variable: Gender**

|  | Interaction | Colours | Q19 - Importance |
|---|---|---|---|
| Mann-Whitney U | 972.500 | 1010.000 | 985.000 |
| Z | -2.256 | -2.060 | -2.148 |
| Asymp. Sig. (2-tailed) | .024 | .039 | .032 |

Source: Author's Fieldwork

Conducting an Ordinal Logistic regression[34] on the above shows that for males, for a one unit increase in gender, a 0.82 decrease in the log odds of the likelihood in initiating interactions can be expected, given that all of the other variables in the model are held constant. Hence, the odds ratio can be calculated: 0.44, which means that the odds for males in initiating interactions with the people around them are 0.44 times lower than females. Therefore, Females perceive that they are more likely to initiate interactions more so than males.

Gender against the variable of the importance of 'Colours' in the Forum space shows a Z value of -2.060 and a significance level of $P$=0.039, indicating a statistical significance between males and females importance level of colours within the Forum. A further test of Ordinal Logistic regression shows that for males, for a one unit increase in gender, a 0.77 increase[35] in the log odds of a higher level of importance attached to the colours of the Forum can be expected given that all of the other variables in the model are held constant. Furthermore, Table 5.8 also demonstrates that the variable "Q19 – Importance" has a Z value of -2.148 and a significance level of $P$=0.032, therefore, overall importance attributed to different Forum characteristics is overall different between males and females. The Ordinal Logistic Regression showed that[36], the odds ratio = 2.15, which means that males are 2.15 times more likely to attach more importance to certain Forum characteristics than females are.

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[34] See 01)Gender and Interaction for the SPSS Test Statistics

[35] See 02)Gender and Colours for the SPSS Test Statistics

[36] See 03)Gender and Q19 – Importance, for the SPSS Test Statistics

**Table 5.9: Test Statistics – Grouping Variable: International**

| | New Friend | Background Noise | Colours | Space Availability | Age |
|---|---|---|---|---|---|
| Mann-Whitney U | 873.500 | 970.000 | 1020.000 | 1018.000 | 995.500 |
| Z | -2.944 | -2.225 | -1.979 | -2.380 | -2.235 |
| Asymp. Sig. (2-tailed) | .003 | .026 | .048 | .017 | .025 |

Source: Author's Fieldwork

Table 5.9 summarises the test results of 'International' as the grouping variable and the 5 variables which have been identified as being statistically significant. The variable of 'international' which asked participants to simply state 'yes' or 'no' to whether they were an international student is related to the following variables:

- Likelihood of "Making a new friend in the Forum"
- Agreement of "I like some background noise while working"
- Importance of "Colours" and "The availability of space to study"
- and "Age"

This shows that there is a relationship between whether people are international or not to the above variables. The first two are the most relevant to this thesis therefore they will be looked at further next conducting an Ordinal Logistic Regression test.

To recap, ordinal logistic regression as described by McCullagh (1980) is a useful addition of the standard binary logistic model to scenarios where the dependent variable is represented by ordered categorical values (Brant, 1990). The process of obtaining the necessary and relevant results from this test will be explained next.

Using the statistical software, SPSS, the dependent and independent variables are chosen, in the case example here, the dependent variables are: 'New Friend' and 'Background Noise' (the example uses the former) while the independent variable is 'International'. Table 5.10, is computed and suggests that the $P=0.003$, suggesting that the model fits correctly and that there is statistical significance between the dependent (new friend) and independent (international) variable.

## Table 5.10: Model Fitting Information

| Model | -2 Log Likelihood | Chi-Square | df | Sig. |
|---|---|---|---|---|
| Intercept Only | 38.534 | | | |
| Final | 29.522 | 9.011 | 1 | .003 |

Link function: Logit.

## Table 5.11: Parameter Estimates

| | | Estimate | Std. Error | Wald | df | Sig. |
|---|---|---|---|---|---|---|
| Threshold | [NewFriend = 1] | -1.411 | .317 | 19.751 | 1 | .000 |
| | [NewFriend = 2] | .075 | .264 | .081 | 1 | .776 |
| | [NewFriend = 3] | 1.590 | .311 | 26.108 | 1 | .000 |
| | [NewFriend = 4] | 3.272 | .462 | 50.161 | 1 | .000 |
| Location | [International=1] | 1.095 | .371 | 8.708 | 1 | .003 |
| | [International=2] | 0[a] | . | . | 0 | . |

Next, as shown in Table 5.11, the software displays the 'parameter estimates' of the model. The 'location' variables are those which are of interest to the analysis, as they are the coefficients for the independent variable (international), highlighted in grey in the table (Norušis, 2011b). "As is always the case with categorical predictors in models with intercepts, the number of coefficients displayed is one less than the number of categories of the variable. In this case, the coefficient is for the value of 1. 'Not International' is the reference category and has a coefficient of 0" explains Norušis (2011b, p. 73). Furthermore, *P*=0.003, therefore the regression coefficient of the variable 'international' is 1.095, and hence is the estimated increase in the log odds of 'international'. The odds ratio is the exponential of the logs odds where:

## Equation 5.2: An example of Derivation of Odds Ratio

$$Odds\ Ratio = e^{\log odds}$$
$$= e^{1.095}$$
$$= 2.99$$

It is important to note here that when fitting an ordinal regression, an assumption exists that the relationship between the independent variable and

the logits[37], are the same, meaning that the results are a set of parallel lines, one for each category of the dependent variable, in this case the likelihood of 'new friend' in the Forum. To confirm this, attention is turned to the 'Test of Parallel Lines' which is also part of the test, displayed in Table 5.12.

**Table 5.12: Test of Parallel Lines**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. |
|---|---|---|---|---|
| Null Hypothesis | 29.522 | | | |
| General | 28.335 | 1.187 | 3 | .756 |

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

The results from the test of parallelism are shown in Table 5.12, where the 'Null Hypothesis' row contains "-2 log-likelihood for the constrained model, which assumes the lines are parallel. The row labelled General is for the model with separate lines" as explicated by Norušis (2011b). If the lines are indeed pararell then the observed significance level (highlighted in grey) for the change should be big, as the 'general' model does not improve the fit greatly, therefore, the ideal result would be *to reject the null hypothesis* in order to confirm the model is plausible. In this case $P$=0.756, hence the model is plausible for the problem.

Table 5.13 shows the summary of the Ordinal Logistic Regression results of the variables: 'New friends' and 'Background Noise'. From the test it can be deduced that for International students, a one unit increase in their origin (i.e. not international), a 1.1 increase in the log odds of the perceived likelihood of 'making a new friend' can be expected, given that all of the other variables in the model are held constant. This means that the odds of international students choosing a higher likelihood are 2.99 times higher than non-international students. On the other hand, when the variable 'people watching' is concerned, for one unit increase in international, a 0.68 decrease in log odds of agreeing to the statement "I like people-watching", given that all of the other variables in the model are held constant. Thus, the odds of international students scoring

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[37] An equal interval level of measurement, which means that the distance between each point on the scale is equal

'People Watching' highly are 0.51 times lower than those who are not international.

**Table 5.13: Ordinal Logistic Regression Results Summary**

| Variable | Log odds | | Odds Ratio | |
|---|---|---|---|---|
| New Friend[38] | 1.095 | Increase | 2.99 | Higher |
| People Watching | -0.676 | Decrease | 0.51 | Lower |

Source: Author's Fieldwork

These findings explain the multi-cultural nature of the Forum users and their perceptions of making new friends and people watching, international students perceive the likelihood of making a new friend higher than non-international students while the reverse is true when concerning the likelihood of people watching. The implication of these results in terms of the thematic findings is the importance of understanding the variety of users the space has and how they perceive others working around them and hence the 'unspoken reciprocity' that can exist between them may be dependent on their internationality.

**Table 5.14: Test Statistics – Grouping Variable: Area (Simplified)**

| | Individuality |
|---|---|
| Mann-Whitney U | 969.500 |
| Z | -2.225 |
| Asymp. Sig. (2-tailed) | .026 |

Source: Author's Fieldwork

These findings explain the multi-cultural nature of the Forum users and their perceptions of making new friends and people watching, international students perceive the likelihood of making a new friend higher than non-international students while the reverse is true when concerning the likelihood of people watching. The implication of these results in terms of the thematic findings is the importance of understanding the variety of users the space has and how they perceive others working around them and hence the 'unspoken reciprocity' that can exist between them may be dependent on their internationality.

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[38] For full results see Appendix 7:4) International and New Friend

Table 5.14 shows the results from the Mann-Whitney U test, where Area (simplified; upstairs and downstairs) was the grouping variable and 'individuality' was the only significant variable which indicates a Z value of -2.225 and a significance of $p$=0.26. This confirms that there is a statistical significance between the people sitting upstairs and those downstairs and whether participants felt they were working as part of a community or individually. This result further supports comments from interviewees in Chapter 4 and further section 5.3.2 in this chapter that differences between choosing individuality or community can be attributed to different spatial areas of upstairs or downstairs.

**Table 5.15: Test Statistics – Grouping Variable: Individuality**

| Variable | Mann-Whitney U | Z | Asymp. Sig. (2-tailed) |
|---|---|---|---|
| People Motivate | 653.5 | -4.354 | 0.000 |
| With Friends | 575 | -4.874 | 0.000 |
| Q17-Sociability | 578 | -4.812 | 0.000 |
| Watch Belongings | 858.5 | -3.041 | 0.002 |
| People Watching | 837 | -3.122 | 0.002 |
| Forum Motivation | 867 | -2.914 | 0.004 |
| Valued | 877 | -2.868 | 0.004 |
| Q20 – Overall Satisfaction | 858.5 | -2.902 | 0.004 |
| Q15 | 872.5 | -2.81 | 0.005 |
| New Friend | 895.5 | -2.73 | 0.006 |
| Reason | 957 | -2.626 | 0.009 |
| Noise | 910.5 | -2.568 | 0.010 |
| Other people | 931 | -2.554 | 0.011 |
| Comfortable | 928 | -2.524 | 0.012 |
| Reserving Space | 991.5 | -2.088 | 0.037 |
| Productive | 1001.5 | -1.994 | 0.046 |

Source: Author's Fieldwork

However, it cannot be confirmed that these difference are only due to the variable 'Area' because as Table 5.15, shows 'individuality' also has other statistical significances also. There are 13 other variables and three 'average variables' (Q15, Q17 and Q15) which have a statistical significance according to the Mann-Whitney U test.

For simplicity and relevance, the top 3 variables will be examined further. Table 5.16 shows the summary of the Ordinal Logistic Regression results of the variables:

- agreement to the statement 'Seeing other people work motivates me' (People Motivate)
- agreement to the statement 'I like to come with friends' (With Friends)
- Question 17 overall sociability statements 'Q17 – Sociability'.

**Table 5.16: Top 3 Ordinal Logistic Regression Results Summary**[39]

| Variable | Log odds | | Odds Ratio | |
|---|---|---|---|---|
| People Motivate | 1.662 | Increase | 5.27 | Higher |
| With Friends | 1.946 | Increase | 7.00 | Higher |
| Q17 - Sociability | 1.879 | Increase | 6.55 | Higher |

Source: Author's Fieldwork

For participants who chose community, there is a 1.66 expected increase in the log odds of agreeing with the statement "Seeing other people work motivates me", given that all of the other variables in the model are held constant. Therefore, the odds for participants who chose community are 5.27 times higher likely to agree to the statement "Seeing other people work motivates me". Similar conclusions can be applied to the agreement of "I like to come with friends" (Log odds= 1.95, OR = 7.00) and the average of overall sociability statements in Question 17 (Log odds= 1.88, OR = 6.55). Therefore, the inverse conclusion is people who chose individuality were less likely to score any 'sociable' statements highly. This result is similar to those in the Chapter 4, where interviewees did not feel a sense of community, but a sense of empathy. Through ordinal regression the Forum user is better understood as an 'isolated scholar' even though they are motivated by the 'people', 'friendly' and 'sociable' environment happening around them, they acknowledge the 'individuality' of the work being conducted as 'isolated' rather than communal practice. The implications in terms of the thematic research findings suggest that the overall 'sociable' atmosphere is important and motivating to an individuals' working ability within the Forum space.

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[39] For full SPSS outputs see Appendix 7:6): Individuality and People Motivate, 7) Individuality and with friends and 8) Individuality and Q17 - Sociability

The Mann-Whitney U test is limited to the analysis of two groups within independent variables; therefore the chapter will now turn to the Kruskal-Wallis test to determine whether a statistical significance exists in variables with three or more groups.

## 5.5.2. Kruskal-Wallis

Given the emphasis placed on spatial importance the main variables which will be discussed in detail will be those which are of relevance to this thesis: Area 3 (specific; bench, sofa or desk), Regular Area (bench, sofa or desk – where participants would normally sit and work) and 'Reason' (work, social, access, everything). Therefore, the variables which are derived from the Likert scale questions will not be used as a grouping variable, even though some variables did generate statistical significances. Analysis will focus on those within the scope of this thesis in order to further a spatial understanding of the Forum.

Earlier in section 0 and Table 4.1, area was divided twice, first into a simplified variable with two groups; upstairs and downstairs and again into a specific variable in three groups according to the desk type; bench, sofa and desk. The first was discussed using the Mann-Whitney U test (section 5.5.1); the later will be evaluated next. Table 5.17 below summarises the results of the variables which have a statistical significance.

**Table 5.17: Kruskal-Wallis Test – Grouping Variable: Area (Specific)**

|  | Watch Belongings | Made New Friends | Interaction |
|---|---|---|---|
| Kruskal-Wallis | 6.875 | 6.916 | 6.911 |
| df | 2 | 2 | 2 |
| Asymp. Sig. (2-tailed) | .032 | .031 | .032 |

Source: Author's Fieldwork

The Kruskal-Wallis test reveals that there is a relationship between the specific area the questionnaire took place and the likelihood of 'Asking someone to keep an eye on your belongings' ($P$=0.032) or agreeing to the statement 'I have made new friends as a result of working here' ($P$=0.031) and 'Initiating interactions with the people around you' ($P$=0.032). Therefore this suggests that

there is a statistically significant difference in the above variables across the three groups of area (specific). Pallant (2005) suggests to inspect the 'Mean Rank' for the three groups to differentiate the group which has the highest ranking, this output is presented in Table 5.18.

**Table 5.18: Ranks Summary - Area (Specific)**

|  | **Area** | **N** | **Mean Rank** |
|---|---|---|---|
| Watch Belongings | Bench | 78 | 53.30 |
|  | Sofa | 11 | 31.00 |
|  | Desk | 13 | 58.04* |
|  | Total | 102 |  |
| Made New Friends | Bench | 78 | 47.51 |
|  | Sofa | 11 | 69.55* |
|  | Desk | 13 | 60.19 |
|  | Total | 102 |  |
| Interaction | Bench | 78 | 47.62 |
|  | Sofa | 11 | 70.05* |
|  | Desk | 13 | 59.12 |
|  | Total | 102 |  |

Source: Author's Fieldwork                                      *Highest Mean Rank

Table 5.18, identifies 'Desk' to be the highest ranking group for the variable 'watch belongings' which suggests that the participants who were completing the questionnaire at a Desk type of space scored the variable higher when compared to benches or sofa. On the other hand, for the variables 'made new friends' and 'initiating interaction', the people who were completing the questionnaire at a Sofa scored the highest.

Looking at the previously mentioned Figure 5.1, which depicts the different categorisations of areas, a slight discrepancy exists between where people took the questionnaire and where they sit and work regularly. Question 11 and 12 in the questionnaire asked participants to state where they would normally work and other work spaces available to them on campus. A combination of results from these two questions generated a less divergent sample of the area and perhaps a truer picture of the spaces people normally work, this variable was termed 'Regular Area' and will be looked at next in Table 5.19.

**Table 5.19: Kruskal-Wallis Test – Grouping Variable: Regular Area**

|  | Social | Q17 – Sociability | Satisfaction Atmosphere |
|---|---|---|---|
| Kruskal-Wallis | 8.038 | 5.956 | 6.758 |
| df | 2 | 2 | 2 |
| Asymp. Sig. (2-tailed) | .018 | .051 | .034 |

Source: Author's Fieldwork

The most identifiable difference between area (specific; bench, sofa, desk) and regular area is that there are three different variables which are found to have a relationship. However, both suggest that there is a 'social' element which is related to the area where participants regularly choose to work in ($P$=0.018). Additionally, the other variable is 'satisfaction of the atmosphere' ($P$=0.034) and 'Q17 - Sociability' which is the overall agreement to sociability related variables ($P$=0.051), which should not technically be considered as statistically significant but it is deemed that it is close enough to be included, as it only confirms the relationship between area and sociability.

**Table 5.20: Ranks Summary – Regular Area**

|  | Regular Area | N | Mean Rank |
|---|---|---|---|
| Social | Bench | 35 | 42.74 |
|  | Sofa | 15 | 67.30* |
|  | Desk | 52 | 52.84 |
|  | Total | 102 |  |
| Q17 – Sociability | Bench | 35 | 45.50 |
|  | Sofa | 15 | 67.53* |
|  | Desk | 52 | 50.91 |
|  | Total | 102 |  |
| Satisfaction Atmosphere | Bench | 35 | 49.11 |
|  | Sofa | 15 | 67.60* |
|  | Desk | 52 | 48.46 |
|  | Total | 102 |  |

Source: Author's Fieldwork                                    *Highest Mean Rank

The mean rank summary for the variable 'regular area' suggests that there is a particular relationship between people who sit at sofa desk types and the above variables.

Focusing on the relationship between 'regular area' and 'satisfaction atmosphere', the Ordinal Logistic regression test indicates that, for participants who chose the 'sofa' desk type, with one unit increase in regular area, there is a 1.46 expected increase in the log odds of rating their satisfaction of the Forum atmosphere higher. Therefore, the odds of 'sofa' participants scoring their satisfaction of the atmosphere are 4.29 times higher than those sitting at a 'desk' or 'bench' type area.

Having looked for relationships or statistical significance between area (simplified) and both area (specific) and regular area, this section will consider the reasons participants wrote for visiting the Forum. These results are shown in Table 5.21.

**Table 5.21: Kruskal-Wallis Test – Grouping Variable: Reason**

|  | Kruskal-Wallis | df | Asymp. Sig. (2-tailed) |
|---|---|---|---|
| Frequency of Visit | 9.986 | 3 | .019 |
| Q17 - Sociability | 9.873 | 3 | .020 |
| Q19 – Overall Importance | 9.374 | 3 | .025 |
| Importance Atmosphere | 9.368 | 3 | .025 |
| Individuality / Community | 8.850 | 3 | .031 |
| Importance Openness | 8.684 | 3 | .034 |
| Hours Spent | 8.682 | 3 | .034 |
| Made New Friends | 8.406 | 3 | .038 |
| Interaction | 8.073 | 3 | .045 |

Source: Author's Fieldwork

Question 21, in the questionnaire, asked participants to state the reasons they visit the Forum[40]. Given the data, it has been divided into four categories as section 5.3.4 discussed earlier and depicted in Figure 5.6.

From Table 5.21, it is evident that there are nine variables which have a statistical significance with the variable 'reason'. Ordered from smallest significance to highest, the top 3 are: frequency of visits to Forum, Q17 – sociability and Q19 – overall importance of Forum characteristics. These and the others will be looked at in conjunction with Table 5.22, which summarises

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[40] See Appendix 3: Questionnaire Question 21

the highest mean rank of each group of the 'reason' variable, with its related statistical significant variable.

**Table 5.22: Brief Summary of Ranks**

| Variable | Regular Area | N | Highest Mean Rank |
|---|---|---|---|
| Frequency of Visit | Work | 66 | 57.24 |
| Individuality / Community | Work | 66 | 55.95 |
| Hours Spent | Social | 20 | 56.28 |
| Interaction | Social | 20 | 63.05 |
| Made New Friends | Social | 20 | 63.68 |
| Q17 - Sociability | Social | 20 | 69.08 |
| Importance Atmosphere | Social | 20 | 63.30 |
| Importance Openness | Everything | 3 | 84.50 |
| Q19 – Overall Importance | Everything | 3 | 77.50 |

Source: Author's Fieldwork

Table 5.22 is categorised by which group variable scored the highest according to Kruskal-Wallis test.

Frequency of visits ($P$=0.019) and whether participants felt a sense of individuality or community ($P$=0.020), both had the highest mean rank from the group of participants who answered 'work or study' as their reason for visiting the Forum. From this, it can be deduced that, there is a statistical significance between 'work' being the reason and the frequency with which people visit, as well as whether they feel a sense of individuality or not. To further understand this relationship, Spearman's Rank Order Correlation test will be executed, to see the strength of the relationship, as well as whether it is positive or negatively related. The Spearman's correlation ($r$) in the case of reason against 'frequency' is $r$ = -0.311 at $P$=0.001. It is maintained that an $r$ value from 0.1 to 0.29 is said to be a small correlation, from 0.3 to 0.49; medium correlation and from 0.5 to 1; a large correlation, while the '–' (negative) sign indicates a negative relationship (Pallant, 2005). Therefore, for the example above ($r$ = -0.311), it can be deduced that a negative medium correlation exists, which means as reason changes from work, social and access the frequency of visits to the Forum goes down (negative relationship). Furthermore, Pallant (2005) explains that an $r$ = -0.311 value indicates a 9.67% shared variance; the explanation of which reason is used to visit the Forum, helps explain nearly

10% of the variance in respondents frequency of visits. Similarly, the relationship between 'reason' and the variable 'individuality' ($P$=0.031), the Spearman's correlation is $r$ = -0.268, with a variance of 7.18%, also indicating a negative but small relationship between the reason people visit and their feelings between individuality and community.

The next five variables: 'hours spent' ($P$= 0.034), 'interaction' ($P$= 0.045), 'made new friends' ($P$= 0.038), 'Q17 – Sociability' ($P$= 0.020) and 'importance of atmosphere' ($P$= 0.025), are all statistically significant with 'reason'. Furthermore, for all five, 'social' was the highest ranking reason. Therefore, it can be said that 'social' was the main motivation behind the relationship of reason and hours spent in the Forum. To understand this relationship, the Spearman's correlation is needed: in this case $r$ = -0.268, once again indicating a small negative relationship. Therefore, as people visit the forum for reasons other than work, the hours spent in the Forum are going down, especially if 'social' is their reason for visiting.

Having used the Mann-Whitney U and Kruskal-Wallis test, it is evident that the variables of 'individuality', 'sociability' and 'interaction', 'valued' and 'forum motivation' are related amongst each other. It is important to now turn to the strength of these relationships whether they are positive or negative using the results of the Spearman's Rank Correlation test.

### 5.5.3. Spearman's Rank correlation Test ($r$)

Where relevant, the Spearman's rank correlation ($r$) statistic has been discussed. This section will examine some of these relationships, using triangulation amongst the results to determine a network of connections. To recap an $r$ value from 0.1 to 0.29 is said to be a small correlation, from 0.3 to 0.49; medium correlation and from 0.5 to 1; a large correlation, while the – (negative) sign indicates a negative relationship (Pallant, 2005). Figure 5.1, depicts the network of relationships between variables which showed a statistical significance and their corresponding $r$ value.

**Figure 5.12: Network of Relationships between connected variables**
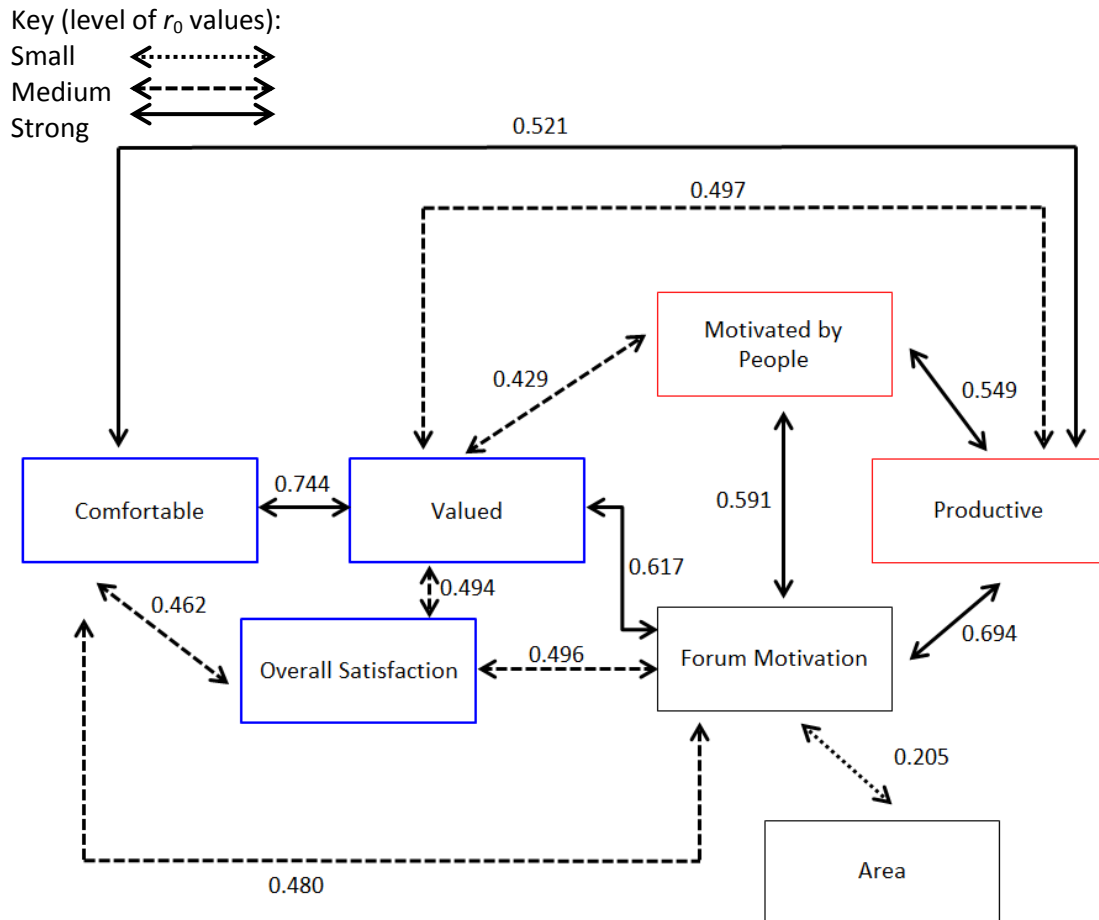


(Source: Author's fieldwork)

Figure 5.12 depicts all the positive relationships between variables. The only variable that's showed a negative relationship was individuality as this was discussed in the previous section. Therefore, as the figure shows, the variables chosen are all those with a strong positive relationship and some medium, with the exception of Area (simplified; upstairs and downstairs) which has a small positive relationship, but is very central to this study.

The Spearman's rank correlation ($r$) revealed that the strongest positive relationship is between the two variables: 'The Forum is a comfortable place to work' and 'I feel more a part of this university when working here' is $r = 0.744$ ($P= 0.000$). An $r$ value of 0.744 indicated a 55.35% shared variance of among participants' responses. This means that as the users of the Forum space felt more comfortable in that space, they felt more valued as part of the organisation; the University of Exeter, and vice versa. Next the sense of feeling valued also had a strong positive relationship with 'The Forum is a motivational space' $r = 0.617$ ($P= 0.000$), with a variance of 38.32%. Therefore, this further

solidifies that the Forum space has implications for its user's sense of 'value' and as a consequence feel more comfortable. The 'comfort' and 'Forum motivation' relationship also exists: $r = 0.480$ ($P= 0.000$), albeit with medium strength. In between, the above variables; 'comfortable', 'valued' and 'Forum motivation' is a medium positive relationship to all with the 'overall satisfaction' which users feel towards the Forum (represented by the blue boxes in Figure 5.12). Overall satisfaction can be related with statistical confidence to 'comfort' $r = 0.462$ ($P= 0.000$), 'valued' $r = 0.494$ ($P= 0.000$) and 'forum motivation' $r = 0.496$ ($P= 0.000$), with the total variance of all three equating to 70.35%.

As Figure 5.12 reveals, 'forum motivation' is one of the centrally related variables. The next set of variables (represented by the red boxes), which have a positive strong relationship with 'Forum motivation' are: 'Seeing other people work motivates me' $r = 0.591$ ($P= 0.000$) and 'The Forum is a productive place' $r = 0.694$ ($P= 0.000$). This means that, as users feel more motivated by the Forum space, they also find it more productive. Furthermore, the two variables also have a strong positive relationship amongst them also $r = 0.549$ ($P= 0.000$). This creates a triangular relationship, which when looking at the bigger picture of Figure 5.12 the variable of feeling 'valued' is also related, to both the variables, albeit as a medium correlation. Moreover, the variable of 'comfortable' has a strong relationship with 'productive' $r = 0.521$ ($P= 0.000$), which suggests that as users feel more comfortable in the space they also feel more productive and vice versa.

The weakest relationship depicted in Figure 5.12 is that of Area (simplified; upstairs and downstairs) and 'forum motivation' $r = 0.205$ ($P= 0.039$), however it is a relationship nonetheless. Given this information, it can be said with confidence that if forum motivation is related to four important variables, then in a small triangular way so is area, in terms of upstairs and downstairs.

In a tentative summary of the bivariate analysis, the combination of the Mann-Whitney U and Kruskal-Wallis test, revealed statistical significances between the different categories of area and the likelihood of socialising and interactions occurring. The Spearman's rank correlation ($r$) further revealed a network of positive relationships, particularly those centred on the variable of 'forum

motivation, comfort and feeling valued'. Using this information, attention will now turn to a simple multivariate analysis to provide more dimension and depth to the existing results.

## 5.6. Multivariate Analysis

Multivariate statistical techniques provide a more complex look at the data, which helps to convert these data into deeper knowledge (Hair, 2009). The particular test which will be used in this section is Two-Step cluster analysis. Cluster analysis is a data reduction technique which is helpful in reducing the sample information into information about specific groups (Hair, 2009). Therefore, the groups found in the final solution are explained. Finally, these groups are profiled by their general attributes in relation to other survey variables (Hair et al. 2009, p. 517). Therefore, the researcher is able to then use the final solution from a two-step cluster to profile individuals into certain groups (Hair, 2009). Furthermore, the clusters can then be made into new variables which can be tested using the previous bivariate tests to reveal supplementary relationships and knowledge about the sample, particularly regarding further insight into perceptions of the Forum space.

A form of cluster analysis is available in SPSS 18 and later, called Two-Step cluster analysis, was applied. The possibilities of entering different variables into the two-step cluster technique are endless; therefore this section will focus on one of the key results above to conduct the multi-variate analysis; using comfort and feeling valued, as cluster variables. The two-step cluster analysis process consists of two steps. The first step, pre-groups cases in small sub-groups or sub-clusters, which are greater than the final cluster number but smaller than the number of observed cases. The second step groups these sub-clusters into a final number of clusters, using hierarchical clustering of the pre-clusters (Norušis, 2011a).

This technique will be used as an exploratory analysis to further provide insight into four key variables: comfort and feelings of value among participants as a result of working in the Forum, and overall sociability and satisfaction of the Forum space.

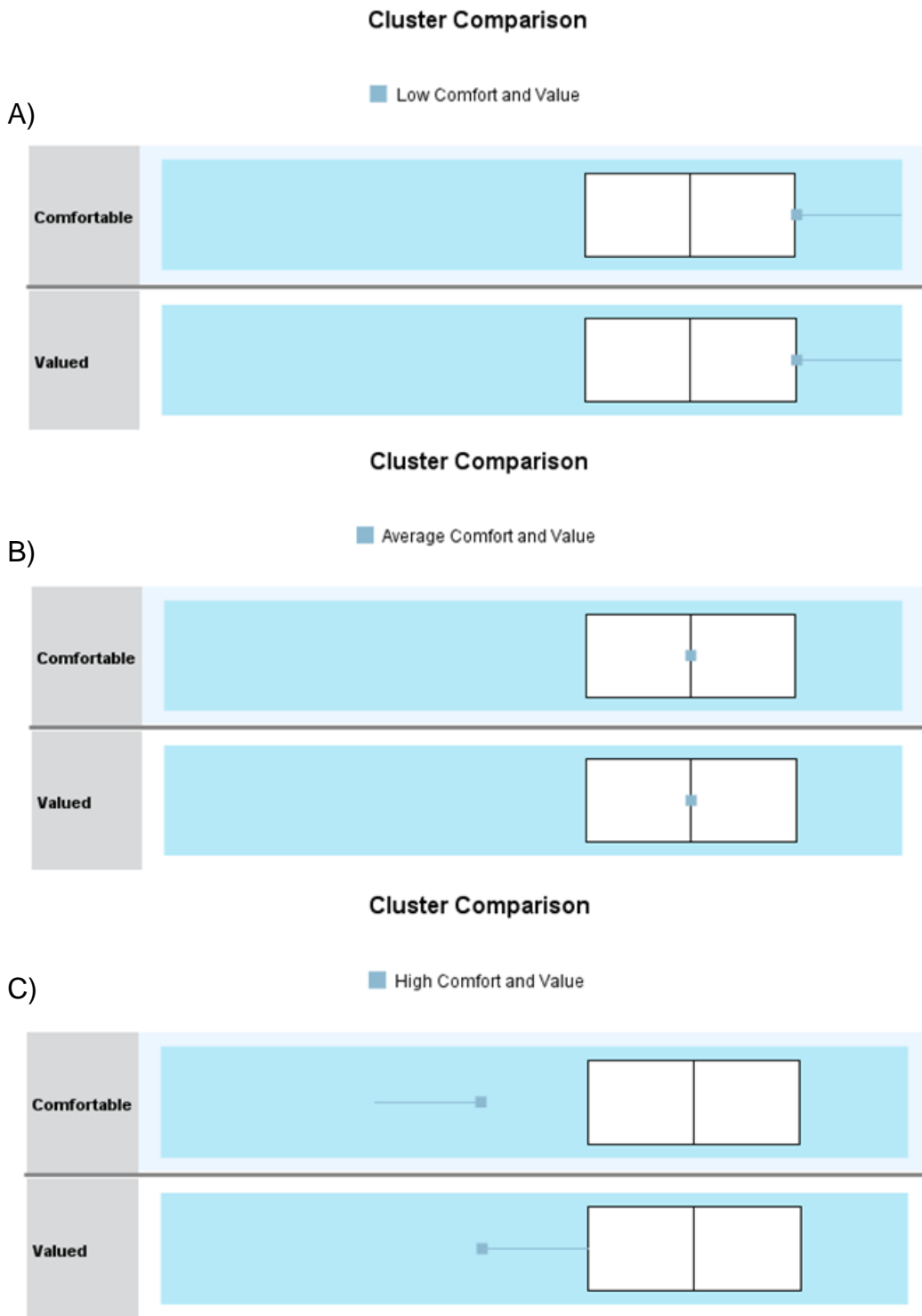**Figure 5.13: Model Summary of the Two-Step Cluster**
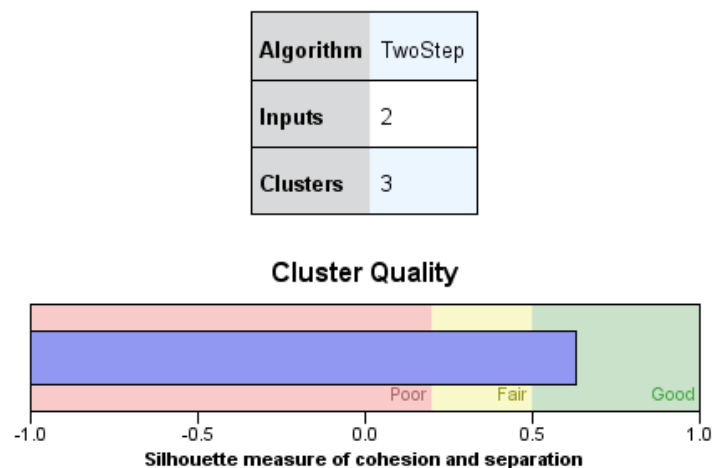


(Source: Author's Fieldwork)

When the two-step cluster analysis is performed in the SPSS software on the two variables of comfortable and value, three clusters are formed. The output of the test indicates that the cluster quality is 'Good' as Figure 5.13 shows.

Therefore, the three clusters are looked at separately to see the relationship between the two variables in each cluster. Previous bivariate analysis has confirmed that the two variables have a strong positive relationship ($r = 0.744$) and that they are statistically significant (Kruskal – Wallis results $P= 0.000$) against each other.

Figure 5.14, shows the cases in the clusters according to composition of the variables, in this case 'valued' and 'comfort'. As Figure 5.14 depicts, three clusters were formed from the two-step cluster analysis test. Presented in the form of box plots, where the box represents all the participants within the three clusters and the 'light blue' line signifies the observed cases of that particular cluster. The first cluster, as shown in Part A, contains the participants which have answered 'high' on the agreement scale for the two variables, as can be seen the 'blue lines' extends to the right (maximum line) of the box plot. The second cluster (shown in Part B of Figure 5.14), displays those who were in the middle and hence 'average' grouped cluster. The third and final cluster (Part C) groups together those which chose 'low', as the 'blue lines' spread to the left and hence beyond the minimum.

**Figure 5.14: Cluster Comparison: Low, Average and High**



**Cluster Comparison**

■ Low Comfort and Value

A)

| Comfortable | |
| Valued | |

**Cluster Comparison**

■ Average Comfort and Value

B)

| Comfortable | |
| Valued | |

**Cluster Comparison**

■ High Comfort and Value

C)

| Comfortable | |
| Valued | |

(Source: Author's fieldwork)

Using these clusters: high, average and low, grouped into one variable, further bivariate test can now be conducted using the new variable name 'Comfortable & Valued Cluster'.

**Table 5.23: Kruskal-Wallis – Grouping Variable: Comfortable & Valued Cluster**

|  | Kruskal-Wallis | df | Asymp. Sig. (2-tailed) |
|---|---|---|---|
| Productive | 27.202 | 2 | 0.000 |
| Forum Motivation | 26.269 | 2 | 0.000 |
| Q20-Overall satisfaction | 24.214 | 2 | 0.000 |
| Social | 14.413 | 2 | 0.001 |
| People Watching | 13.078 | 2 | 0.001 |
| Q17- Sociability | 14.301 | 2 | 0.001 |
| People Motivated | 10.483 | 2 | 0.005 |
| Safe | 9.02 | 2 | 0.011 |
| Background Noise | 8.152 | 2 | 0.017 |

Source: Author's Fieldwork

Table 5.23 summarises the results of the Kruskal-Wallis test, when the grouping variable is now the grouped cluster of 'Comfortable & Valued'. The test reveals that a statistical significance exists between the cluster and the above variables, some of which have been discussed before, and some new relationships:

- Agreement to the statement 'I like people-watching' ($P$=0.001)
- Agreement to the statement 'I like some background noise while working' ($P$=0.017).

By clustering the variables together and reducing the information of two variables to a category of low, average and high reveals a link to 'people watching', as well as 'background noise'. The most notable new relationship is: 'I like people-watching'. Conducting, a further bivariate test of Ordinal Logistic Regression, the relationship can be better understood (see: Table 5.24 for other variables). From the test, it can be deduced that for 'low' scoring participants, a one unit increase from low to average and then average to high; a 1.839 increase in the log odds of agreeing to the statement 'I like people watching', can be expected, given that all of the other variables in the model are held constant. This means that the odds of low scoring participants of the cluster,

choosing to score the variable 'I like people watching' are 6.29 times higher than other the average scoring respondents of the cluster. Furthermore, this suggests that if students are feeling low in terms of comfort or value, the more likely they are to engage in the activity of 'people watching' within the Forum.

**Table 5.24: Ordinal Logistic Regression Results Summary**

| Variable | Log odds | | Odds Ratio | |
|----------|----------|----------|----------|--------|
| People Watching | 1.839 | Increase | 6.29 | Higher |
| Noise | 1.552 | Increase | 4.72 | Higher |

Source: Author's Fieldwork

Since, the variables of 'Q17 – Sociability' (*P*=0.001) and 'Q20 – Overall Importance' (*P*=0.000) also have a statistical significance with the cluster, they will be plotted on a scatter diagram, to visually represent the cluster and its relationship to these variables (see: Figure 5.15).

**Figure 5.15: Graphical Representation of Cluster and other variables**
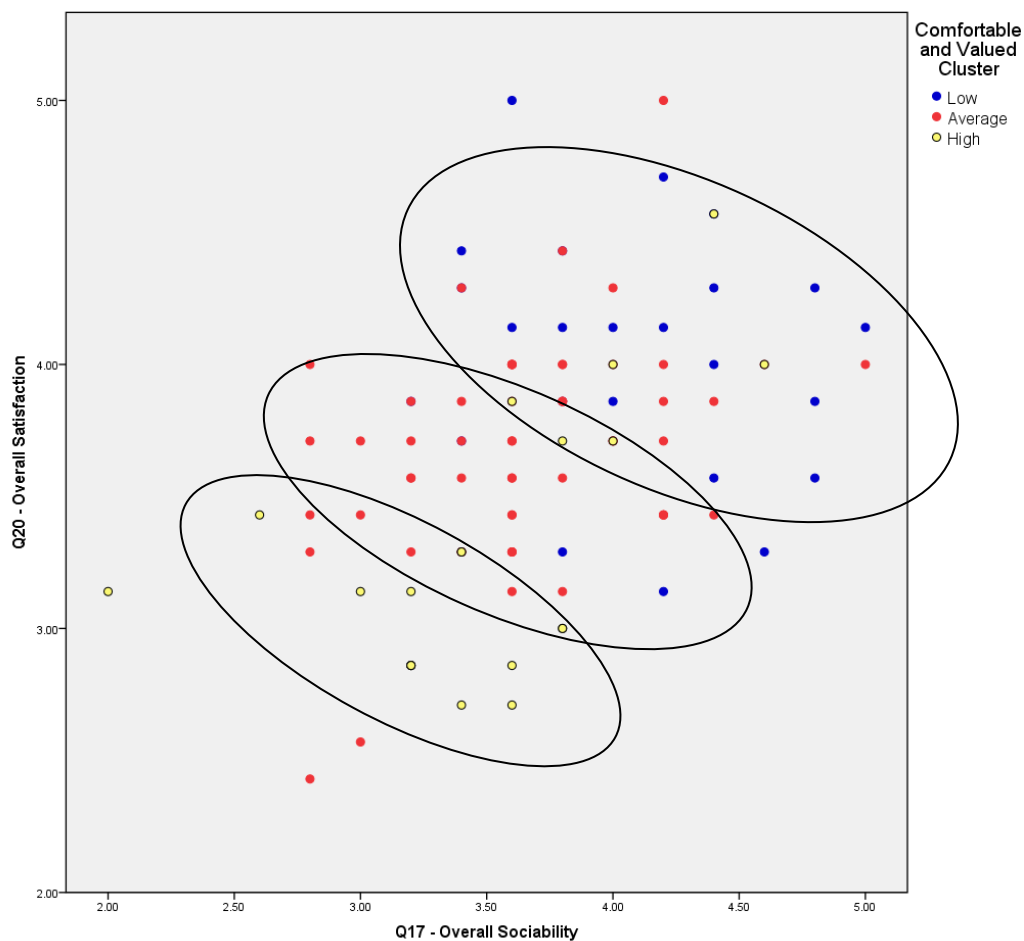


(Source: Author's Fieldwork)

Figure 5.15 depicts that a positive relationship exists between the cluster and the two variables above. The three oval circles represent the clustering of participants into low, average and high scores of comfort and value. This represents an interesting finding, because as Q17 and Q20 increase, the cluster moves from high to low. This means that while a positive relationship exists, the people who scored high were not as satisfied or as sociable as those who scored low. Of course a large part of the participants are found in the middle indicating they are generally equally comfortable and feeling valued as they are satisfied and sociable. A key implication for the Forum space would be to help those who feel highly comfortable and value to have a higher satisfaction of the Forum's characteristic, more so than encouraging them to be more social. Although the two are related and according to the statistical results in previous sections increasing overall sociability should in turn increase their overall satisfaction. Additionally, an important implication of these findings is the importance placed on feelings of comfort and value which is shared among participants working within the Forum space, therefore future designs, operations and success of buildings similar to the Forum space should take into consideration their users' perceptions, prior to as well as post occupation of these spaces, in order to maintain these feelings and therefore overall satisfaction.

## 5.7. Conclusion

This chapter aimed to provide statistical information regarding the Forum workers, in a focus to achieve objective 2) to determine multi-locational workers' reasons for working in open-plan spaces and research question 2.iii. Through the use of univariate, bivariate and multivariate analysis some interesting results have been brought to light. Moreover, these have been supported by statistical evidence which gives more confidence to the study and further support to the previous findings in the qualitative chapter.

Given this study's emphasis of space, and particularly objectives 1) to investigate multi-locational users' current perceptions of a specific space, several tests were used to understand the participants' demographic characteristics (research question 1.i) and their relationship between participants' decisions to choose certain areas and other variables, such as

reasons for visiting (1.ii), their activities (research question 3.i) and their preferred mediums to conduct these activities (research question 3.ii). In answering research question 2.i and 2.ii, the areas where they conducted their work were further categorising in different ways, most notably area (simplified; upstairs and downstairs) and where the participant would normally choose to locate themselves; 'regular area' according to the work surface type. This meant that specific work type areas were identified; bench, sofa and desk, and were tested.

A key result of this chapter is the significance of social and initiating interactions with 'Forum motivation and comfortable' and a sense of feeling 'valued' while working in that space, which provided a results for the objective 3) to ascertain any patterns of understanding about a particular space and predominantly research question 3.iii. Consequently, the presence of 'people' was highly desirable, even though 'individuality' was a more common perception of the culture of the space rather than a 'communal' one, which gave an explanation of research question 1.i.

Following the two results chapters the thesis will now turn to chapter 6, where the main findings will be summarised together in the provision of positioning a typology of University spaces within a wider context of open, public and communal [OPC] workspaces.

# 6. Positioning a Typology:

## Multi-locational Workers in Open Public and Communal working spaces

### 6.1. Introduction

Building on the results of the previous two chapters on the qualitative and quantitative analysis of observational, interview and questionnaire data, this chapter discusses the results further. The aim of this chapter is to position a typology of University open workspaces in the wider context of open, public and communal [OPC] workspaces. It is maintained that the Forum space is an example of similar and developing buildings which are becoming part of other campus infrastructures.

As mentioned previously, a gap exists in the understanding of the intersection between work conducted by multi-locational workers and open public-communal space. Therefore, this chapter aims to contribute to the current limited knowledge about workers and working in these spaces. While the previous two chapters provided a thematic and statistical analysis of participants' perception of a single case site, this chapter aims to position the Forum building within an OPC workspace typology in order to provide a more meaningful and generalizable understanding of the certain type of workers, activities and habits taking place within similar novel spaces, using and learning from the results from this study.

This chapter is divided into three key sections and aims to address  the research questions associated with objective three (as shown in table 1.1)  and research question iv: Can it be argued that the Forum is a representative case, of a given typology? The first part of the chapter begins by building an understanding of typologies in general, while also providing insight into their usefulness for this particular research. The second introduces a two by four matrix of organisational space against the type of workers. This is followed by an exploration of the main and sub-dimensions which make up the typology of

OPC spaces by arguing their importance and validity through past and existing findings from this thesis and arguing that the Forum space can be considered as an OPC type of workspace.

## 6.2. Describing Typology

### 6.2.1. Understanding the term 'Typology'

In looking at the geographies of open plan public–communal spaces, it is argued that the meaning of 'open', 'public' or 'communal' are not limited to their formal definitions. On the contrary, they imply a meaning beyond their Euclidean dimensions, constituting every person's daily activities, read through and modified by the physical as well as the social environments which they occupy.

As Turner and Manderson (2007, p. 764) explain:

> "The design of a courtroom, a library, or a lecture hall is a statement of intent about hierarchy, democracy, and power (Haldar, 1999)… [while] A street map is a coded lesson in advanced civics (Mohr, 2003)".

Therefore, one's perception of a space are constantly tested, mediated and constructed. As mentioned previously, the built world we all occupy communicates narratives and tales about ourselves and the societies in which we live, while simultaneously influencing our actions (Dale & Burrell, 2008). Furthermore, they are continuously providing a wide spectrum of 'informal normative ordering mechanisms' which permeate every corner of the built world (Turner & Manderson, 2007). The Forum at the University of Exeter is another such corner. It is argued in this thesis that this corner can provide some understanding into OPC spaces by positioning university spaces within a typology of organisational spaces versus types of workers (according to their mobility).

A typology can be simply defined as an 'organised system of types'. It is argued by Collier et al. (2012, p. 217) that "typologies – are a well-established analytic tool in the social sciences" because they "make crucial contributions to diverse analytic tasks: forming and refining concepts, drawing out underlying

dimensions, creating categories for classification and measurement, and sorting cases". Furthermore, it is maintained that typologies provide a firm framework for describing complex organisational practices (Doty & Glick, 1994). Through the positioning of a typology it is possible  that multiple organisational attributes and patterns of use can be identified to represent a unique combination of organisational dimensions which are assumed to determine an optimal outcome (Doty & Glick, 1994).

### 6.2.2.  Usefulness for this study

The data, analysis and results presented in earlier chapters have so far been looked at individually with some comparisons and similarities explained when possible, more particularly in chapter 5 (qualitative analysis). This chapter aims to bring the two chapters together and provide a discussion for the implications the findings have on the literature review (chapter 2). Throughout the thesis, there is an emphasis placed on the importance of spatial analysis, however as the literature review chapter shows, an organisational space can be defined as the internal and external spaces of an organisation, referred to  here as the private and public spaces respectively within a work environment. While, both are relatively neglected in social sciences, so are their users (Baldry, 1997; Baldry, 1999; Vartiainen, 2008; Venezia et al., 2008). The key points of the literature review are centred around the users in the space, as well as the materialisation of power through spatial design and space as an experience (Taylor & Spicer, 2007). Given this information the matrix in Figure 6.1 was developed to explain some of the possible types of spaces which represent the current literature.

As the economy shifts and changes, so does technology and organisational space must be adapted: for example, with this shift, some organisations are turning to hot-desking and mobile working conditions. Given this understanding, Figure 6.1 depicts the matrix which can be created from the different types of work environments, organisational spaces and the type of workers, according to their mobility within these spaces. The two by four matrix of organisational space; traditional and open-plan, against the type of workers; static, partially, casually and multi-locational workers. Furthermore, a third dimension is introduced to the matrix through a grey scale which differentiates internal from

external work environments. The two by four matrix is produced in order to frame types of university workspaces and justify that this new trend of workspaces can be termed as Open Public and Communal (OPC) workspaces. While the matrix illustrates examples of the types of spaces at intersections, they can be considered as a scale and are by no means exhaustive of the possibilities.

**Figure 6.1: Positioning Universities spaces**

| | | **Organisational Space** | |
| --- | --- | --- | --- |
| | | Traditional | Open – Plan |
| **Type of Workers** | Static | • **Classic Offices** | • **Call Centres** |
| | Partially Mobile | • **Home – based telework** | • **Hot – desking** |
| | Casually Mobile | • **Public Libraries** | • **Coffee Shop** |
| | Multi-locational | **OPC workspaces** | |
| | | • **Libraries** | • **Universities** |

Key to Shading:

Internal / Private                                                    External / Public

(Source: Author)

From Figure 6.1, one can see examples of the different types of spatial arrangements which have been discussed in the current literature, with the University space positioned at the intersection of multi-locational type of workers and an open-plan spatial design of organisational space. Furthermore,

the lighter shading indicates a more public than private work environment (represented by darker shading).

## 6.3. Positioning University spaces

For simplicity, the two by four matrix in Figure 6.1 depicts at the top scale, the scale of organisational spaces, while the vertical scale shows the type of workers in terms of mobility within their workspaces. A third dimension is presented in the matrix in the form of a grey scale which differentiates internal from external work environments which are also aligned here with the private and public spaces respectively within a work environment. Prior to positioning University spaces within OPC spaces and notably the Forum case study, it is important to comprehend what the different types are. These will be discussed next in order of the vertical scale of types of workers.

### 6.3.1. Static Workers

This is the most common type of work spaces, the ones which are often found in any medium to large organisation. In the partial existing empirical studies, these are either the spatial study of traditional or open-plan spaces within a private organisation (Button, 1997). Traditional organisational spaces are characterised by floor to ceiling walls with doors or other large physical barriers between people's workspaces (Backhouse & Drew, 1992; Zalesny & Farace, 1987). Examples of these spaces are the 'classic office' spaces which are often seen in older organisations and buildings; however the recent trends toward the opening up of spaces has meant that the 'traditional' design is not a popular choice in the present design of offices (Brennan et al., 2002).

While open-plan organisational spaces are just that, open or semi open – plan spaces have little physical partitions between desk spaces. Sometimes, individual employees may use items such as plants or photo frames to personalise their static workspaces, which is argued as a form of partitioning themselves from others in their work environment (Altman, 1975; Brown et al., 2005). Examples of call centres are often quoted to explain the open plan design. The types of workers usually found in either traditional or semi open-plan spatially designed organisations are usually those who are static within the

organisation, for example secretaries / receptionists or indeed call centre agents.

## 6.3.2.  Partially Multi-locational Workers

This is the next most common and classic type of spatial design. With advances in technology and wireless internet access becoming more easily accessible, organisations are increasingly more mobile in their working practices and environments (Duffy, 1997). Partially mobile workers in traditional organisational spaces can be defined as those which fall under the umbrella of 'home working' or 'home-based telework' or as the Electronic Commerce and Telework Trends (ECATT) identified 'Self-employed teleworkers' in SOHOs[41] (ECATT, 2000). Here the partial mobile worker finds themselves creating a workspace at a semi private location external to the organisation, for example: home working (Venezia et al., 2008). This type of spatial design is common among small business, start-ups or even internet bases organisations, but also includes those people which take sabbaticals away from the organisation but are still working, such as academic researchers for example. This type of worker typically has their working hours which they spend generally at home at a particular workspace which they have created. While the topic of home-working is often studied, the spatial design of an individual's creation of their workspace is regularly overlooked (Venezia et al., 2008).

The same partially mobile workers in the recent trend of open-plan organisational space design and technological advances has lead organisations to move towards 'hot-desking', 'hoteling' or 'cluster working' (Baldry & Barnes, 2012; Duffy, 1997; Gibson & Lizieri, 2001). Here, workers share the general workspace between those who remain in the office and those who come and go within the internal spaces of the organisation. Typically, both these spaces are found within internal organisational or private work environments, as indicated by the darker shade of grey in Figure 6.1.

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[41] Small Office Home Office

### 6.3.3. Casual Multi-locational workers

This type of worker is termed so because they are not necessarily associated with one or their own organisation or business. Unlike static and partially mobile workers who are generally on the darker side of the grey scale; i.e. internal and private, usually casual mobile workers are found in external public work environments, typically of either traditional or more so open-plan spatial design, often conducting 'casual' type of work. This type of worker is presented here as the opposite end of the 'static' worker in order to represent both those who are designated office spaces and those who are more spontaneous and casual about the type of work they conduct. This is often infrequent and out of one's typical routine, examples of the type of spaces can include public libraries and coffee shops. It must be noted that not all those found working in these spaces are necessarily as termed here, 'casual' mobile workers, but that these types of workers can be associated with these types of workspaces. However, the main topic of interest to this study is multi-locational work which will be discussed in further details next.

### 6.3.4. Multi-locational Workers

Multi-locational workers can be found on the intersections of semi-private and semi-public work environments (as indicated by the lightness of the shade), usually with a semi-open plan to open plan spatial design. This is the type of worker which is typically lacking in both the literature and empirical studies, as highlighted in chapter 2. While technology and other related disciplines examine this type of worker, the concept of their creation and re-creation every day of their working spaces has not been studied (Cohen, 2010).

Van Meel (2000) discusses the emergence of the 'deskless' office. In the place of individual or perhaps even shared desks, their 'workspace' has no desks as such, but instead a variety of work settings and support facilities are present (Laing, 1990). Here the 'desk' can be seen divided into a series of spaces and activities – types of work surfaces; technological access and even contact with colleagues (Laing, 1990),    something which private libraries or University spaces are already offering, or in broader terms OPC workspaces.

OPC (Open, public and communal) workspaces are defined as those which multi-locational workers use outside of the organisation. Examples include (but are not limited to: private libraries and university spaces). Research on these types of spaces often focus on marketing tactics of which products and services to offer, but are still limited, particularly in empirical testing about the space (Cohen, 2010). This is where the researcher believes this study contributes an original piece of research.

Having positioned what the researcher has chosen to term OPC spaces, as a type of University open plan spatial design for multi-locational workers who work in a public work environment. The next step in understanding University and more so OPC workspaces is to provide the main and sub-dimensions which make them up, using the Forum space and the results from both quantitative and qualitative data.

## 6.4.    Main and Sub-Dimensions to OPC workspaces

Open, Public and Communal [OPC] workspaces are termed so in this thesis because of the combination of the three explain the frequently used spaces by multi-locational workers which often remained undefined and seldom studied. The word 'open' was chosen to represent large accessible spaces, which form part of the trend from tradition to open-plan spatial designs currently found in many organisations today. The term 'public' implies availability to anyone who wishes to use it, unlike open private spaces, such as those found in the Google Headquarters or the spatial layout of the Lloyds' Building in London. Usually, these spaces infer that they are built, owned and maintained by private organisations and therefore spaces such as those used by performance artists on the street (Munro & Jordan, 2013) are excluded as potential examples. The 'communal' element of OPC spaces denotes the shared understanding between the people that use the space, for example libraries and university spaces.

Taking into account the literature as well as the findings the definition of OPC work spaces for the purpose of this thesis is as follows:

> Open, public and communal [OPC] work spaces are any work areas
> which are typically without floor to ceiling walls, found within private

organisations which are available to the public to conduct their work and hence have communal benefits.

In recent years there has been a growth in the numbers and significance of the interdisciplinary research centres and working spaces within Universities' capital construction (Coulson et al., 2014). It is argued that the infrastructure, the spaces within and surrounding them, which compose the physical university, are often taken for granted, and only appreciated as "the blank canvas on which the organisational intellectual life of the institution is painted – along with large parts of the personal lives of the staff and students who inhabit it" explains Temple (2014, p. xxv). Yet, interdisciplinary centres are one of the most prominent and potentially continuing trends affecting the physical realm of the university today (Coulson et al., 2014). Edwards (2000, p. 157) argues that "image, whether high-tech, multi-cultural or green matters to a university. And there is no better way to project an image than through building design. At one level architecture, urban and landscape design are the packaging of a service, at another they are the vehicle whereby intergenerational values are conveyed." A brief look at some UK campus plans reveals the emphasis being placed upon new physical interdisciplinary workspaces.

The University of Manchester, Sheffield Hallam University and Bournemouth University are some examples of other universities much like Exeter which are planning new builds and updates to their infrastructure to provide spaces which can be termed as 'interdisciplinary workspaces' or OPC work spaces.

**Plate 6.1: Alan Gilbert Learning Commons at Manchester University**



Source: (Higham, 2012)

At the University of Manchester, the President and Vice-Chancellor, Professor Dame Nancy Rothwell (2012, p. 3) explained that "For the first time, we will deliver a single site for The University of Manchester, where engineering, arts, biomedicine, business and all of our other activities live side by side, and our students will be at the real heart of a campus". This is particularly evident with their new Alan Gilbert Learning Commons (AGLC) building, shown in Plate 6.1. Jones and Blake (2013, p. 1) explain that the "AGLC provides a flexible learning space catering to students from across the University of Manchester with over 1000 study spaces, ranging from informal to formal, enclosed to open, complimented by state of the art innovative technology, the AGLC is an attractive central hub for students to visit anytime of the day and night". Similarly to what Exeter University promised with its Forum building as examined in section 4.3.1, both in its design and interdisciplinary vision of services.

**Plate 6.2: Concept Design of Sheffield Hallam University Development**



Source: (www.shu.ac.uk, 2013)

Sheffield Hallam University is currently in the construction process of their £30 million building (see: Plate 6.2). The building will include a "300+ seat lecture theatre, teaching rooms, learning spaces, staff spaces, cafe and reception" and is scheduled for completion in 2015 (www.shu.ac.uk, 2013). The specifications and services planned for the building are almost identical to those currently available in the Forum building and Manchester University AGLC building, particularly the exterior design, inclusion of an auditorium and learning spaces.

**Plate 6.3: Concept Design University of Bournemouth Development**



Source: (www.bournemouth.ac.uk, 2014)

Opening in 2016 is the University of Bournemouth development, described as "glass-fronted four-storey facility [which] will host academic and support facilities, including seminar rooms, lecture theatres, break-out space and catering facilities" (see: Plate 6.3 (www.bournemouth.ac.uk, 2014). Once again when compared to the Forum building (see: Plate 6.4 and Plate 6.5), it is becoming evident that other universities are adapting their infrastructure with emphasis on what is termed 'open public communal spaces'.

**Plate 6.4: The Forum Project**



Source: (www.exeter.ac.uk, 2012)

The trend is apparent that universities are affiliating with private foundations and public bodies to create large scale new facilities (Coulson et al., 2014), as

demonstrated by The University of Manchester, Sheffield Hallam University and Bournemouth University.

**Plate 6.5: The Forum Entrance**



Source: (Express&Echo.co.uk, 2014)

Fundamentally, the Forum space at the University of Exeter, has all three elements of OPC workspaces (Plate 6.4 and Plate 6.5), as the images in chapter 4 and 5 show. The space is 'open' (no large physical walls between workspaces) and it is open to 'public' but owned by the University, so both students, staff as well as wider Exeter and Devon residents are welcome to use the space. Furthermore, as chapter 4, section 4.2 and 4.4.1 discuss, there is an element of 'unspoken reciprocity' which emerged as a theme among participants' perceptions and also in observational notes, which implies a 'communal' environment. Furthermore, given the other examples presented both visually and conceptually above, the Forum can be seen as a representative case of the novel trend of 'interdisciplinary centres' which cater to the needs of multi-locational workers. In this case a range of students and research workers

Having identified the Forum as an OPC workspace, the analysis of the qualitative and quantitative chapters can be used to explain the different

dimensions which can be said to make up OPC spaces. It is important to be mindful that while the Forum is argued to be an OPC space, it will not fit exactly within the following dimensions of the typology. As is often the case with typologies, the case studies can be predicted to resemble the ideal types but do not provide an example of an ideal type (Doty & Glick, 1994). With this in mind, the following four main dimensions are explicated through the findings of this research which are focused on the Forum space.

In identifying the trend of these types of novel workspaces, Coulson et al. (2014, p. 28) recognise that 'Architecture and design are engaged to craft buildings with two fundamental characteristics'; flexibility and collaboration, and are further consciously conceived to nurture interaction among all the users of the space. These are reflected through the discussion of the four dimensions of OPC spaces summarised in Table 6.1.

**Table 6.1: Four Dimensions of OPC spaces Summary**

| Dimension | Summary |
|---|---|
| One:     Flexibility of Access Daily | • 24 hours / 7 days a week availability |
| Two:     Availability of Workspace | • Large capacity<br>• Availability of other resources |
| Three:    Flexibility or Options of workspaces | • Flexibility of workspace type (desks, sofas) |
| Four:    Active Atmosphere | • Break – out spaces<br>• Sociable atmosphere |

(Source: Author)

### 6.4.1.  Dimension One: Flexibility of Access Daily

A recurring theme, among what have been defined as OPC workspaces, is the daily access, usage and potential capacity the space has to offer. In section 4.2, it was revealed that the majority of interviewees visited the Forum on a daily basis with varying times; morning, afternoon and evenings, spending between 3 to 8 or more hours in the Forum. Furthermore, section 5.3.1 analysis showed that 60.8% of questionnaire respondents preferred the Forum space when it

was empty rather than busy, while 25% had no preference and only a small minority preferred the busy times.

Therefore, it is believed that these preferences lead to people visiting at different times of the day. Hence, it is proposed that one of the dimensions of OPC workspaces should be the flexibility to enter at different times of the day, as well as weekend access, to suit the majority of its users. The Forum space can be considered as fairly successful in this dimension as observational notes show over the different periods of the academic timetable it seems to always be at capacity. This is attributed to its 24 hour, 7 days a week access to the workspaces. This dimension is further confirmed, but may require some attention since the questionnaire revealed that participants ranked the variable 'availability of space' the lowest in terms of satisfaction (see: section 5.4.4).

## 6.4.2. Dimension Two: Availability of Workspace

Availability of workspace was ranked the lowest in satisfaction levels; however it scored the highest in terms of importance. Therefore, from participants' perspective, the availability of space should be considered as a main dimension to OPC workspaces. It was often mentioned in the interviews that the Forum gets very busy and people tend to 'reserve' their places while they step away for either a break or lunch and some participants did not appreciate this as they found difficulty in finding a workspace, particularly during revision times.

This leads to an important sub-dimension of the 'availability of other resources'. As explained earlier, access to other resources such as people; for socialising or books; for research material but most importantly for food, were the other reasons for choosing to work in the Forum.

Therefore, another dimension of OPC workspaces is that it has the capacity to hold a large number of people; for reference the Forum has 750 working space, including those available in the library and exploration labs and yet respondents still seemed dissatisfied. One notable addition is that during revision time, there is an additional number of desks added in front of the auditorium entrances both upstairs and downstairs in an attempt to cope with the demand during these times. Hence providing another example of how OPC spaces can be flexible to their capacity, particularly during peak periods.

Moreover, as the findings show, access to food or drink, and hence a combination of other services, truly satisfied one of the Forum's main objectives stated earlier, of bringing easily accessible services under one roof, creating the heart of the campus (see: section 4.3).

### 6.4.3. Dimension Three: Flexibility or Options of workspaces

Having mentioned the importance of flexibility which OPC spaces generally are designed to have (Coulson et al., 2014); another dimension is the flexibility of different types of workspaces. In the Forum, the researcher identified three different worktop types: bench, sofa and desk type areas. Some participants in the interviews clearly stated their preference for a certain type of workspace to accommodate their activity at the time.

The analysis of the type of workspace also revealed the importance of flexibility with noise levels. While there was a strong preference for some background noise, some participants explained that their type of workspace depended on the activity they were completing on that day which meant that sometimes they would choose different areas according to possible noise levels. The Spearman Rank Correlation test shows a positive medium relationship between liking 'background noise' and scoring the scenario 'I like people watching' higher.

The noise levels finding relates to Stokols et al. (2002) study which identified work distractions such as noise and foot traffic, which were measure on the frequency of interaction levels to be negatively correlated with perceived environmental support for job satisfaction and creativity. This concurs with the findings of this study as some areas were closer to entrances and the main pathways where people flowed in and out of the Forum building. However, noise levels in the Forum showed a strong positive correlation with the overall satisfaction of Forum characteristics.

In brief, this dimension suggests that 'flexibility' should not only be limited to workers' working practices but their spatial environment as well, since this has implications for noise levels.

### 6.4.4. Dimension Four: Active Atmosphere

The fourth dimension is possibly the strongest and recurring finding in this study. While space and particular areas have played a role in understanding participants' perceptions of the Forum space, the element of sociability and the likelihood of initiating interactions scored positively with many variables; as examined in section 5.5. Therefore, the fourth dimension suggests that an OPC workspace should have an active atmosphere. Regarding the Forum space, satisfaction of the atmosphere, was ranked as the highest satisfied variable.

It is recommended that an active atmosphere suggested here, implies the possibility of variety of activities taking place and a social environment. It is important to note here that while an active environment rather than a 'dull' one is preferred it does not necessarily connote that an individual would want to be part of the socialising element, but its existence around them is favoured.

Consequently, a sub-dimension to an active atmosphere would be the occurrence of social interactions among the space. The presence of people in the Forum space meant that an atmosphere is created and shared by everyone within it, and made apparent through the interactions and communications taking place. Explained briefly earlier, this can be related to social exchange theory (see: section 4.4.1). Social Exchange Theory suggests that good quality social interactions induce 'unspoken' obligations to yield favours to those people which have acted in one's interests. However, this unspoken reciprocity applies in so far as the relationship remains mutually beneficial (Blau, 1964). Therefore, this connection is twofold, first to the 'communal' aspect of OPC spaces and second, to the atmosphere which is created, recreated and enjoyed by those using the space. It further supports that space as well as the users within it make up an important dimension of OPC spaces. Furthermore, it also provides an alternative view, beyond that of positivists and reductionists (Dovey, 2009), that interactions and socialisations between users of the space, embody forms of social as well as spatial reproduction.

## 6.5.  Conclusion

This chapter began with an aim to position a typology of University open workspace within the wider context of open, public and communal (OPC) workspaces. Following an initial argument of the importance of typology building, a two by four matrix was developed position University spaces. The matrix was made up by organisational spaces in the horizontal scale and types of workers (according to their mobility) in the vertical scale. A third scale was incorporated into the matrix in the form of a grey scale which indicated the private / internal and public / external work environment the spaces can be typically found. Consequently, University spaces were positioned at the intersection of multi-locational type of workers, in open-plan organisational spatial designs, typically found in public but private owned work environments. Given, this positioning, it was further argued that these University type of spaces can be aligned with a recent trend of 'interdisciplinary research centres' (Coulson et al., 2014; Temple, 2014) which physical Universities are investing in.

Positioning the Forum building space within an OPC space provides insight into the main and sub-dimensions of these spaces. Given the support from current literature and the findings of this study, four dimensions have been identified: 1) flexibility of access daily, 2) availability of workspaces and the 3) flexibility of workspace areas / designs and an 4) active atmosphere. Through this, importance is placed on the fundamental perceptions of the users of the space who as Bligh (2014) agrees, opinion is sought because they are the people who inhabit the space. Furthermore, it is becoming more apparent that the 'deskless office' (Laing, 1990) that multi-locational workers use within these spaces are less about the desk surface and more about the workspace activities, access and atmosphere.

The objective of this chapter is to further 'ascertain any patterns of understand about the Forum space' and to answer research question 3.iv: Can it be argued that the Forum is a representative case, of a given typology? It is maintained that the Forum space fits well within the four dimensions, with some shortcomings, but nevertheless is a good example of the novel trend termed as OPC workspaces. It is suggested that other Universities are following the

growing trend or patterns of creating similar spaces which aim to bring students, staff as well as the wider communities they are linked with together.

Bell et al. (2012, p. 158, p. 158) made a point that a "typology is leveraged as a basis for generating research directions that would extend current theory". This is very true in this case as well. The aim of this chapter and to this thesis was to provide a starting point in a conversation which has been relatively neglected. Through the positioning of the Forum within a typology of University and hence within the wider context of OPC working spaces, the researcher's intention is to sketch the possibility of these types rather than provide a definitive example of all ideal types.

# 7. Conclusion

## 7.1. Introduction

This thesis has examined multi-locational workers, in particular the Forum users and their utilisation of space in open-plan public organisational environments. In 2009, the University submitted a planning application for its ambitious plans to radically redevelop its main campus; Streatham Campus through the 'Forum Project' (Express&Echo.co.uk, 2009). The £48 million Forum building was designed and intended to form the centrepiece and heart of the campus and is a part of a wider capital investment which aimed to drive Exeter University into the top 10 Universities by 2012. On May $2^{nd}$, 2012, 'the Forum' was officially opened by Her Majesty the Queen. Following this, the University of Exeter is now ranked amongst the UK's top 10 universities in the Higher Education league tables produced by *The Times, The Guardian* and *The Sunday Times* and ranked amongst the world's top 200 universities in the QS and Times Higher Education rankings. Additionally, in the academic Year 2012 / 2013 Exeter was awarded the Sunday Times 'University of the Year' prize (source: UOE, 2013).

Following the recent growth in the numbers and significance of interdisciplinary research centres and working spaces within Universities' capital construction (Coulson et al., 2014), the Forum space provides an interesting case site for this study. It is argued that the infrastructure, the spaces within and surrounding them, which compose the physical university, are often taken for granted, and only appreciated as "the blank canvas on which the organisational intellectual life of the institution is painted – along with large parts of the personal lives of the staff and students who inhabit it" explains Temple (2014, p. xxv). Furthermore, given the emergence of scholarly interest in 'organisational space' and its three commonly strands of approaching the subject: i) Space as a distance ii) Space as materialised relations and iii) Space as Experience, this thesis offers an empirical analysis of the Forum space, within the wider context of University spaces.

The scope of this final chapter is to highlight the main findings of the study in light of the three main objectives of the thesis, as well as present the implications derived from these findings. It is important to remember throughout this chapter the main purpose of this thesis is to provide a spatial understanding of multi-locational workers in open-plan, public and communal workspaces.

This chapter begins with a discussion of the research objectives and each of their associated research questions. Following this, the key contributions of the thesis, both methodologically and theoretically, are discussed. In concluding this chapter and the thesis, the limitations of the study will be considered, as well as the possible directions of future research following this study, particularly the exploration of the field of multi-locational workers and their working spaces and practices within these spaces.

## 7.2.   Key Findings

This section presents a summary of the main findings of this research. The research aim of the study is to examine multi-locational workers and their use of space in open-plan public organisational environments, which in this case is the New Forum Building at the University of Exeter. A general conclusion is that indeed, a combination of spatial and behavioural analysis helps to further understand the specific users of spaces such as the Forum.

Despite the fact that the Forum is only one case study example, nevertheless it represents a popular destination for working as well as socialising at the University of Exeter and in part reflects similar developments in other Universities. Its significance as a working destination can be justified by the positivity displayed by participants of the study, discussed in the previous analysis chapters 4 and 5. Furthermore, this study is one example of the growing trend within the mobile-working population and particularly other universities as highlighted in Chapter 6.

Considering the lack of research on multi-locational workers in open plan public –communal working spaces (see section 1.2.1 of Chapter 1 and section 2.2 and 2.6 of Chapter 2); the findings of this thesis provide an understanding of evolving spaces such as the Forum space. Having an insight into a sample of multi-locational workers can prove to be valuable to the literature of the socio-

spatial school of thought (Baldry, 1999; Dale & Burrell, 2008; Van Marrewijk & Yanow, 2010; Venezia et al., 2008).

Furthermore, it is maintained that even though, the study was focused on one case site; it examined the perceptions of its users against the characteristics which can be extrapolated to other similar open public spaces. Additionally, the use of mixed methods through the design and execution of both interviews and questionnaire allowed for results to be triangulated (seek convergence) which in turn increased the reliability and validity of the finding. The study began with non-participant observation (as discussed in section 3.4.3), notes and reflections from these were used to create a basic understanding of the everyday feel of the Forum space. This form of data collection, as well as existing literature, informed the design of the interview questions (see: Appendix 1: Interview Questions). The qualitative thematic analysis which was the conducted on the interview data further informed the design of the questionnaire questions. While the order of data collection was sequential, the analysis was triangulated (see: Figure 7.1). As Figure 7.1 depicts, non - participant observation was the first method of data collection which was then followed by semi – structured interviews, which in turn informed the design of the questionnaire. The results and analysis of the data from these methods (see: Chapter 4 and Chapter 5) were then used to position the Forum within a typology (see: Chapter 6).

**Figure 7.1: Triangulation of Methods and Analysis**
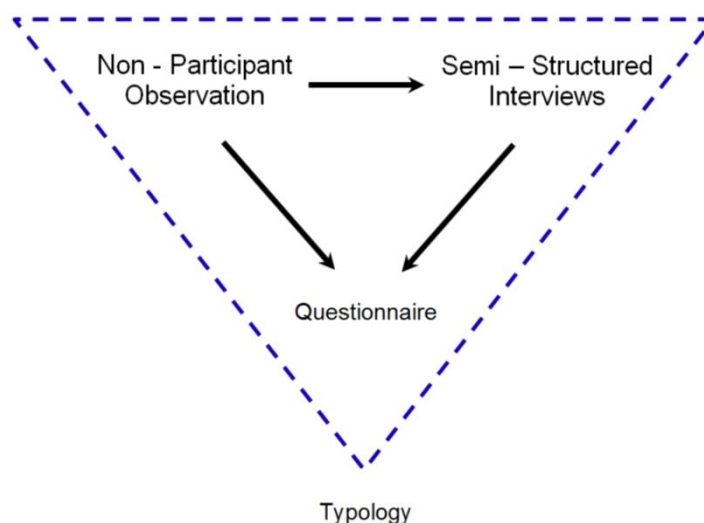


(Source: Author)

Table 7.1 displays a summary of the research objectives and questions and which section of the thesis the associated data, results and analysis can be found. Next each objective will be discussed separately and examined in terms of the findings.

**Table 7.1: Location of Results in relation to Research Objectives and Questions**

| Objectives | Research Questions | • Section |
|---|---|---|
| **1) to investigate multi-locational users' current perceptions of a specific space** | i) What are the demographic characteristics of participants? | 4.2 / 5.2 |
| | ii) What are the main reasons for visiting the Forum space? | 4.3.2 / 5.3.4 / 6.4 |
| | iii) Can the motivations for working in the Forum be identified? | 4.4 / 5.3.4 / 5.4.1 / 5.4.2 / 5.4.4 |
| **2) to determine multi-locational workers' reasons for working in open-plan spaces** | i) Are there different working spaces /areas available in the Forum? | 4.2 / 4.3.2 & 5.2 |
| | ii) How can these areas be differentiated? | 4.3.2 / 5.2 / 5.5.1 / 5.5.2 |
| | iii) Is there any statistical significance between these areas and other variables in the study? | 5.5.1 / 5.5.2 / 5.5.3 / 5.6 / 6.4.4 |
| **3) to ascertain any patterns of understanding about a particular space** | i) What are the different activities going on in the Forum? | 4.3.2 / 5.3.3 |
| | ii) What are the different mediums used to conduct their activities? | 4.3.2 / 5.3.3 |
| | iii) Are there any themes which emerge from the data? | 4.4.1 / 4.4.2 / 5.5 |
| | iv) Can it be argued that the Forum is a representative case, of a given typology? | 6.2.2 / 6.3 / 6.4 / 6.5 |

(Source: Author)

### 7.2.1. Objective 1:

**<u>To investigate multi-locational users' current perceptions of a specific space</u>**

> i) What are the demographic characteristics of participants?

While the interviews consisted mainly of female participants due to the convenience sampling method the researcher had to use, the questionnaire was more evenly distributed in terms of gender and internationality. Since, space / area is very central to this thesis, the area where participants would normally choose to work was considered as a demographic also, the majority of participants who were interviewed were sitting at 'bench' type of locations, and the same can be said for the questionnaire survey respondents.  However, when respondents were asked where they normally would sit, the results were different. Here there was stronger evidence of both 'bench' and 'desk' as the most common with 'sofa' always being the minority. This confirms that multi-locational workers spatial practices are changing and that the "idea of the desk is broken down into a series of spaces and activities - types of work surfaces" as Laing (1990, p. 14) explains.

"On a daily level, the toll on office utilisation includes time spent in breaks, at lunch, or in meetings outside the office. Space utilisation can be more finely broken down to the actual occupancy of the desk - it is clear that even when 'in', many people are not actually occupying a workstation, but are attending internal meetings, moving around the office, at the copy or vending machine, or en-route elsewhere" argues Laing (1990, p. 13). It was found that while the main respondents of this study are 'students ', their spatial working practices can resemble that of professional multi-locational workers, given the quote above. The sample of participants for both the interviews and questionnaire were a good representative of the Forum user, because in both cases participants visited the Forum on a daily or frequent basis and the average time spent among interview participants was 7 hours and questionnaire respondents is 5.11 hours. While, the interview data suggested that Forum Users more or less spent an average professional's typical working day (9am to 5pm = 8hours), the questionnaire revealed that on average this is not the case, and in fact there is more of a mixture of users, from those who spend 12 hours to those who only

come for 1 hour. However, the average 20% of the Forum user's day is spent in and around the Forum space, which is still a significant amount of time. Furthermore, the majority of participants were in the age group 21 to 24, and were in their second year of their university course. In the sample, the main courses being studied was found to be those from the Business School, therefore it can be said that the majority of participants are studying business which is typically the common profession among mobile workers.

Furthermore, the demographics of the Forum user begin to build an understanding about the 'performative' (Butler, 1993; Goffman, 1956) nature of which they create and recreate their workspace on a daily basis, since they are not stationary in one place. As Gregson and Rose (2000, p. 434) argue that understanding "social identities as performed is to imply that identities are in some sense constructed in and through social action, rather than existing anterior to social processes" which include organisational spaces as argued by Van Marrewijk and Yanow (2010) and Manderson and Turner (2006). The demographics of the Forum user, offer insight into the participants' identity as it exists while they work in the Forum and will further support the results and findings of objective 3.

ii)   What are the main reasons for visiting the Forum space?

One of the Forum project's objectives was to create an inspirational mix of outside and inside space that brings together several facilities under one roof (see: chapter 3, section 3.4.2) (LDA-DESIGN, 2010b). As previously mentioned in chapter six, this move is in line with other universities and their library spaces evolving to accommodate today's contemporary users (Massis, 2010). Given, the plethora of services offered in such spaces today, particularly the Forum space, this research question seeks an answer to which of the many services available are the users visiting for?

The qualitative findings revealed three main reasons participants visited the Forum: work or study, socialising and access to resources (see: chapter 4, section 4.3.2), presented in the order of most common reason for visiting, of which the questionnaire concurred with (see chapter 5, section 5.3.4). Furthermore, the results explained why they chose the Forum space, as oppose to the other available areas on campus: resources (people, research material

and food and drink) and the atmosphere (categorised as: relaxed, sociable or studious). Consequently, atmosphere proved to also have a statistical significance with the reason people visited the forum, as well as scoring highly on the agreement and satisfaction scale. These findings of the main reasons users visit the Forum space, are similar to those found in typical 'learning spaces' (Carlson, 2009).

The literature on 'learning spaces', or 'commons' as they are often termed, often focuses on the variety of services on offer, or the variety of workspaces available or the technological advances (Kolb & Kolb, 2005; Massis, 2010). This study also includes the finding of 'disciplinary power' inherit in the people element available in the Forum space, termed in this study as 'visuality' (Nelson, 2000) which kept users working in the Forum for longer (see: chapter 4, section 4.4.1 and chapter 5, section 5.3.1). This finding is in line with more common organisational spaces, where the everyday working practices are encoded with more than just working and talking but also seeing others conduct their work (Fleming & Spicer, 2004). The goal the University set to bring a variety of services under one roof can be said to have been successful. The Forum is a lively and buzzing place, where people are seen working as well as socialising and raising awareness.

iii) Can the motivations for working in the Forum be identified?

The results to the remainder of the objectives can all be combined to suggest reasons why participants were motivated to visit the Forum. Furthermore, the results from the Spearman's Rank Correlation test reveals strong positive correlations between feeling comfortable and valued in the Forum space, as well as motivated and therefore productive and more satisfied overall.

This has similarities to Knight and Haslam (2010), who argue that certain aspects of organisational space can influence the 'well-being' of an employee. Their experiments found that employee well-being increased when employees were empowered to design their office space. Furthermore, researchers such as Scheiberg (1990), Donald (1994a) and (Elsbach (2003a))have proposed that the possibility to personalise and express oneself is very important psychologically to employees and can lead to greater job satisfaction and performance.

Therefore, it can be argued based on the results, the Forum space itself, is one of the key motivators for users who choose to work or study there. It creates a space, where a variety of workspaces are available, for several activities to occur simultaneously, therefore catering to individual needs, whether it is other people, or other resources. This creates a network of relations between the motivators, their spatial affordances[42] and an individual's perceptive affordances. This finding can be better understood through the Actor – Network Theory. "[ANT] has indeed helped destabilise Euclideanism: it has shown that what appears to be topographically natural, given in the order of the world, is in fact produced in networks which perform a quite different kind of spatiality" explains Law (1997, p. 5). Therefore, it is suggested that the Forum space is just as much an 'actant' as it is an 'actor' in the network of motivations for users working in the Forum.

## 7.2.2. Objective 2:

### To determine multi-locational workers' reasons for working in open-plan spaces

i)    Are there different working spaces / areas available in the Forum?

The empirical studies to date categorise the different areas within the particular case site (Penn et al., 1999; Peponis et al., 2007). These studies typically take the research approach of considering 'space as a distance[43],' which tend to highlight the empirically observable 'physicality' of organisational spaces, such as the geographic location of buildings or departments within the building and even the dimensions the body is observed and can pass through and between certain points (Hatch, 1987). Preceding any type of analysis of the Forum, the different working spaces must be identified. The secondary document analysis showed that the Forum building aimed at updating and upgrading the University campus through the creation of a 'variety of formal and informal learning spaces' (LDA-DESIGN, 2010b). This research question is interested in what these spaces are within the Forum.

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[42] This concept provides insight into the ecological perspective on how humans perceive objects in their environments (Gibson, 1979).
[43] (see: Section 3.2 in chapter 3).

A difference was identified, during the observation stage of data collection, amongst the people who worked upstairs and downstairs, as well as the different work spaces. This meant the Forum space is no longer just a 'Euclidean space' with an attached story as Hetherington (1997b, p. 207) also found in his study of a ceramics museum, "but a more complex topological space in which place and time and memory become *folded* into the materiality of the space" [emphasis added]. Recalling Serres and Latour (1995) handkerchief example which when spread out has certain fixed distances and proximities, *folding* it however brings the corner points, which were once a big distance apart, closer together.  It is this idea in conjunction with Hetherington (1997b) which suggests the Forum space can be divided into more than just its physical dimensions.

Section 4.2 of the qualitative analysis identified different work surface type of spaces which participants could choose to sit at: bench space (see Plate 4.1), sofa (see Plate 4.2) and desk workspaces (see Plate 4.3). The categorisation of areas in this way is unique to this study as some participants had their preferred work surface type of area according to their individual preferences. It can be further said that while these different types of work surfaces are still physical categorisations, it was found that different work surfaces had different affordances attached to them; a concept from the ecological perspective on how humans or individuals perceive objects in their environments (Gibson, 1979) Furthermore, it became evident from participant quotes that noise, played an important role in dividing up the spaces as well; such as  seminar rooms (ideal for group work), quiet and silent areas. This is another example of a non-physical element which determined the different areas of the Forum. A notable finding for this research question, is that while the Forum's  spatial design is essentially a large open plan space, 'spatial boundaries' as termed by Fleming and Spicer (2004, p. 75),  of different areas are evident, whether through work surface type or noise.

    ii)   How can these areas be differentiated?

In the past the categorisation of areas typically consisted of dividing spaces by the type of activity; those who worked and those who socialised around printers or water fountains (see: Fayard & Weeks, 2007). However, for multi-locational

workers, the absence of individually allocated desks requires a different form of differentiation in workspace. In this study, upstairs and downstairs became a form of differentiating between spaces among participants, as they have stated in the interview stage of the data collection (see: section 4.3.2 in chapter 4). Furthermore, quantitative analysis, lead to a more detailed categorisation of the available Forum work surface spaces, mentioned briefly in the answer to the previous question: bench space (see Plate 4.1), sofa (see Plate 4.2) and desk workspaces (see Plate 4.3). In turn this lead to a statistical analysis of both upstairs and downstairs and types of workspaces. The tests revealed that participants sitting downstairs had more feelings of 'individuality' when compared to those upstairs. Concurrently, there is a statistical significance between work surface area and the variables 'made new friends' and 'initiating interaction'. Participants who were seated at a 'sofa' type of area scored higher when compared to those working at either a bench of desk. Unlike, most studies (see: Lansdale et al., 2011; Oseland et al., 2011), which discuss furnishings such as 'sofa' when describing meeting areas or break out zones, the 'sofa' area at the Forum is used as an alternative work surface type for conducting work on. For example, Becker and Steele (1990, p. 12) found that sofa areas were positioned to as 'activity generators' intended to support 'unplanned face to face' interactions, away from an individuals' desk, in the Forum type of workspace, the sofa area *is* an individuals' desk, yet the interaction element remains, acting like a 'magnet that pull people into these areas', for both working as well as social type of activities.

While type of desk space was identified as the main spatial difference, it became evident from participant quotes that noise, played an important role in dividing up the spaces as well; seminar rooms (ideal for group work), quiet and silent areas. Quiet and silent areas were seen as different by participants, while silent was considered a no noise zone, quiet areas were acceptable for background noise and both qualitative and quantitative data revealed the later was more favourable, among the users of the Forum. In 2005, Banbury and Berry, found that open-plan places were disliked because of the background noise inherited in the particular spatial design, whereas for the particular users of the Forum, background noise was preferable. Lippincott (2010, p. 29) found that even "Librarians are often surprised by some of the attitudes and priorities

of students, such as their tolerance of noise in designated areas." Therefore, it can be said that users chose to work in the Forum space rather than the 'silent' spaces available in the library. This finding has implications for the future of spaces which share common characteristics with the Forum space, such as those being currently developed for Bournemouth and Sheffield Hallam Universities. While this finding further contradicts some of the current literature whose studies were conducted in organisational open-plan spaces, it also suggests that preferences could be changing, given that a younger population such as those in this case study are finding it increasingly easier to work in large open-plan spaces.

iii) Is there any statistical significance between these areas, their reasons and other variables in the study?

Studies in the field of organisational space, with empirical evidence are scarce, while quantitative analysis is employed it is typically within a controlled environment, with controlling variables and controlled activities. For example, the study conducted by Knight and Haslam (2010b), which revealed that empowerment lead to a 32% increase in their participants' productivity, however their experiments were conducted in a 'control room' with 'controlled tasks', not within an individual's natural working environment. Therefore, conducting statistical analysis in a real life case study with its users, can reveal truer interpretations of the data (Finn et al., 2000).

The variables of most importance to the study are: area (simplified; downstairs and upstairs), area (specific; bench, sofa and desk) and regular area (where participants would normally choose to work, not necessarily where they completed the questionnaire) and reasons for visiting (see: section 5.5.2).

In a brief summary, the related variables were, 'individuality', where participants sitting either upstairs or downstairs felt differently about the sense of community or individuality in the Forum space. While the arguments for either were fairly balanced, feelings of individuality prevailed. This is resonant of Butler's (1993, p. 24) concept of performativity which she defines as "a reiteration of norms which precede, constrain, and exceed the performer and in that sense cannot be taken as the fabrication of the performer's `will' or `choice'" (see: section 2.7 in chapter 2). Essentially she suggests that by working in the Forum participants

produced their own identity as Forum workers but did not identify with others as a community.

More importantly, likelihood and agreement of initiating interactions and sociability statements, proved to be statistically significant among each other as well as the variable 'reason'. Therefore, confirming the relationship between interaction, sociability and reasons for visiting the Forum. This concurs with findings from other studies, which suggest that communication and interactions are dependent on the spatial difference among users (Allen et al., 2008; Haner, 2005). In an organisational context, an increase in communications and interactions leads to higher levels of knowledge learning and transfer (see: Zalesny & Farace, 1987), where as in the context, of the Forum  interactions and sociability aligned with the motivations for visiting, which in turn lead to individuals increased feelings of productivity and comfort (see: sections 5.5.3 / 5.6 / 6.4.4).

### 7.2.3.  Objective 3:

**To ascertain any patterns of understanding about a particular space**

> i)    What are the different activities going on in the Forum?

Oldham and Hackman (2010) argue that relationships among people and their various work activities are most in need of empirical research and conceptual attention. In the current literature, different firms within a variety of industries and professionals are researched with a spatial view, each arguing the activities taking place within a space, matter to the type of ideal space used. Elsbach and Bechky (2007) studied lawyers while Backhouse and Drew (1992) main case study  was an architectural design practice, where spatial design played a role in encouraging communication and interactions among team members. On a micro-scale for the relevance of this study, the type of activities taking place can be argued to have similarities. During the interview analysis, it became evident that users of the Forum, differentiated between what activities they were undertaking and what areas they would choose to work in. The main activities in the Forum were proven to be studying and socialising (see: section 4.3.2), this was further confirmed in the quantitative data, as study was the main reason for visiting (65% of the sample) and socialising (19%) was the second most popular

reason. Moreover, participants also explained that their activities could be divided, and in turn would affect their spatial location. For example, studying would be mostly associated with completing essays or coursework, while revising consisted of note taking and reading, while evidence of this in the current study is limited, some participants did mention their preference for quieter areas (less people busy) to be more 'conducive' for essay work type of activities (see: section 4.3.2). In conversations, during the interview stage, sometimes the activity also affected the mediums participants preferred to use.

ii) What are the different mediums used to conduct their activities?

Continuing from the previous research question, to ascertain any patterns of understanding about the Forum space, and having identified the different activities going on, the interviews revealed that the medium which were different from studying to revising. In answering this research question, the main forms of mediums used are paper, electronic and verbal communication, which emerged from interview and observational data (see: section 4.3.2). In spatial terms this can be related to the noise levels of the different areas; background noise, quiet and silent.

The questionnaire concurred that the majority of participants work was electronic ($\mu = 3.95$), and rated the importance and satisfaction of access to technology, such as power sockets and wireless signal to be ranked highly. This finding confirms the trend mentioned earlier in the literature review (see: chapter 2), that people are becoming more mobile and flexible in their working practices, creating and re-creating their workspaces frequently. This is in agreement with Bosch-Sijtsema et al. (2010) recent work on multi-locational knowledge workers, where they highlight the importance of new technology on mobile workers. Furthermore, Vartiainen (2008) found that full accessibility and availability (in terms of various communication technologies) was one of the dilemmas multi-locational workers faced in their every day practices.

iii) Are there any themes which emerge from the data?

Thematic analysis offers itself to providing a rich thematic account of the entire data set (both qualitative and quantitative) and therefore is a useful approach when exploring novel or limited research areas such as organisational space

(Braun & Clarke, 2006). In the methodology (chapter 3) it was argued that an initial thematic analysis of the interview data would aid a starting point for the questionnaire analysis.

The researcher identified two binary spatial relationships, termed as 'unspoken reciprocity' and the 'isolated scholar'. To explain the former, the sub-themes of 'behaviour' and 'visuality' were discussed with evidence from the interviewees. Here, certain interactions among participants and their associated quotes suggested a sense of 'unspoken empathy' or unspoken understanding about appropriate behaviours while working in certain spaces, which were reciprocated among the Forum users.

'Visuality' is a term which was chosen over the words 'vision' or 'visibility' because the former is a natural sense, the latter is about the mechanical process of receiving visible light waves through the retina whereas 'visuality' is the social/ psychological process of socially constructing the meaning of perceived visual data (Natharius, 2004). The act of being visible and viewing people at the same time was a common theme among participants initially in the qualitative findings and also further supported in the quantitative data, through the variables 'people – watching' and 'motivated by people'. The former, scored highly, as participants rated that they 'strongly agree' or 'agree' to the scenario: 'I like people watching', however it was not ranked very highly in terms of importance, and scored averagely on satisfaction levels. This particular finding has implication for both social-exchange theory (Blau, 1964) as well as self-surveillance concepts (Bauman & Lyon, 2013), which lead to the emergence of the second theme: the 'isolated scholar.'

The theme of the 'isolated scholar' emerged both in the qualitative and quantitative data, which has implications for the atmosphere of such spaces. Overall, there was a sense of a more isolated scholar or individual working privately in the open plan space. As objective 1) iii) also discussed, feelings of individuality marginally outweighed a sense of community feel in the Forum space (see: section 7.2.1). While Vartiainen (2008) agrees that multi-locational workers typically work in solitude, there was a mention of "increasing awareness of others' locations and availability reduces the feeling of autonomy" (p. 356), implying that the presence of others encourages more 'coercive'

decisions. Recalling, Dovey's (2008) coercive forms of spatial power, manipulation and seduction are evident in the Forum space. Therefore, it is reasoned that, through the unspoken reciprocity and the visuality process created and experience by individuals, the Forum space has a positive impact in encouraging users to work.

iv) Can it be argued that the Forum is a representative case, of a given typology?

As mentioned previously, a gap exists in the understanding of the intersection between work conducted by multi-locational workers and open public-communal spaces. Therefore, knowledge about workers and working in these spaces is limited. While previous objectives and research questions investigated and determined reasons and perceptions of the Forum user, positioning a typology and discussing to what extent the Forum is a representative case allows for further understanding of the trend of 'interdisciplinary spaces' which are becoming increasingly adopted by Universities here in the UK (Coulson et al., 2014; Temple, 2014).

In achieving this research question, a two by four matrix (Figure 6.1) was developed of organisational space; traditional and open-plan against the type of workers; static, partially, casually and multi-locational workers, a third dimension is introduced to the matrix through a grey scale which differentiates internal from external work environments. This framed University type of workspaces and argued that this new trend of workspaces can be termed as Open Public and Communal (OPC) workspaces. Given the data and analysis of chapters 4 and 5, four main dimensions of OPC workspaces emerge.

Given the work and social type of activities occurring in the Forum space, it is evident that the Forum user; defined here as a multi-locational worker, is conducting work in a 'deskless' office as Van Meel (2000) terms it. Like the 'deskless' office, the Forum user's individual workspace becomes about the variety of activities and support facilities which are present (Laing, 1990), of which flexibility and interaction become fundamental characteristics to their working practices (Coulson et al., 2014).

The four dimensions identified are (chapter 6, section 6.4):

1) flexibility of access daily
2) availability of workspaces
3) flexibility of workspace areas / designs
4) an active atmosphere.

In terms of flexibility of access daily, the Forum space is always open, 24 hours a day, 7 days a week, for students, staff and locals wishing to work in the space. The second dimension, 'availability of workspaces', the Forum was deemed as successful, but could do better during peak times of the academic calendar. Regarding, the flexibility of workspace areas, the Forum was very successful, given its intended objectives, and current users' perceptions, offering, different work surfaces, seating, and alternative noise level areas. Concerning, the 'active atmosphere' it was found that the Forum afforded a workspace foremost and second a sociable and interactional environment. Given, that the Forum space adheres to the four dimensions, it is apparent that the daily working spaces of multi-locational users, also defined by Laing (1990) as the 'deskless office', are less about the physicality of the desk itself and more about the workspace activities, access and atmosphere, occurring in the environment around them, thereby, making it a good representative case of OPC workspaces.

### 7.2.4. Overall Summary of Objectives

One of the main Forum characteristics is its open-plan design, through the realising of the objectives; a positive picture is painted of the Forum, both by its users and other studies as well. This success and spatial design, termed an OPC space, can be viewed as an example of future working spaces.

The first objective focused on the sample of participants and the space itself. The current perceptions of the space were identified and were further aligned with motivations for working in a particular space.

In researching the second objective, there are a variety of workspaces available in the Forum, something which was intended in its initial spatial design conception. If the different workspaces are looked at separately, their location or the seats, a better understanding of the Forum users is captured. For example,

bench users enjoy a larger desk space, whereas sofa users prefer softer seating. Statistical tests revealed that sociability and atmosphere are the main reasons for choosing to work in the Forum.

Next, objective three, aimed to discover patterns about the participants behaviour and habits of their use of the space. Here, the themes of 'unspoken reciprocity' and the 'isolated scholar' which furthered an understanding of the particular users of the Forum space. Furthermore, it is argued that the Forum space is a representative case of the trend of University 'interdisciplinary spaces'; termed here as OPC workspaces. It is maintained that, multi-locational workers' motivations are better understood through their working, social *and* physical workspaces.

In addition, Figure 7.2 was drawn to depict how the findings from the objectives are related to one another. By showing this diagrammatically, the relationships become more evident, particularly those in the middle: availability of workspace and flexible options.

**Figure 7.2: Relationship of Research Findings**
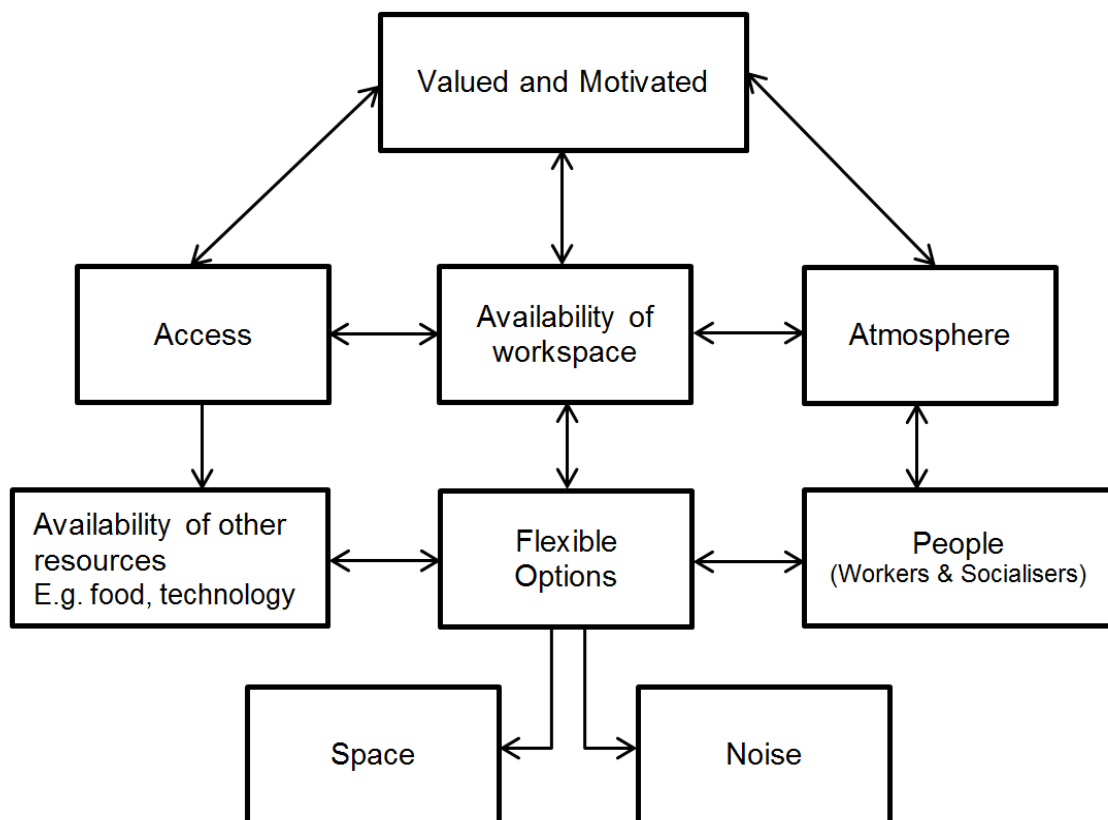


Source: Author

Starting at the top of the Figure, one of the main interests of the study in understanding the multi-locational worker, in this case the Forum users was their reasons and motivations for working in the Forum space. Access, availability of workspace and the atmosphere were all found to have contribution to feelings of motivation, as well as 'feel more a part of this university when working' there; valued. While, access to the space depended on the Forum's opening hours, availability of other resources such as food and technology were also fundamental to participants. Availability of workspace highlighted the importance of 'flexible options', particularly availability of other resources, and other people, spaces, noise areas. Subsequently, atmosphere was an important factor in attracting, motivating and encouraging feelings of value within participants. As a result, people were the fundamental variable in creating that atmosphere, particularly the element of visibility which afforded Forum users motivation to work.

## 7.3. Key Contributions

One of the main aims of the study is to understand the perceptions of multi-locational workers in choosing to work in open public and communal spaces. One of the main findings that contribute to the enrichment of the socio-spatial school of thought is that indeed space plays a role in the motivation of its users to conduct their work. The conceptual and empirical testing and findings this study presents  highlights  the relatively neglected field of organisation space (Baldry, 1997; Baldry, 1999; Conradson, 2003) in relation to multi-locational workers' spaces (Bosch-Sijtsema et al., 2010; Vartiainen, 2008; Venezia et al., 2008) and further provides  an original contribution to knowledge in this context

The Forum space played an important role in creating an environment and atmosphere for its participants to feel comfortable, valued and therefore, motivated and satisfied with their working experience. Since the majority of the sample population was between the ages of 21 to 24, it is maintained that these people's perceptions are valuable representations of the future's working population

Researching the perceptions of young university students and their working practices undoubtedly has implications for tomorrows working practices (Manderson & Turner, 2006; Turner & Manderson, 2007). This study provides an insight into their mediums, behavioural habits and reasons for working in places away from home, particularly open public spaces, such as the Forum. With more universities as well as other organisations moving towards investing in their infrastructure offering public spaces to be enjoyed by everyone, a study such as this can provide key insight into the everyday users of these spaces. Therefore, the mixed method approach of this study can be said to provide a methodological contribution to the field of socio-spatial analysis.

A key finding from this study is the importance of the availability of different types of working spaces. As chapter 6 highlights, one of the four dimensions which have been identified from the Forum case study, is the availability of flexible spatial options. Throughout the interviews, some participants explained their preference for bench type of areas, because it gave them the flexibility to spread out their materials over a larger area, where as some preferred sofas because of their location near the library and comfortable seats, which also meant they stayed there the longest and didn't turnover as much as the other areas.  The need for flexibility in work spaces further supports the working practices of multi-locational workers, whose main purpose is flexible working conditions. This finding suggests that 'flexibility' should not only be limited to workers working practices but their spatial environment as well, which is also considered an important  contribution to knowledge, in the socio-spatial school of thought.

One of the findings particularly, supported by the research revealed the importance of the presence of other people, while people worked, particularly seeing other people work, motivated Forum users to work as well. To reiterate, Koskela (2002, p. 292) cites an important quote from Foucault (1980), which may explain this 'gaze' better:

> "There is no need for arms, physical violence, material constraints. Just a gaze. An inspecting gaze, a gaze which each individual under its weight will end by interiorising to the point that he is his own overseer, each individual thus exercising this surveillance over, and against, himself. A superb formula: power exercised continuously and for what turns out to be a minimal cost" (p. 155).

Similarly, this finding further supports the trend of 'surveillant vision', where the 'panoptic gaze' objectifies the individual (Bauman & Lyon, 2013), where the working world of OPC spaces extends this concept to multi-locational workers, and hence further provides this study's empirical contribution to theory.

Another key contribution that gives insight to the multi-locational workers in these spaces, is the importance of atmosphere, particularly attributes of socialising and interactions. Participants in the interview explained the importance of visiting with friends and meeting up with friends in between working. Furthermore, questionnaire results also revealed a statistical significance between making new friends in the Forum, and overall interaction statements, in fact there was a strong positive correlation between these findings. Some of this relationship (small positive correlation) can also be attributed to the different areas people chose to sit in. Furthermore, this finding can be likened to Turner and Manderson's (2007) study, where it was found that law students confirmed their capacity to efficaciously fit into the corporate legal world through socialising events. Similarly, this understanding of socialisation can be seen as a reiteration of identifying with others working around as University of Exeter students. Indeed, this further explains the medium positive correlation between 'interaction' and feeling 'valued' as part of the University by working in the Forum. Considering the above, it can be said that this provides a key contribution to the understanding of multi-locational workers.

The major contribution of this thesis is its analysis of a specific group of people (multi-locational workers) and their working practices within a case study example of the Forum building. Therefore, by providing detailed research to the understanding of both the workers and OPC spaces, filling a critical gap within the existing literature. Furthermore, the thesis contributes to the concepts of the social production of space (Lefebvre, 1991), spatial power (Dovey, 2008; Foucault 1995) and space as processual, something which is continually produced and re-produced (Dale & Burrell, 2008; Turner & Manderson, 2007; Van Marrewijk & Yanow, 2010), particularly in the context of multi-locational workers in large open plan and public workspaces.

Overall, the thesis makes a distinct contribution to organisational studies through the incorporation of socio-spatial concepts from a wider range of social

sciences. Through a case study approach of analysing users' perceptions of their changing everyday environment provides a deeper understanding about the design and management of these novel spaces. Furthermore, this highlights the importance of space as a key factor in operating and functioning for the benefits of its everyday users as well as the organisations which create them.

## 7.4. Limitations of the Study

In research, it is often maintained that even the most carefully designed studies will have limitations. For this study, the researcher has identified the following methodological limitations.

Methodological limitations are those which are related to the design and execution of achieving the main aims and objectives. The common practical limitations, of time and cost constraints were experienced in this study. The time limitation presented the researcher with the most challenging constraint. The allocated time frame to collect observational and interview data, analyse and then design a questionnaire based on the analysis of the previous data, meant that each section had to be limited. For example, having had more time or experience with statistical analysis, a more complex questionnaire could have been deployed and a more complex and detailed analysis could have been yielded from the sample of respondents. Furthermore, if time was not limited this study would have profited from the addition of more case sites, such as another similar space or a comparison study of a typical or contemporary organisation, due to the uniqueness of the Forum space and participants as a case study, there was difficulty linking this research with other similar spaces, particularly in the positioning within a typology. Additionally, if time allowed, the researcher could have taken a longitudinal approach to the case study, whereby the same site and participants would have been studied on at least two separate occasions.

The researcher is aware that the convenience sampling approach used, meant that some participants were more willing to talk for longer than others, which lead to some respondent's asking for interviews to be kept short. Additionally, it is repeated here that, participants were working, which meant that the interview or questionnaire presented an interruption from their main activity, hence the

interviews were on average 20 minutes long. Furthermore, during the particularly busy period, the hectic environment also presented difficulties in determining appropriate participants for the study.

Language can also be reflected as a minor limitation. This concerns both the language barriers whether in the interviews or the questionnaire, as well as the knowledge bias of the researcher.

## 7.5.  Further Research

This thesis attempts to provide an understanding of multi-locational workers and their motives for working in a particular space. The aims, objectives and research goals are concerned with the Forum users and the Forum space as working space which is produced and reproduced by its users on a regular basis. Through the findings and the positioning of a typology, the researcher has identified some future directions.

One important future implication is the inclusion of a more quantitative form of spatial analysis, such as 'space syntax'. "Space syntax is a set of techniques for the representation, quantification and interpretation of spatial configuration in buildings and settlements" explain Hillier et al (1987, p.363). Space Syntax is a quantitative method, made up of open source software and observation data, which was originally designed to help architects to simulate the possible consequences of their designs. Today, it is used worldwide as a tool for a range of research areas and design purposes. The main reason for this is that its highly descriptive of the characteristic of the built environment allows for connections in social theory to be made with testable design-level propositions (Hillier, 2008).

With other Universities currently in the development of similar spaces, this study can be applied to these new developments for a comparative study. While in this case the general feel of the data suggests that the Forum space has achieved its own goals set out prior to its opening, it would be interesting to see the evolution of the space over a long period of time to get a better appreciation for its success. This has implications for the facilities or operations management disciplines which will benefit from a direct study analysing users' perceptions.

This study focused on a University building; therefore the users were more likely to be students rather than professional individuals. A similar study, using the same methods and approaches could be carried out at either coffee shops or airport lounges which are also examples of OPC spaces.

One main conclusion is apparent from these implications, namely: the study of people who are choosing to work away from home and in OPC spaces, creating and recreating their workspaces every day. The analysis in this thesis demonstrates the importance of availability and flexibility of these spaces, as they represent their daily user who is a multi-locational worker.

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# Appendices

## Appendix 1: Interview Questions

Purpose of research: This study focuses on open plan communal spaces and the creation of workspace in these communal areas, the motivations for and practice of their creation and the symbolism of these workspaces

Ethics: Interviews play a key part in my data collection, if you agree to take part, please be aware that you can pull out at any time. Having signed the informed consent you agree that it is ok to record the interview and if you wish to end the interview at any time, you are free to do so.

1. How often do you work in the forum?

   [Daily or most days]  [About once a week]  [about once a month] [rarely]

   ➔ Would you describe yourself as a regular or occasional forum worker?

2. Why come to F for work?
   a) To what extent is the 'public' nature of the space important to you?
   b) Do you come to FORUM specifically to work for blocks of time or is it a place to work 'in-between' classes?
   ➔ Do you work in FORUM: i) on your own, ii)in groups, or iii) both

(unless answered) Do you have other work areas available to you to work in?
   If 'yes', Why here? Why not there?

3. Is there a preferred time in which you like to work in the FORUM?

   If so, is it: [Morning]  [Afternoon]  [Evening], and / or [During the week] or

   [weekend] and /or [Quiet times]  [busy times]

4. Is there a preferred space you would like to come to?
   If 'yes' what is this space, and why do you choose it? {is it a popular space or often available? If popular, do you make an extra effort to get it (e.g. come in early, leave a coat to 'own it' etc.)?). Describe the space, and the atmosphere.

   If 'no' ➔ How do you select your space – what criteria do you use in order to select a space?  (prompts on criteria: e.g. size of space, visibility, noise, etc.)
   Are there spaces in which you won't work? What are these spaces, and why won't you work there?

5. Describe your ideal space
   ➔ What do you look for in a work space?
   ➔ Prompt: [temperature] [noise] [light] [access to library, student services, peers] [people]
   ➔ Which is the most important of these attributes or characteristics?
   ➔ What do you do to create this space (e.g. personalisation etc.)

➔ Describe the atmosphere, the location.

6. <u>Do you have a normal routine? If so, what is your normal routine (or tell me a day in your life working here)?</u>
Describe / Give examples
Prompts – do you try and secure a space for a long period, do you 'personalise' and / or create barriers to protect your space (if so, how?). What time to you devote to: work, interactions with those around you, social media etc

7. <u>Describe others working around you…</u>
   ➔ their work practices (similar or different to yours?) (e.g. personalising space, working hours, daily patterns)
   ➔ frequency with which you see them (regulars, 'infrequent' etc.)
   ➔ For regulars: are they creatures of habit and routine?
   ➔ Your relationship with them (acknowledgement / friends etc. – is there a community of Forum workers?
   ➔ Who they are (staff / students / friends / strangers etc.)

8. <u>Do you find that being visible is important?</u>
   ➔ Does it help focus & concentration or is it distracting?
   ➔ Is it more or less motivational working where you can be seen compared to where you cannot be seen?
   ➔ To what extents do these factors: shape the way you work, and encourage you to work here.

9. <u>Describe how it makes you feel to work here</u>
   a) Prompt: Do you feel comfortable working here? [for e.g. Part of a community, or Private] – why/ why not?
   b) If applicable – is there a sense of community? And if so, how would you describe this atmosphere / culture?

10. <u>What do /don't you like about working here?</u>
    ➔ Best and Worst things
    ➔ If you could change one thing about the environment, what would it be?
    ➔ If you could change one thing about your working pattern, what would it be?

Those are all the questions I have for you, thank you for taking the time to speak with me about your workspace.

Is there anything I haven't asked about which you think might be interesting to my study?

Would you be happy to be interviewed again, if needed?
Do you have any questions about this study or your participation in it?

## Appendix 2: Transcribed Interview Example

| | |
|---|---|
| **PN** | **Just a reminder, now that I have pressed record, that you can end this interview at any time or even later if you change your mind and would like to end your participation just let me know, are you for us to continue?** |
| **Ms Edith** | Yes, that's …fine, I understand |
| **PN** | Thanks, so… How often do you come to the Forum to work? |
| **Ms Edith** | I'd probably say 5 days a week…so Monday-Friday, I usually come and work in the library when I have exams or during term time as well. |
| **PN** | During term time as well? |
| **Ms Edith** | Yeah |
| **PN** | Do you have a specific time that you come to or…? |
| **Ms Edith** | I usually get here about 9 and stay till 5 or 6 so throughout the day really |
| **PN** | So like a long day? |
| **Ms Edith** | Yeah |
| **PN** | Do you ever come in between classes or…? |
| **Ms Edith** | Yes, so if I have lectures I'd pop in before or then after the lecture in midday come in afterwards. I'd always be working around lectures… so I always come here. |
| **PN** | Oh ok so always come here like in your spare time? |
| **Ms Edith** | Yeah |
| **PN** | Are you a first, second year…? |
| **Ms Edith** | Yes, I'm actually a fourth year. |
| **PN** | A fourth year in? |
| **Ms Edith** | I'm doing the graduate in law LLB so I did my undergrad year here in the first year of doing that. |
| **PN** | That must be really hard? |
| **Ms Edith** | Yeah, it's definitely more work then I thought. |
| **PN** | So, the work you do here is it mostly individual work, group work, both? |
| **Ms Edith** | Mostly individual work, for essays or doing revision or just doing reading for seminars…. |
| **PN** | Is there a preferred space you like to come to like here or in the library? |
| **Ms Edith** | It's usually in the library like downstairs in the lower library or in one of the seminar rooms. |
| **PN** | Is there a specific seat that you like to go to like in the corner or by the window? |
| **Ms Edith** | If there was a window seat I probably would go for it but yeah, I'm not too fussy about where I sit so usually it depends what time you get in if there's space anywhere. |
| **PN** | So you wouldn't try to get in earlier or at a certain time when you know it's mostly available and try reserve it somehow? |
| **Ms Edith** | Yes actually over revision time, me and my friend Laura would try to get in just before 9 just so we can get the seats we want…so yes in the seminar rooms we'd try and get the window seat. |
| **PN** | Do you reserve it somehow? Do you put a coat down, bag down so you can move about throughout the day? |
| **Ms Edith** | No, we just to stick to where we are, so once we got our bags down we just |

| | |
|---|---|
| | stay there for the day. |
| **PN** | Do you personalise the space in anyway? |
| **Ms Edith** | I'd get my desk stuff out of my desk, so books out, pencil case out and everything, drinks, snacks so yes I spread myself out I have to say. |
| **PN** | Do you come in prepared like drinks and snacks? |
| **Ms Edith** | Yeah, I have like my whole bag, all my books in I need, lunch for the day. |
| **PN** | What's important in your ideal space like certain characteristics like if I had to say like temperature, noise, light, access to the library, access to piers? |
| **Ms Edith** | I quite like it i'd rather be in, not necessarily a silent area but a quiet area so I can work, unlike outside here where its really noisy…I like it quite nice and light as well and open and I like it being really busy so if everyone else is full in the room I feel like it makes me motivated to work like everybody else is working so i'll be working. |
| **PN** | Yeah you need to get down to it.. |
| **Ms Edith** | Yeah so I need it quite quiet but busy at the same time. |
| **PN** | Like quite occupied? |
| **Ms Edith** | Yes, yeah |
| **PN** | So we said noise not too much, but you like seeing people and things like that… |
| **Ms Edith** | Yeah |
| **PN** | What do you think are like distractions in the forum? |
| **Ms Edith** | If people are talking quite loudly I'm quite a nosy person so I'd just happen to be listening to them till I get distracted or probably distracting myself to be honest like when me and my friends go for a break so like me and Laura will walk round the library just like have a beer or something get some fresh air so yeah it does'nt take much to distract me to be fair. Anything, Anyone.. |
| **PN** | So, what do you thinks the most important thing then like space or the natural light from the windows? |
| **Ms Edith** | Yeah, the light definitely, I don't like working in a dark room that's why I'd rather come down here rather then sitting in my bedroom at home because its not as light. |
| **PN** | Do you any other access like does your department have a place for you to study? |
| **Ms Edith** | This Amory building as well so there's a library space in there and thats the same again, it gets quite busy, quite full like people working around you but apart from there… |
| **PN** | So would you prefer here rather then there? |
| **Ms Edith** | Yeah, I think here just because it's central as well and you have everything that you need so if you need to go for a walk or anything its like a nice break but its still there. |
| **PN** | yeah so it's close by like the market place and things like that… |
| **Ms Edith** | yeah, definitely |
| **PN** | Where would you go first the Amory building or here first? |
| **Ms Edith** | Here first and the library first |
| **PN** | And if it's not available? |
| **Ms Edith** | Then head back down to Amory building…yeah |
| **PN** | If there weren't any of those 2 places would you go back home to study or come back later? |
| **Ms Edith** | I would try the sanctuary in term time its for exams at the moment or the |

| | |
|---|---|
| | old library but I don't really go there that often but I'd always try here first. |
| PN | So, if you were to come in and lay your stuff out, what comes out first? What do you put out? Where do you put it? |
| Ms Edith | I usually drop my bag, pull out my laptop, check all my emails and then get my books out ,folder,lay them out like with a folder here and books further away so I can read it, take a drink and snack out. |
| PN | Do you like to do that around your space? Do you like creating a barrier when you do that? like from other people? |
| Ms Edith | Yeah, I suppose so like getting all my stuff out not being rude saying this is my space but getting my stuff so I know everything's there I know where everything is. |
| PN | So you mentioned that you work with a laptop, Do you need to use them quite often? |
| Ms Edith | I'd probably say yeah I bring it onto campus every day when I'm using it. |
| PN | In terms of like in comparison to paper-based work, what would you say you do more like definitely work on the laptop? |
| Ms Edith | Probably on the laptop this year to read all my books online and if I'm doing seminar work I'd be typing it all up on a word document so ya mostly on the computer I'd say. |
| PN | You did mention that you didn't like to be elegant in a business space and you like that atmosphere of people being around and you being able to see them work and them be able to see you, how important is that to you? we said you like it but Do you feel like there's some relationship between you guys even though you don't neccesairly know them or not like personally know thembut there is a relation between i'm studying and your studying? |
| Ms Edith | Yeah, it's important for me because I see other people working so thinking they're working, its busy there's competition so I should be working because I'm here. So it does help me, If I was in a quieter room I think I'd probably get more distracted it sounds kinda silly i think like if there's other people working it keeps me more focused because their working i suppose it's like a relationship in a way because of what they're doing affects me. |
| PN | Do you think that there's any difference between your piers working like the type of work that they're doing or...? |
| Ms Edith | I think if they're doing any work that would be motivation for me even if they've got a computer out or reading because they're doing something in their space it makes me want to do it. |
| PN | Who do you think is mostly around here like staff, students, strangers? |
| Ms Edith | Definitely students mostly in the library area, I mean you do see quite a lot of staff walking through as well so a lot of them is mostly students I'd say I mean its not like you see the odd person walking around who isn't part of the uni walking through but yeah mostly students. |
| PN | Do you think staff take advantages of resources here as well? |
| Ms Edith | I think they probably do especially because there are quite a lot of different offices lying around here like the career zone and the sit desk and everything so I do reckon they do use it a lot. |
| PN | Since you come in quite often have you noticed any regular faces that you don't necessarily know do you acknowledge each other? |
| Ms Edith | Yeah, like 'oh you doing that today' and have a little chat with them but especially if you see like another law student and you'll be like 'oh you doing |

| | |
|---|---|
| | that essay' or something. |
| PN | Do you find that you see other people as well like not necessarily colleagues that are doing the same subject but have you met any other people? |
| Ms Edith | Yeah, certain people you will definitely see just because they're in the same room as you and you see them everyday so you feel like you know them. |
| PN | what sort of atmosphere here do you think is about here? Do you think its like a community going on? or would you feel like everybodies in they're private zone like I'm just here to be encouraged to work and not really socialize so much?.. |
| Ms Edith | I know it can be quite social like I know when I come I always call my friends and we'll always come together and you do see other people like on they're lunch break like sat out together on the their lunch break having lunch together… so I think people do come in groups even in the library their'll be people talking to each other like asking questions you can tell they come together, they go for their break together so yeah i'd say its quite social as well. |
| PN | How do u feel working here? Do you feel comfortable? Do you feel safe? |
| Ms Edith | Definitely this is the place I most prefer to work because I feel comfortable working here. |
| PN | What do you and don't like about working here so your best and worst things and if you could change something? |
| Ms Edith | I do like that there is people working around me, so there's always someone here and it just motivates me to work. My least favourite part is probably the competition there is for seats so even if you come in at 10 o'clock it might already be full so its kinda like that scramble to find a table which sometimes you know you've got work to do or a deadline and or you just want to sit down and revise it can be a bit frustraiting if you have to walk around for half an hour to find a place. |
| PN | Do you think this affects your working pattern in anyway like coming here? Does it give you some sort of structure to your work? |
| Ms Edith | Yeah definitely because I think especially coming with someone else to work has a structure like come in at 9 stay till 5 or 6 then go home, yeah you try and do pattern like everyday you'll try and turn it into the same hours even if you have lectures in between then we'll go to lectures come back find a place together. |
| PN | Do you think there's something you could change about that? What would it be like that pattern? |
| Ms Edith | I quite like it being the same every time so maybe sometimes be a bit more flexible say one day I needed to more work then I'd get my mind set where I'd stay an hour later to finish that or I'll come an hour earlier so yeah if I knew I had more work to do then yeah i'd stay in a bit more longer or come in earlier. |
| PN | Do you like the environment here? |
| Ms Edith | Yes, definitely I think this is the best place for me to work. |
| PN | Have you seen any other places? Have you worked in other places? You said you've been here for 4 years right? So you know what the library was like 4 years ago. I don't know what it was like…would you be able to fill me in on that… |
| Ms Edith | Well before, none of this street was here this was the library and that was |

| | |
|---|---|
| | the shops across there, so I think with the forum now it feels like it does seem like a lot more space and there's more of like a social hub to it that can come out and have a break from revision where as before when you were in the library you'd have to walk out somewhere so I'd say its more social now. You know the way you have everything in one place you kinda come out.. |
| PN | Do you like that? |
| Ms Edith | Yes definitely, I think its better because on a rainy day you can stay in here and just go to the shops and everything so yeah I definitely prefer it the way it is. |
| PN | Did you come in as often now as you did four years ago? |
| Ms Edith | Probably not actually I'd say I come in a lot more now |
| PN | But it definitely helps? |
| Ms Edith | Yeah, definitely |
| PN | Well that's all the questions I have for you. Do you have anything else you think you can add to my study about work space or the environment of culture or… |
| Ms Edith | I dunno I always work in the library but I know quite a few of my friends like working off campus that's say in town or at costa something which doesn't really work for me, it's a bit too noisy but I mean its weird how everyone is so different, some people would rather be in that environment where its kind of the opposite of me, it's noisy but at the same time.. |
| PN | They can focus a bit more.. |
| Ms Edith | Yeah definitely |
| PN | Yeahh its kind of like the balance, theres you in the middle and then theres people who cannot work with other people around them then theres you in the middle where you like that sort of busyness and encouragement where as other people can work in noisy environments... |
| Ms Edith | Yeah, because I always wondered whenever I walking past how people can work on the desk thought rather then outside and… |
| PN | Yeahh they love the social element of it.. |
| Ms Edith | That's the thing I always think when I think it probably be good to work there most of the time they would have their headphones in, blocking it out but yeahh.. |
| PN | Yeah that's what I heard from people but not everybody…not as much as last term do people wear headphones now so |
| Ms Edith | Yeahh, more social |
| PN | Do you have any… oh first would you be happy to be interviewed again if needed? |
| Ms Edith | Yeah that's fine yeah |
| PN | and Do you have any questions about the study or your participation in it? |
| Ms Edith | Nope, I think that's all alright |
| PN | Thank you, and just so you know you can pull out again just email me or if you hear anything, if you have any questions or something.. |
| Ms Edith | Yeah |
| PN | Thank you for your time |
| Ms Edith | That's alright thank you |

# Appendix 3: Questionnaire

## Page 1

This study focuses on open plan communal spaces and the creation of workspace in these communal areas, the motivations for and practice of their creation and the symbolism of these workspaces

**UNIVERSITY OF EXETER**

**Research objective:** To understand the use of communal spaces by those who choose to work there

**Ethical Consideration:** You confirm that you have been told of the *confidentiality of information* collected for this project and the *anonymity of your participation*; that you have been given satisfactory answers to your inquiries concerning project procedures and other matters; and that you have been advised that you are *free to withdraw consent* and to discontinue participation in the project at any time without the need for an explanation.

By participating in one or more questionnaire or survey for this project, you understand that such information and related materials will remain anonymous (no details which enable identification will be utilised) and that the results of this study may be published in an academic journal or book.

| 1) Continue? | |
|---|---|
| Yes | |
| No | |

| 2) Gender: | |
|---|---|
| Female | |
| Male | |

| 3) **Considering the two floor plans of the Forum, in which area are you completing this survey?** |
|---|
|  |

|  |  |
| --- | --- |
| A1 |  |
| A2 |  |
| U1 |  |
| U2 |  |
| S1 |  |
| D1 |  |
| If other (Please specify the location): |  |
|  |  |

| 4) Are you an International Student? |  |
| --- | --- |
| Yes |  |
| No |  |

| 5) Which **college** / **department** is your course in? |
| --- |
|  |

| 6) Year of study: |  |
| --- | --- |
| Foundation |  |
| Year 1 |  |
| Year 2 |  |
| Year 3 |  |
| Year 4 |  |
| Postgraduate |  |
| Other (Please Specify) |  |
|  |  |

| 7) How often do you work/study in the Forum? |  |
| --- | --- |
| Daily / Most Days |  |
| Once a Week |  |
| Once a Month |  |
| Rarely |  |

| 8) When you visit, how many total hours on average do spend in the Forum? (Note: 9am to 5pm = 8 hours) |
| --- |
|  |

| 9) Do you work on... | |
| --- | --- |
| Weekdays | |
| Weekends | |
| Both | |

| 10) Preferred times for working in the Forum? | |
| --- | --- |
| Morning | |
| Afternoon | |
| Evening | |

| 11) Do you normally sit in this area? (where you are completing this survey) | |
| --- | --- |
| Yes | |
| No | |
| Other (please specify): | |
| | |

| 12) Are there any other work areas available to you on campus? (If **Yes**, please specify where) | |
| --- | --- |
| Yes | |
| No | |
| if Yes, please Specify: | |
| | |

| 13) Do you like to work when it is... *Also please explain why.* | |
| --- | --- |
| Empty | |
| Busy | |
| No Preference | |
| Please explain why... | |
| | |

| 14) Do you feel you are working as part of a **community** or **individually?** *Also please explain why.* | |
| --- | --- |
| Community | |
| Individually | |
| Please Explain why.... | |
| | |

| 15) To what extent do you believe the following are unlikely or likely? | | | | | |
|---|---|---|---|---|---|
| | Very Unlikely 1 | Unlikely 2 | Neither 3 | Likely 4 | Very Likely 5 |
| Speaking to someone who walks by and recognizes you | | | | | |
| Asking someone to keep an eye on your belongings | | | | | |
| Reserving your work space when you step away for a while | | | | | |
| Making a new friend in the Forum | | | | | |
| Wear headphones | | | | | |
| Initiating interactions with the people around you | | | | | |

16) Which **words** best describe your experience in the Forum?
(Please provide at least 3)

| 17) To what extent do you agree or disagree with the following comments: | | | | | |
|---|---|---|---|---|---|
| | Strongly Disagree 1 | Disagree 2 | Neither 3 | Agree 4 | Strongly Agree 5 |
| The Forum is a comfortable place to work | | | | | |
| The Forum is a sociable place | | | | | |
| The Forum is a productive place | | | | | |
| The Forum is always busy | | | | | |
| I like people-watching | | | | | |
| I like some background noise while working | | | | | |
| The Forum is a safe place | | | | | |
| Seeing other people work motivates me | | | | | |
| Most of my work is electronic | | | | | |
| I like to come with friends | | | | | |
| I like to personalise my space | | | | | |
| I feel more a part of this university when working here | | | | | |
| The Forum is a motivational space | | | | | |
| I have made new friends as a result of working | | | | | |

| here | | | | | |
|------|---|---|---|---|---|

| 18) To what extent do you agree or disagree with the following statements: | | | | | |
|---|---|---|---|---|---|
| | 1 Strongly Disagree 1 | 2 Disagree 2 | 3 Neither 3 | 4 Agree 4 | 5 Strongly Agree 5 |
| I like to work alone | | | | | |
| The Forum is uncomfortable to study | | | | | |
| The Forum is always empty | | | | | |
| The Forum is an unproductive place | | | | | |
| I don't feel motivated in the Forum space | | | | | |
| The Forum is a lonely place | | | | | |
| I need complete silence | | | | | |
| People working around me stresses me out | | | | | |
| I don't like visual distractions (I like to face a wall) | | | | | |
| Most of my work is paper-based | | | | | |
| I feel unsafe | | | | | |

| 19) To what extent do you find the following important or unimportant? | | | | | |
|---|---|---|---|---|---|
| | Very Unimportant 1 | Unimportant 2 | Neutral 3 | Important 4 | Very Important 5 |
| The location of the Forum on campus | | | | | |
| The atmosphere | | | | | |
| The openness of the space | | | | | |
| The colours | | | | | |
| The access to resources | | | | | |
| The availability of space to study | | | | | |
| Others working around you | | | | | |

| 20) Please state your level of satisfaction with the forum: | | | | | |
|---|---|---|---|---|---|
| | 1 Very Unsatisfied | 2 Unsatisfied | 3 Neither | 4 Satisfied | 5 Very Satisfied |
| Atmosphere | | | | | |
| Availability of space to study | | | | | |
| Noise levels | | | | | |
| Temperatures | | | | | |
| Ambiance (light levels) | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Technology Access (Eg: Wifi or power outlets) | | | | | |
| Others working around you | | | | | |

| |
|---|
| 21) In your own words can you give the reasons you come to the Forum? (Note: whether it is to study, meet people, have lunch) |
| |

| 22) Age: | |
|---|---|
| 17-20 | |
| 21-24 | |
| 25-28 | |
| 29-32 | |
| 33-36 | |
| 36-40 | |
| 41-50 | |
| 51-60 | |
| 60+ | |
| I would rather not say | |

## Appendix 4: Observational Notes Example

**Jan Monday 14**

10 am- Peaceful capacity at the same level as last Monday, but it is so much colder

- Sitting in what has become my usual spot now *
- Just noticed that perhaps a marble (or something similar) is probably not the best working surface – for me at least* thin layering of long top and still feeling its cold – put coat back on
- Noticing that others are wearing coats (or some form of thicker jacket on top)

[LIGHT!] – continues from last month – has no one complained?

- 2/6 in this area now (A1)
- Enrolement (uni card) queue seems to be more in use than last week.
– Queue ropes really necessary? *

11am – massive flow of traffic around S2 which disperses very quickly

- People sitting infront of A1 on benches are getting to know each other 'where are you from, what are you studying' type of questions being thrown around
- Looking around there are more conversations happening than earlier – more socialising though

Lights on – auto – off after 6 mins?

11.28 – 5/6 now in A1

- couple next to me are very closely working together – very close in proximity.

12 – big crowd S2 – classes have resumed and it is obvious as traffic flow at the strike of every 1 -2 hours has become  daily and more frequent

- Gone to get coffee-  asked couple next to me to keep an eye on pc and bag – feeling a sense of community and safety to ask – guess I always have around here *
- More people around T1 – 4 groups 2 people all seem to be waiting either together or individually or are they just observing?
- Up by S2 – crowd of people waiting for to enter auditorium, (exams?)
- Sum1 walks up to banister and overlooks → about 8 people follow suit in 10 mins → 9 people now → FTL?
- Btw enrolment is now empty → person responsible still there

C (m) joins couple from earlier – discussing the cold in the forum → it has become clear now that he is their housemate – now D (m) is a part of it too –eating – he is also a housemate? → Confirmed now as they are discussing house chores (recycling, cleaning) → C enquired about what couple did in the shower (jokingly) this morning – I definitely had some guesses myself → C continues and asks 'a water shower?' – all laugh – couple isn't really phased, apologetic but not embarrassed. – Seems like multi-cultural group of people* → 30 mins later and they have gone now, Couple progress to FaceBook and some work but they are mostly chatting among themselves

12.30- it is now quiet – seems to be early for this kind of peace around here* - it is quiet both in numbers of people and noise level

- I've noticed that faces are becoming familiar now*

1pm- there is a rush of people now – flow of traffic is obvious → workers don't really seem phased by the sudden rush of noise. People walking disperse quickly.

1.03 – traffic down S2 again – this time concentrating around library entrance – anxious faces, gloomy weather

-Helpdesk assistants always hold ipads and stand 1-2meters away from helpdesk itself. Sometimes I wonder if so many are necessary*

-Couple – back now B(f) returned 20 mins before A(m) – both working on separate PCs

- there is a sign (only just noticed it*) close to the entrance: 'campus tours' some huddling around it but not much.

-Benches in front of A1 are busy        Together
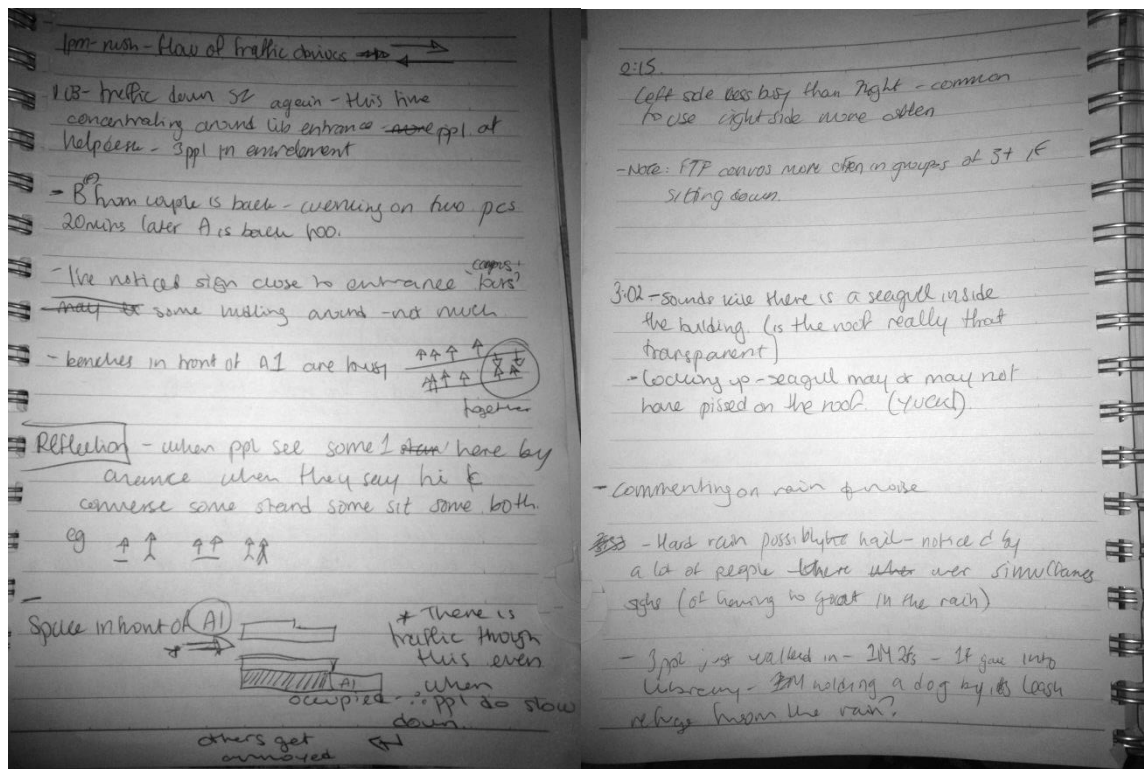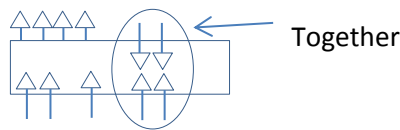
- Majority of people look in the direction of the dogs → dogs are uncommon in the town → 2 guide dogs seen in the past but didn't make a sound.

§ 3:53 benches infront of A1 are empty.

4:00 lights on - earlier a cluster?
- rain stopped (just a quick shower I guess)
- 15 ppl enter from D1 head straight to J2 ← group X
- following the leader? → group Y
- 2nd group of ppl just walked in 5 (so less)
- 1M walked ahead of others


group X
seconds later
group Y
A1
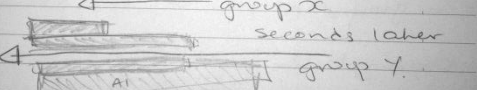
° reminds of a story sumi described to me similar to waiting at traffic lights (if a car is already stationary at lights - all other cars will hold the same line - sometimes even if over - or meters behind it)

- Shaded area A1 now empty

- 2nd hug in 2 mins witnessed.

Performativity (P) - hugging
- sometimes being loud & drawing attention

- (P) - seeing more signs of relief now
  - happy faces.
  - Groups of ppl x4 - all seems to be having 😊 convos.

- new group of ppl now at (A1) ↑ ↑ ↑ ↑

discussing lecture hours (5-7pm) ↑
-ive

## University of Exeter Business School
## Ethical Approval Form: Research Students

This form is to be completed by the research student. When completing the form be mindful that the purpose of the document is to clearly explain the **ethical considerations** of the research being undertaken.

Once completed, please submit the form **electronically and a signed hard copy** to Helen Bell at <u>H.E.Bell@exeter.ac.uk</u>. A copy of your approved Research Ethics Application Form together with accompanying documentation **must be bound into your PhD thesis**.

### *Part A: Background*

| | |
|---|---|
| Student name | **Polina Nikolaou** |
| Supervisors names | **Professor Gareth Shaw** |
| Title of thesis | **The Creation and Display of Symbolism and Power in Organisational Space** |
| Date of entry | **FEB 2011**     Status **FT**     FT/PT/Continuation |
| Start and estimated end date of the research | **December 2012 – September 2013** |
| Aims and objectives of the research | This research aims to explain the phenomenon of the creation of personal space within communal open-plan organisational spaces, and understand the role of symbolism and power.<br><br>This study focuses on open planned communal spaces and the creation of workspace in these communal areas, the motivations for their creation, performativity and symbolism of these workspaces. |
| Please indicate any sources of funding for the research | **N/A** |

## *Part B: Ethical Considerations*

| | |
|---|---|
| Describe the methodology that will be applied in the project (no more than 250 words) | This research project will utilize a case study approach to data collection. The case site is the University of Exeter, and in particular communal spaces within the University of Exeter, including: 'The Forum', 'XFi' and 'Building One'.<br><br>Data sources will include:<br>Firstly, publically available information (e.g. University of Exeter Website), and other documents relevant to the designing and planning processes of the spaces being studied.<br><br>Secondly, a period of observation will take place to identify the nature of and patterns in the use of space by its users. The researcher will also be working while observing and therefore participating in the act of creating a workspace, similar to respondents. This form of observation and reflection will allow for the researcher to better understand respondent intentions, by experiencing the work process as well.<br><br>Subsequently the researcher will approach respondents for a short and informal interview. The researcher will describe the nature of the project and the objective, upon which the researcher will ask participants to sign the 'informed consent' document. If needed, the researcher will ask for participant contact information, if respondents are willing the researcher may ask for a formal semi-structured interview at a later date at a convenient time for the respondent.<br><br>If the researcher feels that additional data is needed to capture more respondents' views, she will carry out a survey and hand out questionnaires to those willing to answer.<br><br>The researcher anticipates the use of visually aided images of individual workspaces in order to use as visual examples in the thesis. The researcher will ask for permission first and ask if any personal information (which may reveal their identity) is present before taking the photo, Additionally; the researcher will take general photos of the case sites in order to set the scene for the readers of the thesis. The researcher will take the photos at quite times when the forum is empty. The intention behind this is to show the space and not who it is used by, therefore faces will be pixelated. If pictures are taken to show how a space is used, the researcher will gain signed consent from the building or facilities manager as well as seeking approval of the image after it is taken if it is ok to progress. |

| | People which may be in the frame will be informed and given the option to move if they do not wish to be in the picture. In any case the researcher will gain verbal consent from those present and explain that their faces will be pixilated. |
| --- | --- |

| Describe the method by which you will recruit participants and gain their informed consent. If written consent will not be obtained, this must be justified.<br><br>*[Note: Please attach a copy of any Information Statements and Consent Forms used, including translation if research is to be conducted with non-English speakers]* | During the observation phase of the research, informed consent from everyone in the space is not a feasible option however the researcher has gained consent for observation from the facility or operations manager of the building/s. The researcher will exercise sensitivity during observation such as not staring at one space or specific people for a long period of time. Notes made will be done discreetly. Additionally, the researcher will complete work of her own throughout the observation process, however, observation notes will be a priority. If the researcher is questioned by participants on her intentions the researcher will reveal her role and the project's objectives and methods.<br><br>Interviews: in the first instance, the researcher will produce 'information and invitation cards' briefly explaining the research project and introducing herself. These will be placed around the spaces, given the above consent of facilities manager is granted. The cards will also invite people to participate in the research through interviews.<br><br>The researcher will recruit participants who are working at the site. These will be informal interviews unless the participant is willing to have a formal interview. In regards to the informal interviews, participants will be first asked for informed verbal consent and offer informed signed consent if they agree. Therefore, all participants (informal and formal interviews) will also be asked to sign an informed consent form which will highlight the projects objectives and methods. For formal interviews which may occur over the phone, an electronic consent form will be sent to be signed before the interview takes place. Additionally, the research will ask for permission to record the interviews. |
| --- | --- |

| Will there be any possible harm that your project may cause to participants (e.g. psychological | Participants of the study will be of University going age or older (usually 18 +/adults) therefore, the researcher will not be seek responses from minors. Further, the research is being conducted in a public place.<br><br>There will be no legal, political or economic repercussions.<br><br>The researcher will take caution to avoid any |
| --- | --- |

| | |
|---|---|
| distress or repercussions of a legal, political or economic nature)? What precautions will be taken to minimise the risk of harm to participants? | psychological distress. No distress is anticipated, but research subjects could feel uncomfortable when being approached for an interview, which calls for sensitivity on approaching participants and in observing them.<br><br>During the observation phase of collecting data, the researcher will gain permission for access from the operations/facility manager of the building/s. If the researcher is questioned by participants on her intentions the researcher will reveal her role and the project's objectives and methods. Additionally, the researcher will have information cards to hand out in such circumstances.<br><br>No highly personal information will be sought. When speaking to participants, the researcher will provide information on the research project, its objectives, methods and any other information the participant would like to know. At all times the researcher will be conscious of herself and the participant and depart if cues are detected that the respondent is uncomfortable or if they simply wish to withdraw. Participants will be informed at the start that they can decline to participate in the project at any point, without having to state a reason.<br><br>All data will remain anonymous in terms of participants' names and organisational roles. The researcher will use pseudonyms.<br><br>If visual methods are to be conducted which involve images of an individual's a space, the researcher will first ask for permission from the individual and ensure anonymity. The images are to be used to show how a space is used not by whom. Faces will be pixelated to anonymize individuals. |

| | |
|---|---|
| How will you ensure the security of the data collected? What will happen to the data at the end of the project, (if retained, where and how long for)?<br><br>*[Note: If the project involves obtaining or processing personal data relating to living individuals, (e.g. by recording interviews with subjects even if the findings will subsequently be made anonymous), you will* | All <u>Interview Data</u> will be considered as sensitive data both in electronic and paper form.<br><br><u>Paper based</u> data will be locked in a secure cabinet at any point the researcher is not using it.<br><br><u>Encryption</u> of electronic data will be stored on a password encrypted hard drive which will also be kept in a secure cabinet.<br><br><u>Anonymity</u> will be ensured for all participants. Records of original names, |

| | email addresses and phone numbers will be kept private and only accessible by the researcher. |
|---|---|
| *need to ensure that the provisions of the Data Protection Act are complied with. In particular you will need to seek advice to ensure that the subjects provide sufficient consent and that the personal data will be properly stored, for an appropriate period of time.]* | In adhering to the University of Exeter's guidelines, data will be destroyed 5 years after the end of the project. |

## *Part C: Ethical Assessment*

Please complete the following questions in relation to your research project.

| | yes | no | n/a |
|---|:---:|:---:|:---:|
| Will participants' rights, safety, dignity and well-being be actively respected? | ● | | |
| Will you describe the main details of the research process to participants in advance, so that they are informed about what to expect? | ● | | |
| Will you tell participants that their participation is voluntary? | ● | | |
| Will you tell participants that they may withdraw from the research at any time and for any reason? | ● | | |
| Will confidentiality be appropriately maintained at all stages of the project, <u>including data collection, storage, analysis and reporting</u>? | ● | | |
| Will any highly personal, private or confidential information be sought from participants? | | ● | |
| Will participants be involved whose ability to give informed consent may be limited (e.g. children)? | | ● | |
| Will the project raise any issues concerning researcher safety? | | ● | |
| Are there conflicts of interest caused by the source of funding? | | ● | |

Please provide any additional information which may be used to assess your application in the space below.

### *Part D: Supervisor's Declaration*

As the supervisor for this research I can confirm that I believe that all research ethics issues have been considered in accordance with the University Ethics Policy and relevant research ethics guidelines.

Name:     Professor Gareth Shaw

Signature:

Date:

### *Part E: Ethical Approval*

| Comments of Research Ethics Officer and PGR Management Board.<br><br>[Note: Have potential risks have been adequately considered and minimised in the research? Does the significance of the study warrant these risks being taken? Are there any other precautions you would recommend?] | |
|---|---|
| This project has been reviewed according to School procedures and has now been approved.<br><br>Name: V. P. Winaloori                                              (Research Ethics Officer)<br>Signature:<br>Date: 16.06.13 | |

# Information Card

Title: The Creation and Display of Symbolism and Power in Organisational Space

Objective: This study focuses on open plan communal spaces and the creation of workspace in these communal areas, the motivations for and practice of their creation and the symbolism of these workspaces

Methods: 1) Non-participant observation (where the researcher simply observes and makes notes on the atmosphere, expressions and space use. 2) Semi-structured interviews (where the research will approach participants for quick interviews regarding their use of space).

If you would like more details on the project please contact me at: pn229@exeter.ac.uk If you have any further questions, concerns or complaints please contact: g.shaw@exeter.ac.uk [Supervisor] or v.p.wimalasiri@exeter.ac.uk [ethics representative].

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## INFORMED CONSENT FOR INTERVIEWS
### Title of Project: The Creation and Display of Symbolism and Power in Organisational Space

This study focuses on open plan communal spaces and the creation of workspace in these communal areas, the motivations for and practice of their creation and the symbolism of these workspaces
Research objective: To understand the use of communal spaces by those who choose to work there

I, _____ , agree to be interviewed for the project titled above which is being conducted by *Polina Nikolaou* of *the University of Exeter Business School*].

I confirm that I have been told of the *confidentiality of information* collected for this project and the *anonymity of my participation*; that I have been given satisfactory answers to my inquiries concerning project procedures and other matters; and that I have been advised that I am *free to withdraw my consent* and to discontinue participation in the project at any time without the need for an explanation.

I agree to participate in one or more recorded / not recorded (delete as appropriate) interviews for this project. I understand that such interviews and related materials (eg: photos) will remain anonymous (no details which enable identification will be utilised) and that the results of this study may be published in an academic journal or book.

_____ Date _____

Signature of Interviewee

If you would like more details on the project please contact me at: p.nikolaou@exeter.ac.uk
If you have any further questions, concerns or complaints please contact g.shaw@exeter.ac.uk [Supervisor] or v.p.wimalasiri@exeter.ac.uk [ethics representative].

## Appendix 6: Word Frequency Table

| Word | Frequency | Similar Words |
|---|---|---|
| study | 101 | reading, studies, study, studying, subject, working |
| people | 45 | people |
| friends | 31 | friendly, friends |
| lunch | 27 | lunch |
| place | 25 | location, locations, place, positive, space, spaces |
| social | 23 | sociable, social, socialise, socialising, socialize |
| quiet | 17 | quiet, silence, tranquil |
| around | 16 | around |
| individual | 15 | individual, individually, person, personal, someone |
| productive | 15 | productive |

Source: Author's Fieldwork

# Appendix 7: Ordinal Logistic Regression Test Statistics

## 1) Gender and Interaction

**Model Fitting Information**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. |
|---|---|---|---|---|
| Intercept Only | 35.927 | | | |
| Final | 30.674 | 5.253 | 1 | .022 |

**Parameter Estimates**

| | | Estimate | Std. Error | Wald | df | Sig. |
|---|---|---|---|---|---|---|
| Threshold | [Interaction = 1] | -2.817 | .415 | 46.146 | 1 | .000 |
| | [Interaction = 2] | -1.274 | .295 | 18.664 | 1 | .000 |
| | [Interaction = 3] | .058 | .264 | .049 | 1 | .825 |
| | [Interaction = 4] | 1.343 | .310 | 18.806 | 1 | .000 |
| Location | [Gender=1] | -.824 | .362 | 5.183 | 1 | .023 |
| | [Gender=2] | 0[a] | | | 0 | |

Odds Ratio: Exponential of -0.824 = 0.44

**Test of Parallel Lines[a]**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. | Conclusion |
|---|---|---|---|---|---|
| Null Hypothesis | 30.674 | | | | |
| General | 29.117 | 1.557 | 3 | .669 | Do Not Reject Null |

The null hypothesis states that the location parameters (slope coefficients)

are the same across response categories.

## 2) Gender and Colours

**Model Fitting Information**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. |
|---|---|---|---|---|
| Intercept Only | 33.302 | | | |
| Final | 28.958 | 4.345 | 1 | .037 |

**Parameter Estimates**

| | | Estimate | Std. Error | Wald | df | Sig. |
|---|---|---|---|---|---|---|
| Threshold | [Colours = 1] | -4.306 | 1.013 | 18.062 | 1 | .000 |
| | [Colours = 2] | -1.491 | .322 | 21.434 | 1 | .000 |
| | [Colours = 3] | .041 | .267 | .023 | 1 | .879 |
| | [Colours = 4] | 2.202 | .358 | 37.877 | 1 | .000 |
| Location | [Gender=1] | .769 | .372 | 4.264 | 1 | .039 |
| | [Gender=2] | 0[a] | . | . | 0 | . |

Odds Ratio: Exponential of 0.769 = 2.16

**Test of Parallel Lines[a]**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. | Conclusion |
|---|---|---|---|---|---|
| Null Hypothesis | 28.958 | | | | |
| General | 23.936 | 5.022 | 3 | .170 | Do Not Reject Null |

The null hypothesis states that the location parameters (slope coefficients)

are the same across response categories.

## 3) Gender and Q19 – Importance

## Model Fitting Information

| Model | -2 Log Likelihood | Chi-Square | df | Sig. |
|---|---|---|---|---|
| Intercept Only | 56.177 | | | |
| Final | 51.469 | 4.708 | 1 | .030 |

**Parameter Estimates**

| | | | Estimate | Std. Error | Wald | df | Sig. |
|---|---|---|---|---|---|---|---|
| Threshold | [Q19 = 1.67] | = | -4.307 | 1.013 | 18.087 | 1 | .000 |
| | [Q19 = 2.00] | = | -3.601 | .725 | 24.646 | 1 | .000 |
| | [Q19 = 2.67] | = | -2.883 | .527 | 29.960 | 1 | .000 |
| | [Q19 = 3.00] | = | -1.892 | .361 | 27.532 | 1 | .000 |
| | [Q19 = 3.33] | = | -.822 | .278 | 8.726 | 1 | .003 |
| | [Q19 = 3.67] | = | -.368 | .265 | 1.921 | 1 | .166 |
| | [Q19 = 4.00] | = | .670 | .272 | 6.069 | 1 | .014 |
| | [Q19 = 4.33] | = | 1.964 | .333 | 34.880 | 1 | .000 |
| | [Q19 = 4.67] | = | 2.903 | .427 | 46.171 | 1 | .000 |
| Location | [Gender=1] | | .766 | .357 | 4.616 | 1 | .032 |
| | [Gender=2] | | 0[a] | . | . | 0 | . |

Odds Ratio: Exponential of 0.766 = 2.15

**Test of Parallel Lines[a]**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. | Conclusion |
|---|---|---|---|---|---|
| Null Hypothesis | 51.469 | | | | |
| General | 47.071 | 4.398 | 8 | .820 | Do Not Reject Null |

The null hypothesis states that the location parameters (slope coefficients)
are the same across response categories.

## 4) International and New Friend

**Model Fitting Information**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. |
|---|---|---|---|---|
| Intercept Only | 38.534 | | | |
| Final | 29.522 | 9.011 | 1 | .003 |

Link function: Logit.

## Parameter Estimates

| | | Estimate | Std. Error | Wald | df | Sig. |
|---|---|---|---|---|---|---|
| Threshold | [NewFriend = 1] | -1.411 | .317 | 19.751 | 1 | .000 |
| | [NewFriend = 2] | .075 | .264 | .081 | 1 | .776 |
| | [NewFriend = 3] | 1.590 | .311 | 26.108 | 1 | .000 |
| | [NewFriend = 4] | 3.272 | .462 | 50.161 | 1 | .000 |
| Location | [International=1] | 1.095 | .371 | 8.708 | 1 | .003 |
| | [International=2] | 0[a] | . | . | 0 | . |

Odds Ratio: Exponential of 1.095 = 2.99

## Test of Parallel Lines[a]

| Model | -2 Log Likelihood | Chi-Square | df | Sig. | Conclusion |
|---|---|---|---|---|---|
| Null Hypothesis | 29.522 | | | | |
| General | 28.335 | 1.187 | 3 | .756 | Do Not Reject Null |

The null hypothesis states that the location parameters (slope coefficients) are

the same across response categories.

a. Link function: Logit.

# 5) International and People Watching

## Model Fitting Information

| Model | -2 Log Likelihood | Chi-Square | df | Sig. |
|---|---|---|---|---|
| Intercept Only | 48.653 | | | |
| Final | 45.070 | 3.583 | 1 | .058 |

Link function: Logit.

## Parameter Estimates

| | | Estimate | Std. Error | Wald | df | Sig. |
|---|---|---|---|---|---|---|
| Threshold | [PeopleWatchin = 1.50] | -4.287 | .744 | 33.194 | 1 | .000 |
| | [PeopleWatchin = 2.00] | -3.146 | .471 | 44.687 | 1 | .000 |
| | [PeopleWatchin = 2.50] | -2.839 | .424 | 44.795 | 1 | .000 |
| | [PeopleWatchin = 3.00] | -1.603 | .310 | 26.789 | 1 | .000 |
| | [PeopleWatchin = 3.50] | -.791 | .275 | 8.275 | 1 | .004 |
| | [PeopleWatchin = 4.00] | .769 | .274 | 7.863 | 1 | .005 |
| | [PeopleWatchin = 4.50] | 1.733 | .339 | 26.082 | 1 | .000 |
| Location | [International=1] | -.676 | .359 | 3.541 | 1 | .060 |
| | [International=2] | 0[a] | . | . | 0 | . |

Odds Ratio: Exponential of -0.676 = 0.51

**Test of Parallel Lines[a]**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. | Conclusion |
|---|---|---|---|---|---|
| Null Hypothesis | 45.070 | | | | |
| General | 39.839 | 5.231 | 6 | .515 | Do Not Reject Null |

The null hypothesis states that the location parameters (slope coefficients) are the

same across response categories.

a. Link function: Logit.

# 6) Individuality and People Motivate

**Model Fitting Information**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. |
|---|---|---|---|---|
| Intercept Only | 57.562 | | | |
| Final | 37.381 | 20.181 | 1 | .000 |

Link function: Logit.

**Parameter Estimates**

| | | Estimate | Std. Error | Wald | df | Sig. |
|---|---|---|---|---|---|---|
| Threshold | [PplMotivate = 1.50] | -4.155 | 1.009 | 16.949 | 1 | .000 |
| | [PplMotivate = 2.00] | -3.446 | .720 | 22.888 | 1 | .000 |
| | [PplMotivate = 2.50] | -2.480 | .469 | 28.003 | 1 | .000 |
| | [PplMotivate = 3.00] | -.303 | .261 | 1.350 | 1 | .245 |
| | [PplMotivate = 3.50] | .443 | .263 | 2.846 | 1 | .092 |
| | [PplMotivate = 4.00] | 1.522 | .305 | 24.980 | 1 | .000 |
| | [PplMotivate = 4.50] | 2.927 | .397 | 54.293 | 1 | .000 |
| Location | [Individuality=1] | 1.662 | .385 | 18.625 | 1 | .000 |
| | [Individuality=2] | 0[a] | . | . | 0 | . |

Odds Ratio: Exponential of 1.662 = 5.27

**Test of Parallel Lines[a]**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. | Conclusion |
|---|---|---|---|---|---|
| Null Hypothesis | 37.381 | | | | |
| General | 35.528 | 1.852 | 6 | .933 | Do Not Reject Null |

The null hypothesis states that the location parameters (slope coefficients) are

the same across response categories.

a. Link function: Logit.

# 7) Individuality and With Friends

**Model Fitting Information**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. |
|---|---|---|---|---|
| Intercept Only | 74.327 | | | |
| Final | 48.082 | 26.245 | 1 | .000 |

Link function: Logit.

**Parameter Estimates**

| | | Estimate | Std. Error | Wald | df | Sig. |
|---|---|---|---|---|---|---|
| Threshold | [WithFriends = 1.00] | -2.684 | .519 | 26.778 | 1 | .000 |
| | [WithFriends = 1.50] | -1.556 | .337 | 21.368 | 1 | .000 |
| | [WithFriends = 2.00] | -.434 | .264 | 2.696 | 1 | .101 |
| | [WithFriends = 2.50] | .244 | .260 | .881 | 1 | .348 |
| | [WithFriends = 3.00] | 1.650 | .318 | 26.984 | 1 | .000 |
| | [WithFriends = 3.50] | 2.723 | .382 | 50.787 | 1 | .000 |
| | [WithFriends = 4.00] | 3.723 | .474 | 61.786 | 1 | .000 |
| | [WithFriends = 4.50] | 5.204 | .775 | 45.055 | 1 | .000 |
| Location | [Individuality=1] | 1.946 | .400 | 23.728 | 1 | .000 |
| | [Individuality=2] | 0[a] | . | . | 0 | . |

Odds Ratio: Exponential of 1.946 = 7.00

**Test of Parallel Lines[a]**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. | Conclusion |
|---|---|---|---|---|---|
| Null Hypothesis | 48.082 | | | | |
| General | 43.348 | 4.734 | 7 | .692 | Do Not Reject Null |

The null hypothesis states that the location parameters (slope coefficients) are

the same across response categories.

a. Link function: Logit.

## 8) Individuality and Q17 – Sociability

**Model Fitting Information**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. |
|---|---|---|---|---|
| Intercept Only | 92.804 | | | |
| Final | 67.418 | 25.385 | 1 | .000 |

Link function: Logit.

**Parameter Estimates**

| | | Estimate | Std. Error | Wald | df | Sig. |
|---|---|---|---|---|---|---|
| Threshold | [Q17 = 2.00] | -4.128 | 1.009 | 16.734 | 1 | .000 |
| | [Q17 = 2.60] | -3.418 | .720 | 22.540 | 1 | .000 |
| | [Q17 = 2.80] | -2.080 | .404 | 26.556 | 1 | .000 |
| | [Q17 = 3.00] | -1.560 | .336 | 21.553 | 1 | .000 |
| | [Q17 = 3.20] | -.683 | .272 | 6.306 | 1 | .012 |
| | [Q17 = 3.40] | -.028 | .258 | .012 | 1 | .913 |
| | [Q17 = 3.60] | .912 | .278 | 10.768 | 1 | .001 |
| | [Q17 = 3.80] | 1.674 | .314 | 28.483 | 1 | .000 |
| | [Q17 = 4.00] | 2.151 | .340 | 39.997 | 1 | .000 |
| | [Q17 = 4.20] | 2.886 | .389 | 54.939 | 1 | .000 |
| | [Q17 = 4.40] | 3.648 | .464 | 61.915 | 1 | .000 |
| | [Q17 = 4.60] | 4.173 | .540 | 59.733 | 1 | .000 |
| | [Q17 = 4.80] | 5.148 | .771 | 44.631 | 1 | .000 |
| Location | [Individuality=1] | 1.879 | .390 | 23.267 | 1 | .000 |
| | [Individuality=2] | 0[a] | . | . | 0 | . |

Odds Ratio: Exponential of 1.879 = 6.55

**Test of Parallel Lines[a]**

| Model | -2 Log Likelihood | Chi-Square | df | Sig. | Conclusion |
|---|---|---|---|---|---|
| Null Hypothesis | 67.418 | | | | |
| General | 59.828 | 7.590 | 12 | .816 | Do Not Reject Null |

The null hypothesis states that the location parameters (slope coefficients) are

the same across response categories.

a. Link function: Logit.