Impact of Digital Communication Technology on Personalization, Perception and Usage of Space

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ABSTRACT

This study intends to consider human behaviors in interior spaces and the possible effect digital gadgets might have on such behaviors. Human behavior in interior spaces is not a new area of study. Various researchers in the field of human behavior such as Irwin Altman and Edward T. Hall assert that humans generally exhibit certain behaviors in interior environments. These behaviors have been identified as follows: territoriality, privacy, crowding, personal space and personalization of space. These behaviors are exhibited by people as a means of a means of regulating interactions with others and also as a way of exercising conrol over what they feel belongs to them.

Digital technology is a phenomenon of this present era which has permeated virtually all aspects of human life. Computers and cell phones are popular forms of this type of technology and their importance has arisen over the years due to the fact that they are able to transmit voices and information at record speeds. These new media technologies have been so inserted into man's daily existence that they have become an intricate part of human existence today (Church et al, 2010).

The use of cell phones and computers is causing great changes in many aspects of human life today. This effect is seen in reduced social relationships between people and even between people and the environment. It is not uncommon to see young people so engrossed in their cell phones that they become oblivious to what is happening around them. This clearly suggests that digital technology is gradually

occupying the larger part of the average young person's life, time and is affecting their relationships with other people and even with their immediate environment.

The aim of this research is to examine if digital communication gadgets are having any effect on human relationships with and in spatial environments. Specific attention is given to perception of space, personalization of space and privacy.

The Nigerian students of Eastern Mediterranean University who reside in dormitories on campus are used for case study. Data is obtained using three methods: surveys (questionnaires), interviews and personal observations and subsequently analyzed and evaluated with descriptive statistics and qualitative description.

This study has various implications for society and these are discussed at the conclusion of the thesis. Several recommendations for further study have also been proffered.

Keywords: Spatial Environments, Space Personalization, Perception of Space, Privacy, Digital Communication Technology

ÖZ

Bu çalışma, iç mekanlarda insan davranışlarını ve dijital araçların bu davranışların üstündeki olası etkilerini araştırmaya hedefler. İç mekanda insan davranışı yeni bir konu değildir. Irwin Altman ve Edward T. Hall gibi bu alanda çalışan farklı araştırmacılar insanların iç mekanda belli davranışlar sergilediklerini ileri sürmüşlerdir. Bu davranışlar, bölgesellik, mahremiyet, kalabalık duygusu, kişisel alan ve kişiselleştirme olarak tanımlanmıştır. Bu davranışlar insanlar tarafından başkalarıyla etkileşimlerini düzenlemek ve ait olduklarını kontrol etme araçları olarak kullanılır.

Dijital teknoloji, fiilen insan hayatının tüm yönlerine nüfuz eden, günümüzün bir olgusudur. Bilgisayarlar ve cep telefonları, bilgileri rekor hızla iletebildikleri gerçeğine dayanarak, önemi yıllar içinde artmış olan bu teknolojinin popüler çeşitleridir. Bu medya teknolojileri öylesine insanın gündelik hayatına girmiştir ki günümüzün insan varlığının girift bir parçası olmuşlardır (Church et al, 2010).

Günümüzde cep telefonları ve bilgisayarlar insan hayatının birçok yönünde büyük değişikliklere yol açmıştır. Bunun etkileri, insanlar arasındaki sosyal ilişkilerin ve hatta insanlar ile çevreleri arasındaki ilişkilerin azalmasında görülmektedir. Cep telefonlarına dalmaları yüzünden etraflarında ne olduğunun farkında olmayan gençleri görmek artık sıra dışı bir olay değildir. Bu, dijital teknolojinin genç insanların hayatlarının ve zamanlarının gittikçe daha büyük bir kısmını işgal ettiğini ve yakın çevreleri ile olan ilişkilerini etkilediğini göstermektedir.

Bu araştırmanın amacı, dijital iletişim araçlarının mekanda insan davranışları üzerinde bir etkisi olup olmadığını bulmaktır. Bu kapsamda araştırmada mekan algılaması, mekanın kişiselleştirilmesi ve kişiselleştirme ile ilişkin olan mahremiyet ve kişisel mekan kavramları da ele alınmıştır.

Doğu Akdeniz Üniversitesinin yerleşkesinde bulunan yurtlarda yaşayan Nijeryalı öğrenciler alan çalışması için seçilmiştir. Araştırma döneleri anket, görüşme, ve kişisel gözlem kullanarak elde edilmiş, analiz edilmiş ve tanımlayıcı istatistikler ve nitel tanımlar ile değerlendirilmiştir.

Bu çalışmanın toplum için birçok yararı vardır. Bunlar araştırmanın sonuç bölümünde tartışılacaktır. Ayrıca ileri çalışmaları için birkaç öneri sunulmuştur.

Anahtar Kelimeler: Mekansal Çevre, Mekan kişiselleştirme, Mekan algısı, Mahremiyet, Dijital İletişim Teknolojisi

…….to my parents: Mr. & Mrs. D.L Yilwa

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INTRODUCTION

1.1 Problem Definition

Humans are relational beings who interact in many different ways. Various forms of human interactions include day to day human-human social relationships as well as human-environmental and human-spatial relationships.

Human behaviors in interior spaces are important aspects of human-spatial relationships. Several researchers in the field of human behavior such as Irwin Altman (1975), and Edward T. Hall (1966) in their books *The Environment and Social Behavior* and *The Hidden Dimension* respectively, assert that humans generally exhibit some common behaviors in interior spaces. These spatial behaviors are foundational to understanding the environment and social behavior.

The most commonly identified human-spatial behaviors are: privacy, personal space, territoriality, crowding and personalization of space (Shklovsk et al, 2014; Altman, 1975). These different dimensions of human-spatial behaviors explain how man understands spaces in relation to himself and others and also reflect his innate desire to own, regulate and manage his spaces for maximum privacy, comfort and self-satisfaction.

Over the years, a new phenomenon has been introduced into man's spatial environment which has the capacity to alter the way humans relate in and with their spaces. This phenomenon is the emergence of digital communication gadgets.

The digital revolution which began in the mid to late 1900's evolved as a transformation from analogue mechanical and electrical systems to various forms of digital technology (The Digital Revolution, USCD). Computers and cell phones are popular forms of this type of technology and their importance has arisen over the years due to the fact that they are able to transmit voices and information at record speeds.

Mobile technologies have so developed and become domesticated over the years that they are no longer considered as just 'expensive curiosities' but rather commodities which have become part of everyday life of users (Shklovsk et al, 2014). This, together with a host of other uses has caused man to be so dependent on them such that most people cannot now live without them. Their multi-functionality includes solving practical problems, providing entertainment or convenient extensions of sociability and most importantly projecting and constructing the self (Fortunati, 2001). These gadgets have taken simple day to day physical activities such as riding on a bus, waiting in a bus park or just taking a walk in a park and interposed them with activities of a virtual dimension wherein people become involved in sending and receiving instant mails, accessing instant news sources, engaging in private conversations with unseen friends or colleagues or otherwise interacting on social media platforms with people from different parts of the globe. Hence one may be in the midst of others yet somewhere else at the same time, receiving and transmitting messages from beyond that physical location (Rafael, 2003).

Operating in a private, virtual world of computers and cell phones often means that there is an alteration in the way people relate with their environments. This can more readily be seen among the younger generation. It is not uncommon to see young people so engrossed in their cell phones either by way of chatting or texting, that they become oblivious to what is happening around them. A study conducted by Hatuka & Toch (2014) on varying dimensions of human interactions in spaces reveals that there is a subtle detachment from physical environments by phone users which manifests in less social interactions. This clearly suggests that digital technology is gradually occupying the larger part of the average young person's life, time and relationships with other people and even with his immediate environment.

Considering the impact that digital communication gadgets are making on day to day life of people, it becomes pertinent to also consider if the use of these gadgets is affecting human behavior in interior environments. This is the question being raised in this research.

The study of human behaviors in interior spaces is not new. Various studies have been conducted in the past on different aspects of human-spatial relationships such as *Territorial Behavior And Design Of Spaces For Children* (Bahmani, 2013), *Space Personalization in Students' Living Environments* (Ayinde, 2016) and *Exploring the Relationship between Place Attachment and Personalization in Student Housing* (Rowley, 2011). Insufficient literature, however, exists on use of digital communication gadgets and their possible effect on perception of space, privacy and personalization of space. An obvious gap therefore exists in literature which this research intends to fill.

1.2 Aim of the Study

The main aim of this study is to investigate the effect of digital communication technology on the relation of people with their interior spaces. In order to achieve this aim, several supporting research questions have been raised. These are:

1. Are the perceptions of students in dormitories towards their interior living environments being affected by digital communication gadgets?

2. Are digital communication gadgets affecting how young people use and personalize their spaces?

3. Does the use of digital communication gadgets affect young people's demands for privacy?

The study will be valuable to understand and give insight to the effect of Digital Communication Technology on the behavıor of young people with interior spaces and with the environment in general. The research has broad design implications to architectural and interior design professionals. Understanding the psychological and behavioral concepts will help designers to create more suitable interior spaces according to people's physical and psychological needs.

1.3 Research Methodology

The method employed for this research is mixed method in which literature reviews and field studies are used. The literature review provides the primary source of data wherein relevant information related to the topic are obtained from various books, journals, articles and past theses. The information collected from the various

literatures gives a clearer understanding of the topic at hand and also provides a foundational base for this study.

Secondary data is obtained from close-ended surveys, in-depth interviews with various voluntary participants, observations and photographic documentation of dormitory spaces by the researcher. These various steps, which were undertaken over the course of two weeks, were carried out with the full consent and active participation of the respondents. The information gathered from the secondary data enabled the researcher to adequately answer the research questions posed at the beginning of the study.

The selected case study is Eastern Mediterranean University (EMU) students because they form a broad range of young people who use digital technology on a daily basis. In order to have a controlled study population in a controlled environment, only students residing in EMU dormitories are considered. Furthermore, the focus of this study has been limited to Nigerian students. This is done for a number of reasons: (1) because they constitute a considerable part of the student population in EMU; (2) to limit the effect of cultural diversity in the study by focusing on a single cultural group, (3) because the researcher is also a Nigerian and thus has considerable comprehension of the culture and behavioral pattern of Nigerian students, (4) because the ground-work for such a study has been laid by Ayinde (2016) who did a similar research on personalizing behavior of Nigerian students in dormitories in EMU. This study however, differs by introducing the aspect of digital communication gadgets and their impact on these personalizing behaviors. The research also opens the discussion further to consider the impact of these gadgets on privacy and personal space requirements of the students.

Three private dormitories are chosen as the field study. They are: Alfam, Akdeniz and Uğursal, These dormitories are selected for the following reasons: (1) they have similar spatial qualities thus giving uniformity for evaluations and assessments; (2) they accommodate a substantial number of Nigerian students compared to the other private dormitories, about 300 in all.

Samples of 30 students, which represent 1 out of every 10 of the population, are chosen as case study through a random selection. Detailed information about the selected case study and data collection methods is available in chapter six.

Several methods are utilized for analyzing and evaluating the data, they include descriptive statistics, represented with tables and bar charts, and qualitative description based on data obtained from the surveys, interviews and observations. Details about the analysis and evaluation are also available in chapter six.

1.4 Structure of the Thesis

This thesis is broken down into seven chapters. Chapter one gives a general introduction to the subject of study and a description of the problem which necessitates the study. Also included in the chapter are the aims of the research, methodology to be used, limitations and the structural layout of the thesis.

The literature review, which contains information obtained from documentary survey, is found in chapters two through five. Chapter two discusses the relationship of human beings and the spatial environment. Space is broadly discussed with special emphasis laid on human perception of space. Chapter three deals with the various types of behaviors humans exhibit in interior spaces. Four specific human behaviors are discussed which are territory and territoriality, privacy, crowding and personal

space. The influence of culture on human spatial behaviors is also considered. Chapter four is a discussion about personalization of space. Various aspects of space personalization are discussed starting with the definition of personalization, the purpose for which people engage in it, ways of doing it and benefits of doing it. Chapter five is a discussion about digital communication gadgets and their impact on society today. It also discusses the influence of these gadgets on youth identity and human-spatial interactions.

Chapter six describes the methodology used for the thesis. The case study is discussed along with detailed explanations concerning the tools used for data collection, analysis and final evaluation. The findings are described and represented with charts, sketches and pictorial graphs. The chapter concludes with discussions about the related findings.

Chapter seven is the conclusion of the study and gives a general summary of the findings obtained in the research. Implications arising from the study are discussed and recommendations for further studies are also suggested. Further details concerning the data collection tools are presented in the appendix section.

1.5 Scope and Limitations of the Study

Every thesis work must, of necessity, have specific scope and limitations which direct the focus of the reseacher and enable him/her to arrive at a logical conclusion. Ths scope of this study is restricted to use of **digital gadgets**, specifically **phones** and **computers** in **interior spaces**. The study is also limited to **Nigerian students** living in **shared rooms** in EMU **dormitories**. There is thus an obvious lack of cultural diversity in the study. Various reasons have already been proferred for this

selection in the methodology section. Among them, however is the desire to build on the ground-work laid by Ayinde (2016) whose work is related to personalizaing behavior of Nigerian students in EMU dormitories.

Secondly, the study has been limited to three private dormitories because of the common similarities which exist between them and which enables them to be evaluated as a single space thus making them ideal for evaluations and analysis in such a research. Restricting the observations to only shared spaces is also designed to give a better understanding of demands for privacy which might not be properly ascertained in single occupancy rooms.

This study was limited by time constraints which prevented the researcher from delving deeper to obtain more data and to conduct more in-depth evaluations and analysis. It also constrained the researcher from opening the scope to engage a larger number of participants. The method of data collection which necessitated direct interviews and observation of dormitory rooms, also served as a constraining factor in this research. This is because the researcher was totally dependent on the availability and willingness of the residents to be interviewed and to have their rooms evaluated and photographed.

This study lays a foundation for subsequent studies related to the use of digital technology and its effect on human behavior in other types of spatial environments such as offices or learning environments. Further discussion on humans and the spatial environment are available in the succeeding chapter.

Chapter 2

HUMAN BEINGS AND THE SPATIAL ENVIRONMENT

This chapter begins with a general discussion about space. The discussion is pertinent because having an understanding of the spatial environment will give a better comprehension of the various human behaviors that take place within spaces. Human perception of space is also briefly discussed.

Human beings have always had a symbiotic relationship with their environment and the spaces wherein they reside. That is to say that there is a reciprocal relationship between the two; people change their environment, so also the environment changes people's behavior and experiences. This is especially true for interior environments where human beings spends the greatest amount of their daily time; as much as 90% (Evans and McCoy, 1998). As people live and interact with their living spaces, their behavior and feelings are influenced by the spaces. The way people relate with space is dependent on the quality of the space as well as the way it is perceived by the individual (Mojarad, 2015; Holzer, n.d.).

2.1 Space – A General Perspective

Space has been defined in the Merriam- Webster dictionary as the limitless area in which all things exist and move. Space can be quite complex in its description. While on the one hand it appears limitless and uncontainable, a vast expanse which extends into infinity, on the other hand it can also be confined or enclosed through the use of boundary markers. This allows specific uses to be allocated to a space.

Space can also be broken down into various levels. According to Lefèbvre (2001), space is a triad made up of the physical, the mental and the social (Figure 1). The physical dimensions of space comprise of the natural environment around us and are made up of a number of features such as objects, texture, material, lighting and color (Osmanlılar, 2012). These features serve to give space its form, limits and defining boundaries (Rigdon, 2007). The mental dimension of space has to do with the logic and formulation of ideas about space. The social or emotional dimensions of space meanwhile have to do with the different types, levels and scopes of human interactions in interior environments (Lefèbvre, 2001).

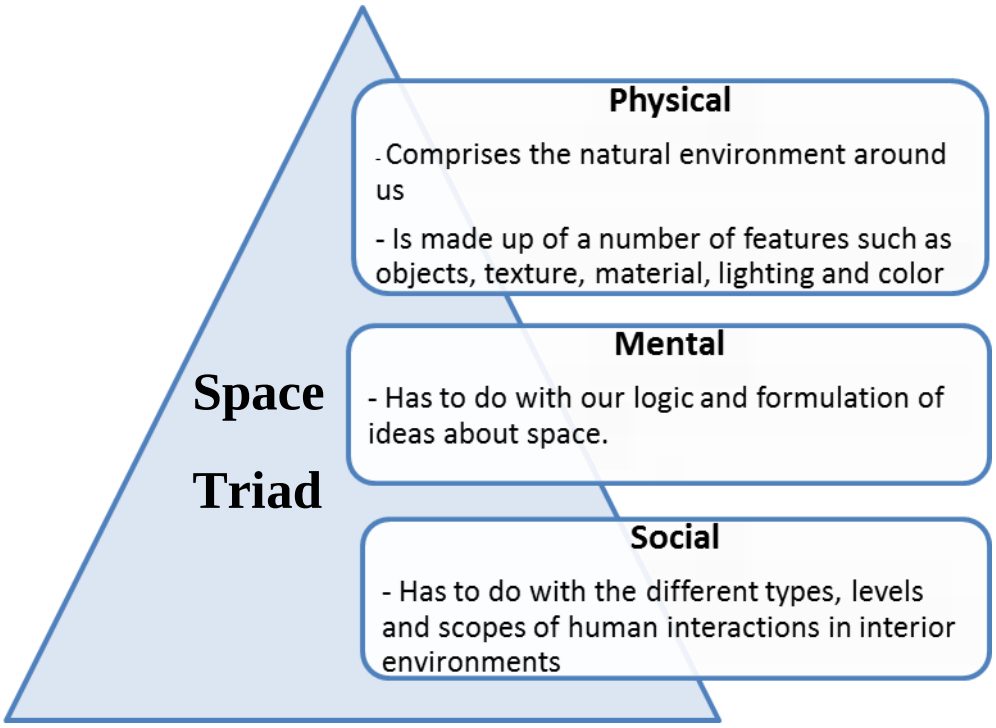


Figure 1: Space triad according to Lefèbvre (2001) (Illustration by author)

Lefèbvre (2001) has also propounded some theories related to social spaces. Within the framework of his theory, various human experiential attributes are ascribed to space. These are presented as *perceptual dimension of space, representation of space*

and *representational space* (Lefèbvre, 1991 as cited by Osmanlılar, 2012). (See Table 1 for details).

Table 1: A tabled framework of Lefebvre's theory of spatial attributes

Spatial Attribute	Description
Perceptual Dimension of Space	- Has to do with how society recognizes and perceives a physical space based on its functions and the skills and knowledge that man needs in order to function in the space (Colpani, 2010).
Representation of space	- Space as it is presented by designers and other professionals concerned with spatial developments such as scientists, architects and engineers. - Is ususally represented with signs, codes and language. - Is regarded as the most prominent dimension of space in any sphere of human society (Osmanlılar, 2012).
Representational Space	- Has to do with man's use of complex symbolism, art and images to represent his thoughts and lived experiences in interior spaces (Lefabre, 1991 as cited by Osmanlılar, 2012).

Human needs vary in sociological, psychological and physiological dimensions. These various dimensions of human need meanwhile can affect the perception that one has of his environment (URL 1). It is important therefore, when designing and managing spaces that these various dimensions of human need be taken into account (Mojarad, 2015).

In interior spaces and indeed all aspects of the architectural experience, a level of interaction exists between the body, the mind and the environment. These three working in harmony enable people to have meaningful interactions with the built environment and to construct lasting memories from their encounters. Certain human

traits must however be involved for the interactions to be meaningful. These are perception, cognition and spatial behavior (Mojarad, 2015).

2.2 Perception of Space

Perception can be described as that first encounter humans have with space, their first connection with their surrounding environment (Pop, 2013). It is a complex process which involves acquiring knowledge through the senses with which people are able to discern the position of objects and their relationship in space with other objects, the surroundings and the perceiver (Flynn, 1983). Simply put, perception is the exchange which occurs between our inside and outside worlds (Bodenhausen & Hugenberg, 2009).

Human perception of space is not an instantaneous event but usually occurs over a period of time. This could be through a short-term process which occurs as humans move through space or through a long-term experiential process (Colpani, 2010). The process of perception, according to Flynn (1983) is gradual and begins early from birth.

During perception, the human senses obtain knowledge which then undergoes a processing stage (cognition). This stage involves a careful scrutiny and comparison of the newly acquired knowledge against previously obtained information which must have been acquired as a result of past experiences. The information is then processed to give psychologically meaningful interpretations that enable people to have an understanding of their inner worlds (See Figure 2). Based on these interpretations, ideal responses can then be generated (Pop, 2013; Bodenhausen & Hugenberg, 2009). This whole perception experience is an on-going process and

occurs many times within the course of a day, most times unconsciously (Choi, Gray, & Brady, 2005).

The amount of information available in a spatial environment is influenced by the properties which that space possesses and this in turn influences human perceptual experiences. The properties of a space could include form, color, texture, dimension, distances, sounds, temperature, time, lights, smells, information related to the moment of the day, seasons, weather conditions, etc. (Pop, 2013; Colpani, 2010).

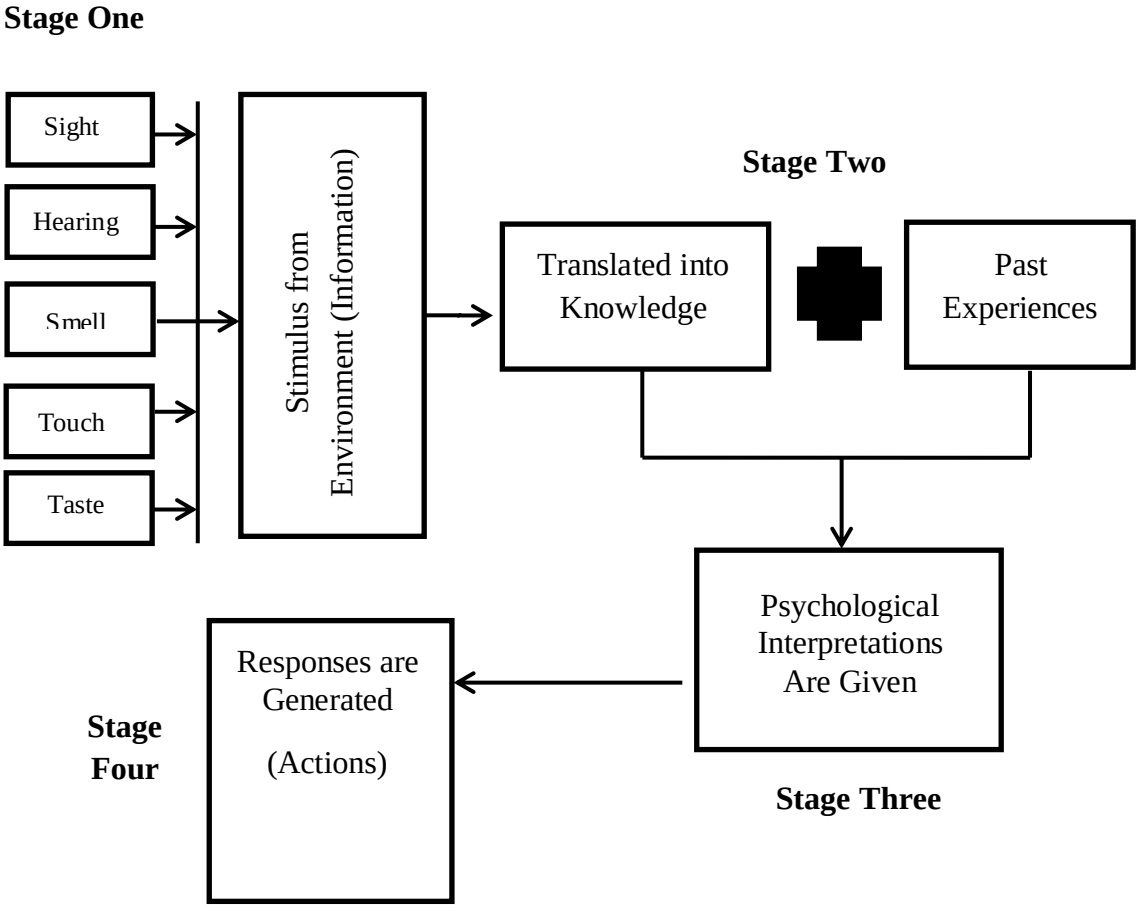


Figure 2: Perception process drawn by author (Extracted from Pop, 2013; Bodenhausen & Hugenberg, 2009)

2.3 Human Senses and the Perception Experience

The human body is made up of different sensorial layers which enable him/her to have different spatial experiences. Massumi (2002) attributes human experiences of reality to three broad sensorial groupings. They are exteroceptive senses, proprioception and interoception. The exteroceptive senses are basically the five human senses: vision, hearing, touch, taste and smell by which one perceives the outside world. Proprioception meanwhile is that sense which enables one to have a perception of the position and movement of the parts of one's own body. It creates a link between the body and the brain and is closely involved with movement. Interoception on the other hand is concerned with the perceptions of the inner body; i.e. it controls the internal regulation responses such as respiration, hunger, heart rate and the need for digestive elimination.

Perception is closely tied to cognition which is essentially a conglomeration of different types of mental knowledge comprising thought, imagination, reason and memory (Pop, 2013) which allow one to have a deeper understanding of the environment. This is achieved by combining direct sensory experiences and past memories (URL 5).

A combination of people's perceptions and cognitions meanwhile results in different types of spatial behavior. Four of these behaviors, i.e. territoriality, privacy, personal space and crowding/density will be discussed in the following chapter.

Chapter 3

HUMAN SPATIAL BEHAVIORS

This chapter intends to look at some behaviors which people tend to exhibit in interior spaces, as identified by different researchers in the field of human studies. Personalization of space is one of the most significant of these behavioral traits. In order for it to be fully understood however, other related human behaviors must first be discussed. These are territoriality, privacy, crowding and personal space. These closely related terms will be discussed individually in this chapter.

3.1 Territoriality

Territoriality stems from the word 'territory' which is defined in Cambridge dictionary as 'an area that an animal or person tries to control or thinks belongs to them.' Territoriality has been studied as a basic principle of human behavior for many years. Its importance is attached to the fact that it is both a social and cultural behavior. Various studies have been done related to territoriality. From these various studies, authors have given their notions of what territoriality means. Abu-Obeid & Ibrahim (2002) define territoriality as the control of spaces and areas in the physical environment while Altman (1975) describes it as the act of communicating one's ownership over a place or object by setting control mechanisms over it through the act of personalization. Meanwhile Kinny *et al* (1987) refer to territoriality as the limits set around a specific space as a symbol of ownership and as a guard against intrusion. From these different explanations above, one can deduce that the basic

idea of territoriality is centered on ownership and control of specific spaces or *territories*.

Sanders (1990) explains human territoriality as a 5-step process in which: a space is defined, a use is apportioned to the space, borders are set around the space, cultural values are apportioned to the land, the space is shielded and defended from unwanted intrusions (Figure. 3).

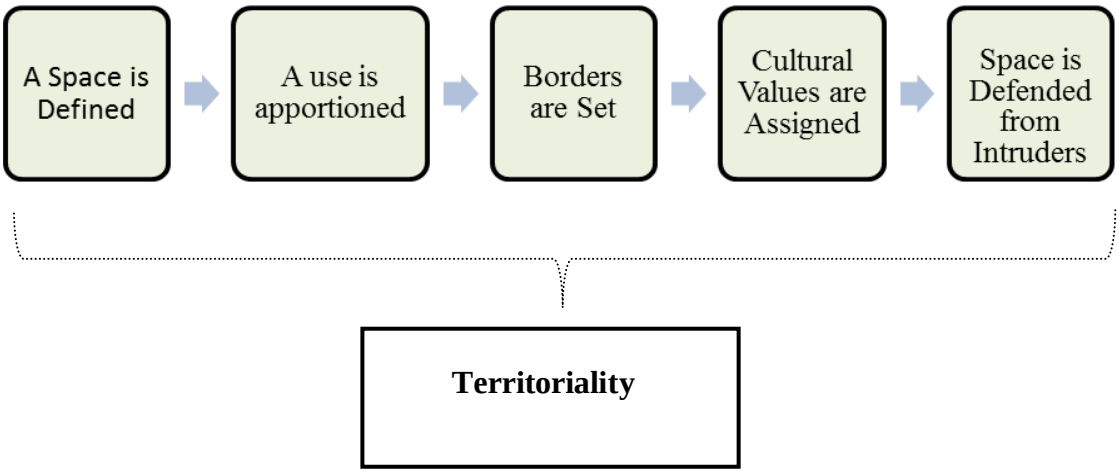


Figure 3: Basic actions associated with human territoriality as described by Sanders (1990)

3.1.1 Types of Territories

Sharkawy & Hussein (1979) in a discussion of territoriality and territorial behaviors have identified four types of territories. These are: attached territory, central territory, supporting territory and peripheral territory. In the same line, Altman (1975) has also presented a similar categorization of territory. He classifies territories as primary, secondary and public spaces. See table (2) for detailed explanation of the territory types.

Table 2: Types of territories as classified by Sharkawy & Hussein (1979) and Altman (1975)

Source	Type of Territory	Description	Examples
Sharkawy & Hussein (1979)	Attached	The immediate sphere of space that is in direct contact with the human body	
	Central	A private area accessible to certain individuals which may be personalized by the individuals provided no existing laws prohibit the act of personalization	-Residential spaces -Office workstations
	Supporting (semi-private or semi-public space)	Such spaces are not owned by a single individual but rather are shared with others or alternatively, are controlled by some individuals despite the fact that they do not have singular ownership of the space.	-Rooms in students' halls of residences -Lawns and -Sidewalks in residential neighborhoods
	Peripheral	Space which belongs to the general public and open for use by all. Such spaces cannot fall under the ownership of a single individual, nor can they be personalized.	-Public libraries -Theatres.
Altman (1975)	Primary	Spaces owned exclusively by individuals or groups usually on a permanent basis. Owners are free to use and personalize them as they wish.	-Bedrooms -Kitchens -Bathrooms
	Secondary	Shared spaces of less importance to individuals or groups than primary territories. The current owners do not necessarily feel the need to exert excessive control over such territories.	-Office desks -Restaurants -Classrooms
	Public	Spaces whish are seen as the domain of all. They are open to both insiders and strangers alike and no one has exclusive ownership of them.	-Beaches, -Hotel lobbies -Shops

3.1.2 Territorial Acts

Territorial acts simply refer to the types of actions people engage in to show ownership of a space or item or to indicate the level of ownership a person has over something (Altman, 1975). Humans as territorial beings exhibit a number of possessive actions over areas which they consider to be theirs. These actions can be classified into two broad groups: claiming action and anticipatory action.

Claiming action occurs when an individual clearly establishes boundaries over a territory and subsequently communicates ownership of that territory to others as a way of discouraging people from intruding or laying claim to it. (Altman, 1975; Becker & Mayo, 1971 & Brown et al, 2014). An example of claiming action as suggested by Brown et al is demarcating space in a shared office by re-arranging furniture (Figure 4).

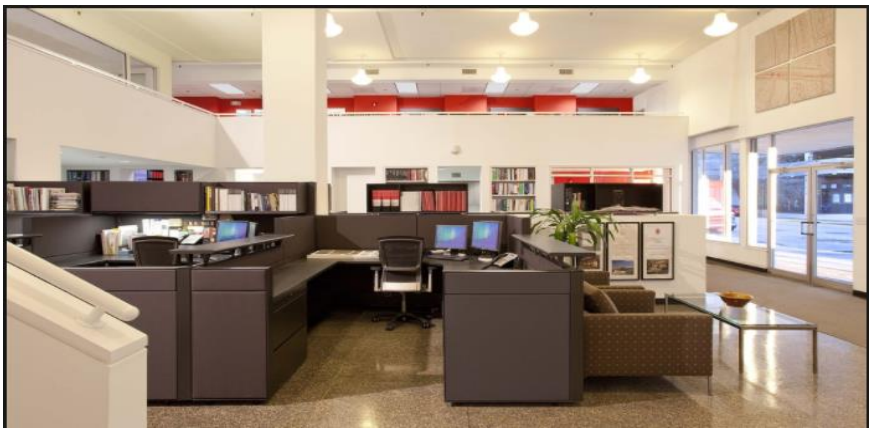


Figure 4: Office spaces created with furniture arrangement (URL 12)

The second classification is what is known as ‘anticipatory defensive action’. This action is normally taken when intrusion by others into personal territories is anticipated (Dyson-Hudson & Smith, 1978). This sometimes happens because people either misinterpret some territorial markings or deliberately ignore them. In order to prevent such from happening, defensive actions may be taken examples of which

include locking of doors or placing passwords on a computer system to hinder access to files (Brown et al, 2014).

Other examples of territorial actions include subtle acts such as placing a coat over a seat as a way of showing protectiveness over a space or perceptible territorial acts such as building defensive structures such as fences, hedges and gates or placing nameplates and other symbols in order to show one's possession (Hansen & Altman, 1976) (Figures 5&6).

Figure 5: Fences and gates are examples of defensive structures which people use to mark territories (Photo by author)

Territorial needs are not restricted to adults alone. Bahmani (2013), in a study of children's territorial behavior in formal care spaces, observes that children also have territorial needs and do exhibit territorial behaviors, though these may be expressed differently from those of adults. She suggests that children should have their own primary territories where they can retreat to anytime they need privacy as doing this will help to alleviate feelings of conflict, tension or discomfort in the children.

Figure 6: Hedges are examples of defensive structures which people use to mark territories (URL 13)

3.1.3 Benefits of Territoriality

A look at some of the benefits of territoriality suggest that: it makes socialization processes easier, it enables the carrying out of certain basic functions such as management of personal identity and regulation of social systems and it creates additional levels of privacy. It also broadens people's freedom of choice by allowing them to decide how much intrusion they will permit into their spaces (Abu-Obeid & Ibrahim, 2002; Altman, 1975; Altman, 1976). Territoriality is also believed to increased one's sense of attachment or feeling of ownership and belonging to a space, object or property (Brown et al, 2014) This increased sense of attachment in turn generates a deeper sense of responsibility and increased efficacy and control over an item or environment (Brown et al, 2014).

3.2 Privacy

Humans are social beings who relate at different levels with other humans, animals and the environment. Despite their desire for social interactions however, people require some levels of privacy in order to live balanced lifestyles. Privacy ensures

that the desire for human contact is controlled through a self/other regulation process (Davis & Palladino, 1997).

Privacy as a concept varies from discipline to discipline. Hence, the way an architect perceives privacy might be different from the perceptions about privacy of a psychologist or sociologist. Mojarad (2015) in her definition of privacy portrays it as a central regulatory human process by which persons make themselves more or less accessible to others. Privacy can also be said to be the selective control of access to the self and others (Altman, 1976).

A close relationship exists between privacy and territoriality. A study of residential neighborhoods in Abu-Nuseir, Jordan by Abu-Ghazzeh (2000) reveals that residents engaged in more territorial behavior when they were not satisfied with privacy levels in their environments. The reverse also proved to be the case. Decreased territorial behavior was observed where there was increased privacy.

For adequate privacy to be achieved, clear boundaries must first be set which clearly define limits of personal space; this ensures that undesired interactions are regulated (Noorian, 2009).

3.2.1 Types of Privacy

Four types of privacy have been suggested by Westin (1970). These are solitude, intimacy, anonymity and reserve.

Solitude has been defined by Westin (1970) as the state of seclusion or separateness from others. This can occur by the deliberate choice of an individual or could be enforced on a person against their will. The second type of privacy as stated by

Westin is intimacy. This is usually a situation where two people who share a very close relationship deliberately exclude themselves from others in order to be alone. Anonymity meanwhile occurs when one is in the midst of others in a public setting yet is unrecognized. The last categorization, reserve, is an action done by an individual who sets up mental boundaries around himself/herself when around others (Table 3).

Table 3: Types of privacy as categorized by Westin (1970)

Solitude	A state of deliberate or enforced seclusion or separateness from others.
Intimacy	A state where two people who share a very close relationship deliberately exclude themselves from others in order to be alone.
Anonymity	A situation where an individual is in the midst of others in a public setting yet is unrecognized.
Reserve	An action done by an individual who deliberately excludes himself from others by setting up mental boundaries around himself.

Privacy is a basic human need which is important for a number of reasons: first is that it helps individuals to better understand themselves and come to a realization of their sense of identity; secondly, it enables people to relate better with their social environment (Altman, 1975).

3.2.2 Consequences of In-adequate Privacy

When humans are deprived of privacy or when their privacy is invaded, a number of negative consequences usually follow. These include: emotional stress which may result in people either intentionally or unintentionally alienating themselves from others. Others are: anger, aggression and social withdrawal, low support for others,

hampered social relationships, and fewer, shallower and less sincere relationships (Altman, 1975; Stokols & Altman, 1987; Abu-Obeid & Ibrahim (2002)

Other consequences of inadequate privacy, especially in working environments are: greater dissipation of employee energy, feelings of stress, aggravated conflicts, dissatisfaction with the place of work, health problems and a feeling of overcrowding (Lawrence et al, 2013; Noorian, 2009; Bodin, Danielsson and Bodin, 2009; Ayoko & Härtel, 2003; Haans et al., 2007; Kim & de Dear, 2013; de Croon et al.,2005).

3.2.3 Privacy Control Mechanisms

Altman (1975) proposes two methods people adopt when seeking solitude. They are control mechanism and withdrawal mechanism.

Control Mechanism involves the deliberate set up of visible and invisible boundaries to define territories and ensure privacy. Examples of visible boundaries are walls, fences, auditory screens or closed doors while an example of invisible boundary is a person's actions such as the simple act of placing a coat on an adjacent seat to prevent others sitting on it (Mojarad, 2015; Heilwel, 1973) (See Figure 7).

Figure 7: Placing a bag on a seat can be a privacy control mechanism (URL 17)

Withdrawal mechanisms involve the deliberate act of pulling away from others. Examples of such behaviors include: re-scheduling of activities, increasing more spaces between individuals, turning ones face or body away in order to avoid eye contact with others, wearing of headphones, staggered use of time or the act of physically leaving an environment (Mojarad, 2015; Heilwel (1973) (Figure 8).

Figure 8: Turning one's face or body away: a type of withdrawal mechanism which people may use to regulate privacy (URL 14)

Amole (2005) buttresses this point in a study she conducted of university students living in shared dormitory accommodations. She found that the rooms were not always planned to cater for students' privacy requirements which led residents to employ different means to cope with such situations. Some used the withdrawal method of studying away from their rooms as a coping mechanism.

Four other approaches have also been suggested by Altman which people often use to arrive at their desired state of privacy. The four approaches are categorized as spoken, unspoken, environmental and cultural (Altman, 1975, Altman, 1976, Altman, 1977) (See table 4).

Table 4: Approaches to privacy according to Irwin Altman

Type of Approach	Description of Approach
Spoken approach	Has to do with people verbally expressing themselves and communicating their desire for privacy to others (Altman, 1975).
Unspoken Approach	Actions are used to convey the feelings of the person who desires privacy. Such actions could be gestures, facial expressions, body stances, body positioning and eye contact (Altman, 1975).
Environmental Approach	Involves the use of physical objects and territorial markers to demarcate space (Altman, 1976).
Cultural Approach	Ascribes the control of social accessibility to the particular physical, psychological and social circumstances of a culture (Altman, 1977).

The use of mobile devices is gradually introducing another dimension of privacy regulation. Mobile phone users often resort to gazing at their phone displays when faced with undesirable social interactions or when trying to avoid unwanted conversations (Baron & Campbell, 2012; de Souza e Silva & Frith, 2012). Nakamura (2015) affirms this view point by stating that phone users who focus their attention on their phones while around others may actually be sending intentional non-verbal messages stating their desire not to be disturbed.

Meanwhile, Hatuka & Toch (2014) assert that smart-phone users have a different perception of privacy than regular phone users. They believe that people who use smart-phones are more detached from their physical surroundings and are more likely to have private conversations in public than non-smart phone users. Hatuka & Toch ascribe the name “portable private personal territories” to spaces inhabited by such phone users because by engaging with their phones, they literally become

immersed in their own private bubbles and live in the illusionment that everywhere is their own personal and private territory (Hatuka & Toch, 2014).

Tchouaffe (2009) argues that the sacredness of personal space and privacy is gradually being corroded by modern day phone culture. He states that people no longer value social mannerisms of engaging others in face to face interactions. People are thus becoming segregated by their own perceptions of space and privacy thanks to the advent of digital technologies.

3.3 Crowding

Crowding can be a subjective personal feeling which a person has of too many people being around him/her. Altman (1975) describes crowding as a situation in which privacy levels are very low; in other words, interactions with others are higher than one would normally desire. This is often a result of a failure of privacy and territoriality regulatory mechanisms, leading to increased unwanted social interactions. The opposite of this scenario is what Altman describes as 'social isolation' i.e. a situation in which privacy levels are higher than the norm whereas interaction levels are minimal.

Crowding has been described by Worchel & Teddlie (1976) as a situation which occurs when individuals feel their personal space has been violated. This in turn causes them to become aggravated and to blame those around them.

Perceptions and experiences of crowding may be attributed to personal, social and physical factors. Personal factors include such elements as one's personality, expectations, attitudes, gender, age or race. For example, a study on the influence of gender on privacy was carried out by Walden, Nelson & Smith (1981) in double

rooms of male and female dormitories where it was discovered that males tended to have more feelings of crowding than the females. Social factors refer to culture, the degree of attitude similarity as well as the magnitudes, types and actions of others while physical factors include architectural features and spatial arrangements.

Subjection to overcrowded conditions leads to reactions of frustration, aggression, or withdrawal from social interactions (Altman, 1975; Stokols & Altman, 1987). Crowding and increased density have also been blamed for some negative behaviors in school children. This was discovered in a study conducted by Maxwell (2003, cited by Amole, 2011) on the effects of spatial density on elementary school children where he reported that increased density conditions negatively affected the academic performance and classroom behavior of female and male students respectively (Maxwell, 2003 cited by Amole, 2011).

3.4 Personal Space

Every individual is accompanied with an invisible bubble of space which that person sub-consciously believes belongs to him or her. This bubble can also be referred to as one's 'personal space'. Sommer (1969) defines it as an area demarcated with unseen markers which encompasses an individual and where others may not enter. Goffman (1971) similarly describes personal space as an area around an individual within which entrance by another causes the individual to feel impinged upon leading to reactions of annoyance or even withdrawal. Meanwhile, Noorian (2009) defines personal space simply as the physical distance one keeps between him/herself and others.

Humans often maintain varying degrees of distance between themselves and others. In most cases, the distance maintained is dependent on the level of closeness between the individual and those around him. Noorian (2009) suggests that personal space is an effective way of attaining privacy and of controlling ones' relations with others. Thus drawing closer to others decreases ones' personal space and suggests a need for closer interaction whilst moving away from others widens ones' personal space and indicates lack of desire for closeness. By thus narrowing and broadening ones' personal space, an effective communication control is set in place.

Understanding personal space means having an understanding of how humans use space and how population density can affect human behavior. Another name for this is 'proxemics' (definition according to dictionary.com).

3.5 Proxemics

Hall (1966), the originator of the term 'proxemics,' defines it as the interrelated observations and theories of human use of space as a specialized elaboration of culture. In Hall's opinion, proxemics behavior has a defining impact on the way and manner in which people relate with one another. Hall elaborates on this by stating that through the study of proxemics, one can determine peoples' daily interactions and spatial organizations, whether at the small scale level of residential buildings or at a larger urban scale.

To have a better comprehension of proxemics and proxemics behavior, it is pertinent to understand the various distances which exist in human social interactions. Two measureable dimensions of human-space relations exist. These are horizontal distances and vertical distances. Most human to human social interactions occur at

the horizontal level. Hall (1966) in his book "Hidden Dimension" outlines four human interpersonal zones of interaction which fall within the horizontal level. These are intimate distance, personal distance, social distance and public distance (Figure 9). Each of these four zones meanwhile is made up of a close phase and a far phase. These are discussed below.

3.5.1 Intimate Distance

Intimate distance, as the name implies, is that zone of very close interactions between people. Within this distance, there is a high degree of involvement with another body and one can easily sense any heat, sound, smell or feel of breath emanating from the other person. A close up of another face at that range may likely be distorted. Hall states that the gap between individuals within the close phase of intimate distance is less than 5cm (6 inches). Such distances are usually reserved for lovers, close friends or family members. At the far phase of intimate distance, the gap between individuals may extend from 15 to 46cm (6 to 18 inches). At this phase, there may be no contact of body parts though the hands can be stretched out to touch the other person. Voice levels are often kept low, sometimes at just a whisper.

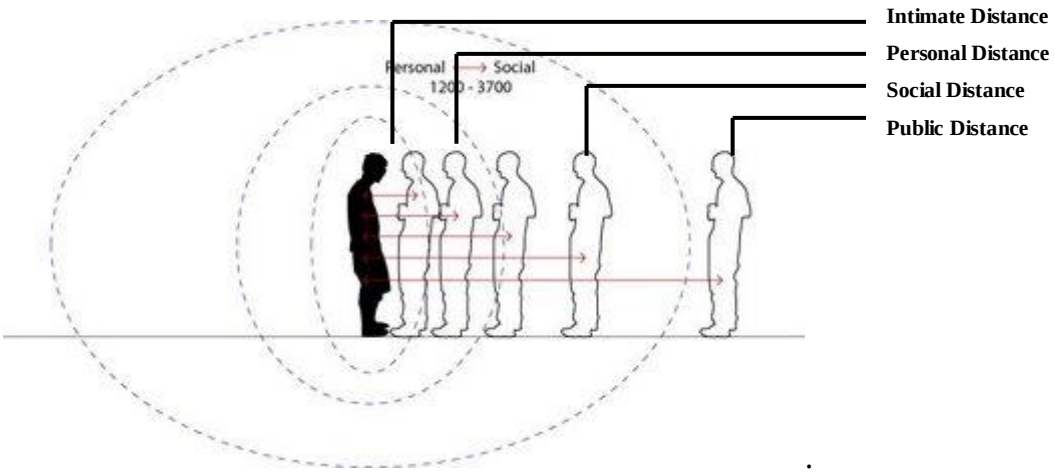


Figure 9: Diagram representation of Edward T. Hall's interpersonal space limits (URL 15)

In many societies, public displays of activities reserved for intimate distances are frowned upon. However, certain unavoidable situations may arise which force people to relate at unwanted intimate distances, for instance crowding in buses or elevators. In such situations, people often resort to some defensive stances to show their discomfort at the unwanted closeness. Common defensive actions include immobility, tensing up of muscles and avoidance of as much contact with others as possible while keeping the eyes deliberately unfocused (Hall, 1966).

3.5.2 Personal Distance

Personal distance lies outside the intimate area and can be described as that space which people maintain to separate themselves from others. Strangers are generally not welcome within this space. The close phase of the personal distance ranges from 46 to 76cm (1.5 to 2.5 feet). Within this zone, the extended human arm defines the range of contact. One can also focus his/her eyes clearly on another's face without any distortion of the features. The far phase of the personal distance is often measured at 76cm to 122cm (2.5 to 4 feet). Physical contact at this phase begins at the point where one person stretches his/her hand to touch another to a point where both individuals need to stretch forth their hands in order for physical contact to be established. Normal discussions as between friends or acquaintances can take place at this distance (Hall, 1966).

3.5.3 Social Distance

The social zone can best be described as the zone within which casual acquaintances, colleagues and business partners relate. Social gatherings also occur within this zone. At the close phase, distances may measure between 1.2 to 2.1 m (4 to 7 feet). Meanwhile the far phase of the social distance measures between 2.1 to 3.7 m (7 to 12 feet). Within the social distance, finer details of another's face are hard to discern.

Also at this stage, eye contact must be maintained for normal conversations to occur; any loss of eye contact is akin to an end of a discussion. An important aspect of this zone is that it makes screening actions possible between individuals. Thus a person may continue work in the presence of another without appearing impolite (Hall, 1966).

Figure 10: Two people not affecting each other's personal space (URL 16)

3.5.4 Public Distance

Public distance is a wide expanse of space around an individual which accommodates general activities such as public speaking. Physical contact within this distance is virtually impossible neither is it expected. The close phase of this zone falls between 3.7 to 7.6 m (12 to 25 feet) and the far phase is at 7.6 m (25 feet) or above (Hall, 1966).

Table 5: Summary of Edward T. Hall's (1966) interpersonal space limits

Intimate	**Personal**	**Social**	**Public**
-Zone Reserved for Emotional Interactions. -High degree of	-Space that people maintain to separate them-selves from others.	-Zone reserved for casual acquaintances, colleagues and business partners.	-Physical contact within this distance is virtually impossible.

involvement with another body. -Distance ranges from 5cm to 46cm	-The extended human arm defines the range of contact. -Distance ranges from 46cm to 122cm	-Distance ranges from 1.2m to 3.7m	- Distance ranges from 3.7 to 7.6m

Proxemics is very important in environmental design. It helps designers to know those distances which are okay for close human interactions and those which are inappropriate for close contact, thus allowing for proper design and allocation of interior spaces. Proxemics also explains people's general sensitivities to certain spaces. For instance, humans are generally more tolerable to intrusion into spaces behind or beside them than to spaces in front of them, provided the intrusion does not result in physical contact (Deasy, 1985) (See figure 12). One can therefore safely conclude that more space is enclosed at the front end of a person's space bubble that at the sides or back.

3.6 The Influence of Culture on Human-Spatial Behavior

Louis Mumford in *The City in History* defines culture as "a learned behavior... which a community or group regards, holds to and subsequently passes on to other members within the community or group." These behaviors are taught within a community through the use of language, traditions, norms, values, expectations and sanctions (Namazian & Mehdipour, 2013).

Culture has a defining role in people's day to day lives. Tracy (2005, as cited by Namazian & Mehdipour, 2013) outlines several aspects of human life that are affected by culture. They include symbols, beliefs, teachings, standards, principles, values and emotions. Perception, cognition and human behavioral patterns are other

important aspects of human life which are affected by culture (Namazian & Mehdipour, 2013).

Levels of social contact and interaction depend on one's cultural background. Hall (1966) dubs some people groups as 'contact cultures' (e.g. Mediterranean, Middle Eastern, Arabic and Hispanic) for the simple fact that they tend to exhibit high levels of social contact and interactions while he labels others 'non-contact cultures' (e.g. Northern European and North American) because of their low levels of social contact and interaction.

Every cultural group has its way of interpreting gestures, spatial distances and physical contact with others. For instance, in the area of personal space and privacy, some cultures have wider personal spaces than others and seem to have no problem with strangers entering their spaces; other cultures on the other hand find an invasion of their space for whatever reason totally unacceptable. An example of this is given by Hall (1966) where he cites Germans as people who are very sensitive to interruptions and to intrusions into their spaces. As a result, they have large personal spaces and tend to value physical protective obstructions such as partitions and doors more than other cultures, for instance, their American counterparts. Hall also cites the example of English people who use voice nuances and non-eye contact more than physical structures to maintain distances from others.

Meanwhile, Augustin (2009) cites the example of certain cultures from northern climates as having larger personal spaces than those from southern climates. Typical examples are Indians and Europeans. While an Indian would have no problem with strangers entering his/her 'personal space', a European would be very much

uncomfortable with that (lexiophles.com) and would most likely react negatively to the invasion (Figures 11 & 12).

Figure 11: Indians are an example of a close contact culture where personal space invasion is acceptable (URL 18)

Figure 12: Negative reactions accompany invasions of personal space (URL 25)

Another set of behaviors which have been found to be influenced by culture are territoriality and personalization of space. This was proved in a study carried out by Kaya & Weber (2003) in which they set out to investigate the differences in

territorial behavior and space personalization between 'contact' groups, represented by Turkish students, and 'non-contact' groups, represented by American students. Their findings re-affirmed the fact that culture does influence territoriality and space personalization and that non-contact group had a much more personal experience of their rooms and a greater expression of self in their rooms than contact groups.

3.7 Cultural Behavior of Nigerians

Nigeria is a country located along the coast of West Arfica. It is flanked by the Gulf of Guinea to the south, Benin Republic to the west , Cameroon to the east and Niger and Chad to the north (URL 8). Nigerians are the most populous people group in the whole of Africa with an estimated population of over 190 million people (worldometers, 2017, URL 9). With over 250 ethnic groups, Nigeria represents a melting pot of diverse languages, cultures and religions. While Nigerians share many common behaviors, their diversity also means they differ in many other behavioral patterns.

In the area of personal space for instance, Nigerians tend to have smaller personal spaces compared to people from western cultures, though this varies according to region and culture. In the southern parts of Nigeria for instance, personal space can be as little as 50cm but tends to increase in the northern parts of the country (URL 8).

It is also generally accepted for these spaces to be indiscriminately encroached upon. Personal space invasion is commonly seen in streets and other public places all over Nigeria. Typical examples of personal space invasion are seen everyday in commercial vehicles such as taxi cabs and buses and even on commercial motorcycles where passengers, who may even be total strangers, are seen seated

together in very close proximity with shoulders and thighs brushing up against one another. (See Figure 13)

Figure 13: Invasion of personal space is a common occurrence in nigeria (Oboh, 2009)

It is also a fairly common practice to see people of the same gender touching each others arms or backs while engaged in a conversation. (URL 8). This behavior is however not common among members of the opposite gender, especially among the older generation, and is frowned upon in many parts of northern Nigerian where Islam dominates the cultures and behaviors of people.

Public displays of affection such as hugging or kissing, particularly between members of the opposite sex are generally frowned upon in Nigerian society. However affectionate gestures between close family members such as a mother and child or between siblings are generally accepted. Handshakes remain the most common form of greeting all over Nigeria; though it is regulated by religious beliefs in some parts of the country, e.g. Muslim dominated areas of northern Nigeria where handshakes between members of the opposite sex are regarded as taboo.

3.8 Behavior of Students in Dormitories

A student housing is a temporary residential facility provided as a dwelling place for students of an institution during the period of their studies. Such facilities are usually provided either by the institution itself or by private organizations in conjunction with the institution. Amole (2009) describes student housing as unique because they are homes to individuals who are passing through a fleeting stage in life and because they are located on a campus, specifically provided for a targeted group of people. The nature of housing provided for students is vital not only for the well-being and adaptation of students to an institution, but also, as pointed out by Hassanain (2008), because, it can lead to improved academic performances, better social bonding and responsible citizenship.

Meanwhile a number of factors have been identified which differentiate student housing from other types of housing. One such factor, according to Rowley (2011), is the shared nature of student housings. Most student residences either have shared bedrooms or shared common spaces. Rowley states that the shared nature of student housing facilities often leads to issues of control, territoriality and self-expression. Meanwhile, Becker & Coniglio (1975) identify space personalization restrictions by dormitory managements as another distinguishing factor between student dormitories and other forms of housing.

Life in a dormitory can be both thrilling and frustrating as students are subjected to living in shared spaces, minimal privacy, sometimes unwanted visitors and noise disturbances at all hours. Various studies have been done on students living in dormitories and how they relate with one another and with their spaces. Thomsen

(2007) & Marcus (1995) identify decoration of space as a common behavior which students engage in either to create a 'sense of 'home' and 'communicate identity' or to assuage conflicts between themselves and their roommates; such decorations are however usually temporary in nature. Meanwhile, density and crowding have been identified as factors which affect comfortability and even academic performance of students in dormitories. This was revealed in a study of dormitory life by Glassman et al (1978) who revealed that students living in high density rooms were more dis-satisfied with their spaces and often had lower grades than students in low density spaces. A study by Baum & Davis (1980) affirms that social life of students is often affected when they are subjected to crowded conditions. They also assert that students who feel in control of a space are often more sociable and have greater feelings of security than those who have no control.

Meanwhile, High & Sundstrom (1977) have identified flexibility of room furniture as a factor which affects interpersonal relations of students in dormitories. Their study reveals that room occupants who have flexible furniture had better interpersonal interactions because they were able to regulate and control interactions between themselves and others.

Meanwhile, a study on behavior of Nigerian students in dormitory environments by Amole (2011) reveals that females are generally more satisfied with crowded conditions in both bedrooms and residence halls than male students. Amole's study also reveals that males engage in more demarcation of personal space as a means of coping with dense living conditions than their female counterparts. These findings support those of Kaya & Weber's (2003) study of residence halls where they

observed males engaging in defining space and claiming territory more than female residents.

This chapter has pointed to the obvious relationship which exists between human behaviors and their interior environments. The study of these human behaviors is important to having a better comprehension of how and why people behave in certain ways in interior spaces. Understanding these human behaviors will give a clearer explanation of how and why people engage in space personalization, another common human behavior which will be discussed at length in the subsequent chapter.

Chapter 4

PERSONALIZATION OF SPACE

As has already been established in the preceding chapter, humans have a basic desire to possess their own personal spaces where they can assert their ownership and where they can have the required privacy they need. The preceding chapter has dealt with four basic concepts which relate to this basic human need: i.e. territoriality, privacy, crowding and personal space. The essence of discussing these four concepts has been to shed more light on another important human behavior known as space personalization. This behavior, which is a natural consequence of the ones previously mentioned, will be discussed in this chapter.

Space personalization is a deliberate act of decorating or modifying a space in such a way that a person's self is reflected in that space (Noorian, 2009). Beıng able to personalize ones space is a clear expressıon of one's control over his space. According to Altman, (1975) and Brown (1987), people often engage in space personalization as a way of defining and protecting their territories or as a way of monitoring interactions with others through the use of personal items. Kron (1983) meanwhile sees personalization as an attempt by humans to adapt to their environment. He goes further to infer that the only way a house can be shown to be a home is by the display of some measure of control through the act of personalization.

Personalization of space is a common human behavior which is generally accepted in society as a basic human right. This is attested to by the fact that even prisoners are not deprived of the opportunity to apply some level of personalization to their living spaces (Marcus, 1995).

4.1 Space Personalization and Self-Identity

People have different ways of expressing themselves or of trying to show 'who they are.' Personalization of space is one such way and much can actually be known about an individual's habıts, talents, needs and interests simply by the way he/she personalizes his/her space (Clemons & Searıng, 2004).

The expression of self through space personalizatıon is an action which is not restricted to specific locations. Any space inhabited by humans can be personalized, be it the home, an office space, classroom, or dormitory (See Figure 14, 15). For instance, Ruark *et al* (2007) have observed from various studies carried out in North America that immediate surroundings of workers in office environments are personalized by approximately 70-90% of the workers.

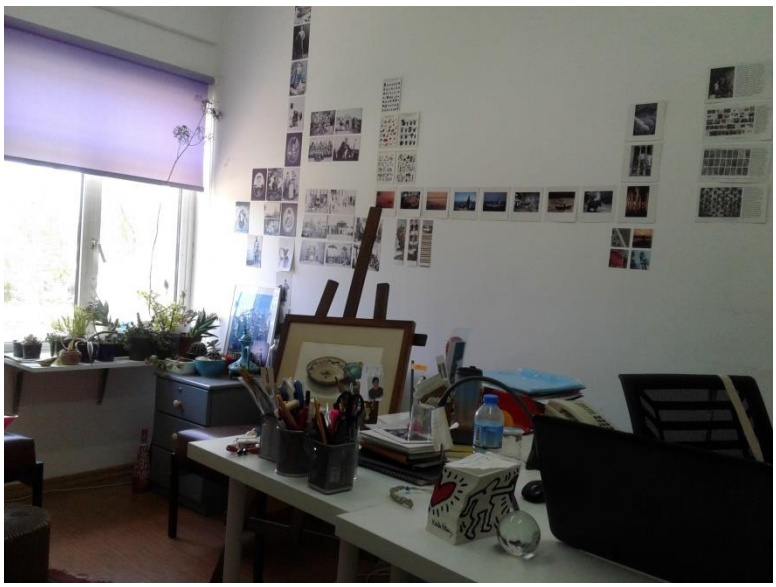


Figure 14: A well personalized office space (Photo by author)

Figure 15: Personalization of learning environment (URL 19)

4.2 Ways of Personalizing Space

The act of space personalization is broad and can be approached in a number of ways. Mojarad (2015) describes one such approach as "identity-oriented personalization." This approach to personalization makes use of symbolic objects and articles which reflect psychological ownership and identity because of the special meaning they hold for the owners. Examples of identity-oriented personalization include the display of trophies, awards or certificates to showcase one's successes and accomplishments in life or the decorating of a worktop or wall with spouse's or children's pictures as a way of proudly displaying aspects of one's personal life.

Other examples of identity-oriented personalization include showing off ones status in society by engraving one's titles on name plates and displaying same on doors, tables or walls or expressing one's interests, hobbies and favorite past-times by showcasing objects or artifacts, which reflect such passions (e.g. travel pictures,

fishing or hiking photos, footballs jerseys or banners of specific fan groups). Items which show a person's cultural affiliations are also identity-oriented (See figure.16).

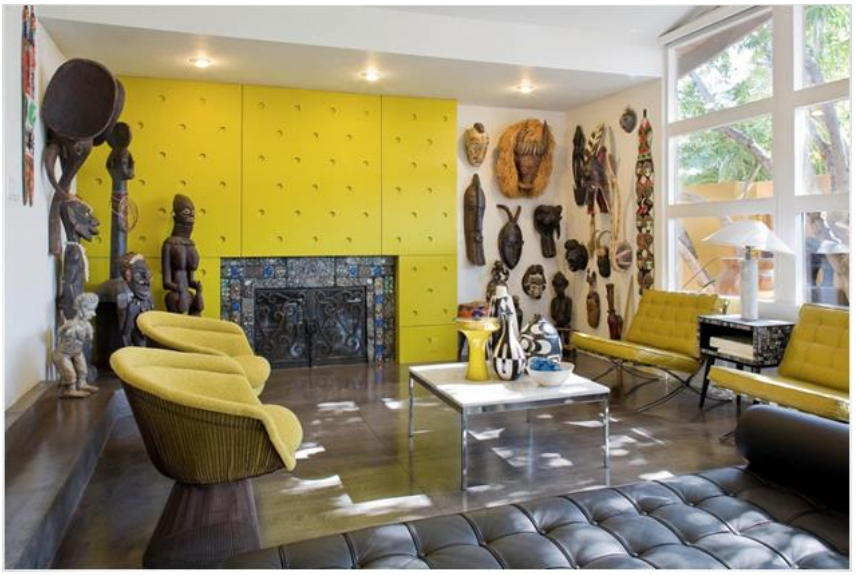


Figure 16: Cultural artifacts used to show one's cultural affiliation (Nothingam, 2014)

Items which people use for personalization can be classified into two: traditional and non-traditional elements (Rowley, 2011). According to Rowley, traditional elements are items which are commonly used for decorative purposes, e.g. posters, photos of family and friends, plants, flowers, artwork, certificates, awards, toys, etc. (Figure 17) while non-traditional items are objects which are not commonly used for decorating spaces but which may in some instances be used for decoration, e.g. spoons, dishes, among others (Figure 18).

Other ways in which people personalize space involves painting interior surfaces with selected colors and re-arranging of furniture (Manninen, 2014). The acts of housekeeping and maintaining of cleanliness have also been identified as acts of personalization (Becker & Coniglio, 1975; Rowley, 2011). Cleanliness refers to the

level of tidiness and general upkeep maintained in a space. It is an indication of the amount of concern residents have for their living spaces (See figure 19).

Figure 17: Traditional decorative elements: e.g. pictures, books, posters, etc. (Rowley, 2011)

Figure 18: Plastic spoons are examples of non-traditional decorative elements (Rowley, 2011)

Figure 19: Examples of space personalization expressed through general up-keep of living spaces (Photos by author)

4.3 Reasons for Space Personalization

Diverse reasons have been proffered as to why people engage in space personalization. Manninen (2014) suggests that establishing comfort and familiarity are reasons why some people engage in personalization. Others engage in space personalization as a way of showing off items which are special to them or which are associated with their work or simply as a way of making their environment look more attractive and appealing (Sundstrom, 1986; Becker 1977). Space personalization is also one of the ways through which individuals can develop stronger feelings of attachment to their environment (Wells (2000), Cooper (1972), Brown (1987) & Goodrich, 1986).

Other suggested reasons for which people engage in space personalization are: desire for territoriality and control over the environment (Averill, 1973), expression of

one's unique personalities (Wells-Lepley et al, 2012) and establishing a sense of identity, both self-identity and workplace identity (Haynes, 2007; Elsbach, 2003; Manninen, 2014).

4.4 Benefits of Space Personalization

Several benefits have been found to be associated with space personalization. For instance, space personalization is often associated with people's state of psychological well-being (Wells, 2000). Altman, (1975) concurs with this view and asserts that space personalization can act as a buffer against adverse physical, physiological and psychological effects of poor privacy guidelines which often manifest as ill-health, stress and feelings of disquiet. Averill (1973) also opines that.personalization enhances feelings of personal control over one's space thus resulting in less tension and increased mental alertness.

Another benefit of space personalization is that it makes for more pleasant living spaces (Carrere & Evans, 1994). With such acts, a person is enabled to easily adapt to unpleasant living conditions. This view is supported by Amole (2005) who conducted a study of dormitory residents and was able to determine that students often personalized their living spaces as a way of bearing up under stressful dormitory residential conditions.

Space personalization is also associated with greater feelings of place identity. This view was confirmed by Rowley (2011) in a study which he conducted on temporary student housing where he was able to establish that increased space personalization was directly linked to increased sense of place identity.

Studies carried out in work environments reveal that personalization creates more enjoyable working environments, develops positive feelings in workers towards their work environment and increases personnel efforts at ensuring the success of their organization. Other benefits are that it results in less absenteeism by workers, helps staff adapt to new working environments, increases job satisfaction and performance and disposes personnel to stay longer in their work companies (Manninen, 2014; Wells, 2000; Gill, 1984; Hess, 1993; Blom, 2000; Scheiberg, 1990; Donald, 1994).

4.5 Gender and Space Personalization

Gender has an impact on space personalization. Studies have shown that males and females have different approaches to personalization. For instance a previous study by Kaya & Weber (2003) showed that men did less personalization than women and tended to display more 'defensive' territorial behavior than the females. Evidence showed that spaces owned by men had firmer and more defined boundaries and that men exhibited a less sharing attitude than the females (Kaya & Weber, 2003). The females on the other hand were more revealing and expressive in their acts of personalization. Kaya & Weber (2003) assert that such personalizing behavior by women was their own means of displaying boundary control. Meanwhile, a study conducted by Wells (2000) also found that women engage in space personalization mostly as a means of expressing their identity and uniqueness while men did it to express their status and sense of place ownership.

Gender also influences the value men and women attach to space personalization. Women generally value space personalization more than men (Saegert, 1980, Brown 1987, Smith, 1994) and are usually more prone to display emotion during space personalization. This can be seen in the care and tenderness they display when

personalizing their spaces (Wells, 2000). Thus while women are more likely to use intimate possessions that hold special meaning to them such as photos, trinkets and letters from loved ones to decorate their spaces, men would more likely use objects which relate to their professions, status, functional needs or levels of achievement (Noorian, 2009; Vinsel *et al*., 1980).

Wells (2000) also seems to infer that women are more aesthetically inclined than men. This makes them more likely to use items such as plants, flowers or other visually appealing items to personalize space than would men. Ayinde (2016) who conducted a research on personalizing behavior of Nigerian students in dormitories came to the same conclusion where she found that spaces personalized by females were more attractive and well decorated than that of their male counterparts whose spaces were often bland, showing little to no acts of personalization.

4.6 Personalization and Information Communication Technology (ICT)

Personalization is a fascinating human behavior which is not restricted to spaces alone. Personal objects can also be personalized. An interesting aspect of this is the personalization of digital gadgets, particularly mobile devices.

Over the years, personalization of mobile phones is being increasingly emphasized. Manufacturers are going all out to ensure phone users have a variety of options when it comes to personalizing their gadgets. All manner of personalization options are open to phone users, from wall papers to ringtones to varieties of phone covers.

Meanwhile, Cui et al (2007) state that culture has a role to play in the aspect of personalization of digital devices. For instance, they assert that phone users from countries like Japan, Korea and China often customize their phones using stickers and straps whereas, those from USA and Europe do not engage in phone personalization but prefer to leave their phones as they were purchased, though they might sometimes use phone covers as a means of protection rather than for personalization purposes.

Cui et al (2007) go on to give various reasons why people sometimes engage in personalization of their gadgets. They state that people often personalize their gadgets for *'emotional expression, ego- involvement, identity expression, and territory marking.'* They also assert that often times, personalization efforts are designed to have an effect on others rather than the phone user.

From all that has been discussed in this chapter, space personalization is obviously a very important human behavior which has a great number of benefits, both physical and psychological.

The following chapter will look at digital communication gadgets and the effect they are having on human beings and the society in general.

Chapter 5

THE EMERGENCE OF A NEW CULTURE: "DIGITAL COMMUNICATION TECHNOLOGY"

The emergence of digital communication gadgets into human society has made and is still making huge impacts on human life. The focus of this study is to have a better understanding of how these gadgets are affecting human relationship with spatial environments. İn order to effectively delve in to this topic however, it is important to consider how these gadgets are affecting human life in general. The essence of this chapter is to give a brief discussion on digital communication gadgets (mobile devices and computers), and the effect these gadgets are having on the lives of young people and on society in general.

Humans have always been known for their ability to invent different types of gadgets and machines which enable them function more effectively in their day to day activities. The most recent technologies which have revolutionized communication on a global scale are digital communication gadgets in the form of mobile devices and computers. They have emerged as a strong unifying global culture which according to the World Youth Report (2003), defy and exceed much of what is known of socialization in the traditional sense. Their unifying force is such that they have resulted in a new universal identity; thus the term *'media culture'*.

Among the many inventions which have occurred over the past 30 years, digital gadgets, particularly mobile phones seem to have made the greatest impact on human life going beyond being more than just prestigious symbols to technologies which simplify human life in different ways (URL 10). The importance of these gadgets can be attested to by the rate at which their use is increasing on a daily basis. Statistics show that the growth rate of mobile phone usage far exceeds the growth in world population. For instance, the *Groupe Speciale Mobile Association* (GSMA) state that the number of mobile phone cards use reached 6 billion just a month after the world's population reached 7 billion in October 2011 (URL 10).

Computers are essentially electronic devices which control information or data and which are able to store, retrieve, and process information (URL 20). Computers have simplified human activities astronomically because they allow people to perform a wide range of functions such as typing documents, playing games, surfing the internet, connecting people and buying and selling. Mobile devices are also types of computers which are designed to be portable and easily held (URL 21). They are available in different forms and varieties and some, such as tablets, e-readers**,** and smartphones can perform the same types of activities which laptops and desktop computers are designed to perform.

Church et al (2010) assert that new media technologies have been so inserted into the daily existence of humans that they have become an intricate part of people's existence today. Their embeddedness in human life is such that many people are now dependent on them for virtually everything; from online schooling and job interviews to online payments and transactions; from obtaining all sorts of news and information to meeting new people from across the world; the list is endless.

5.1 Digital Communications Gadgets Usage: Worldwide Statistics

The widespread effect of media culture today is felt across different societies regardless of cultural, economic and educational backgrounds. The invasion of these gadgets, particularly cell phones, into society today is universally attested to. For instance, statistics indicate that as of 2016, an estimated 62% of the world's population owned a cell phone. Meanwhile, predications indicate that this number is expected to reach 69% by 2019 (URL 22). Wang (2013) while quoting a U.N. study says that the number of people having access to mobile phones was higher than the number of people in the world who had access to toilets. This statement is a clear attestation to how much these gadgets have penetrated society today. (See figure 20).

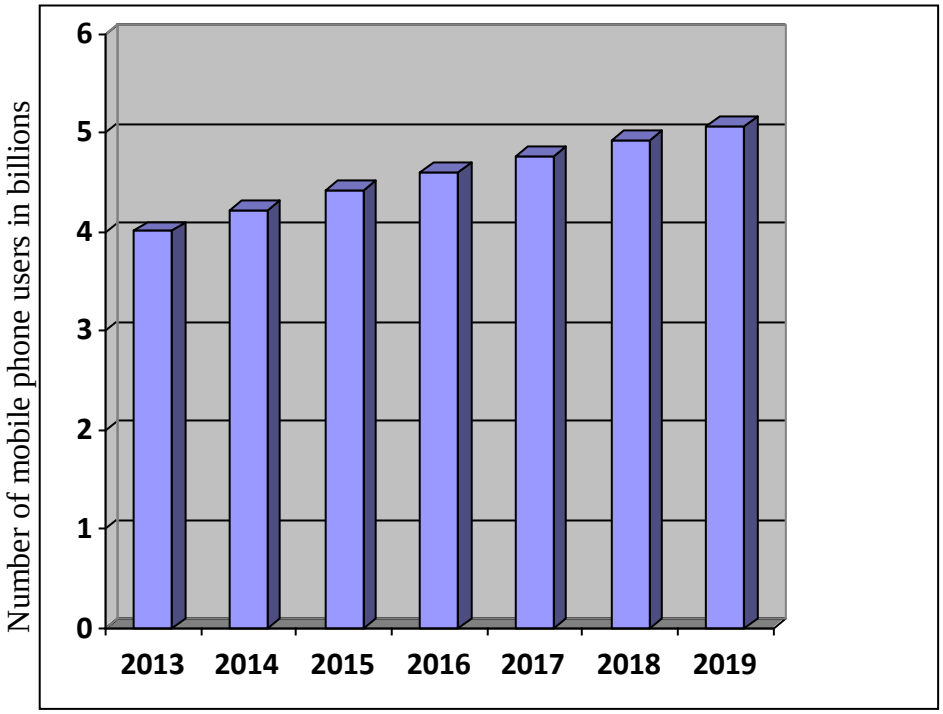


Figure 20: A chart which shows current and projected number of phone users from 2013 to 2019 (in billions) (URL 14)

Despite the widespread increase in use of cell phones and computers however, evidence shows that access to these gadgets is not uniform across the world. Pew

Research Centre (PRC) reveals that more people worldwide have access to phones than computers and that advanced counties such as America and Russia have greater access to working home computers than developing countries such as Nigeria and Uganda (URL 11). (See figure 21 for excerpts of worldwide statistics of adults who have working computers in their homes).

The rate at which mobile phones are being accessed in many developing countries is quite astounding. Internet and Mobile Association of India (IAMAI) asserts that early 2012 witnessed 120 million people accessing the internet weekly in India. This number, though a minute part of the Indian population (8.2%), is almost double the total population of the UK (URL 10).

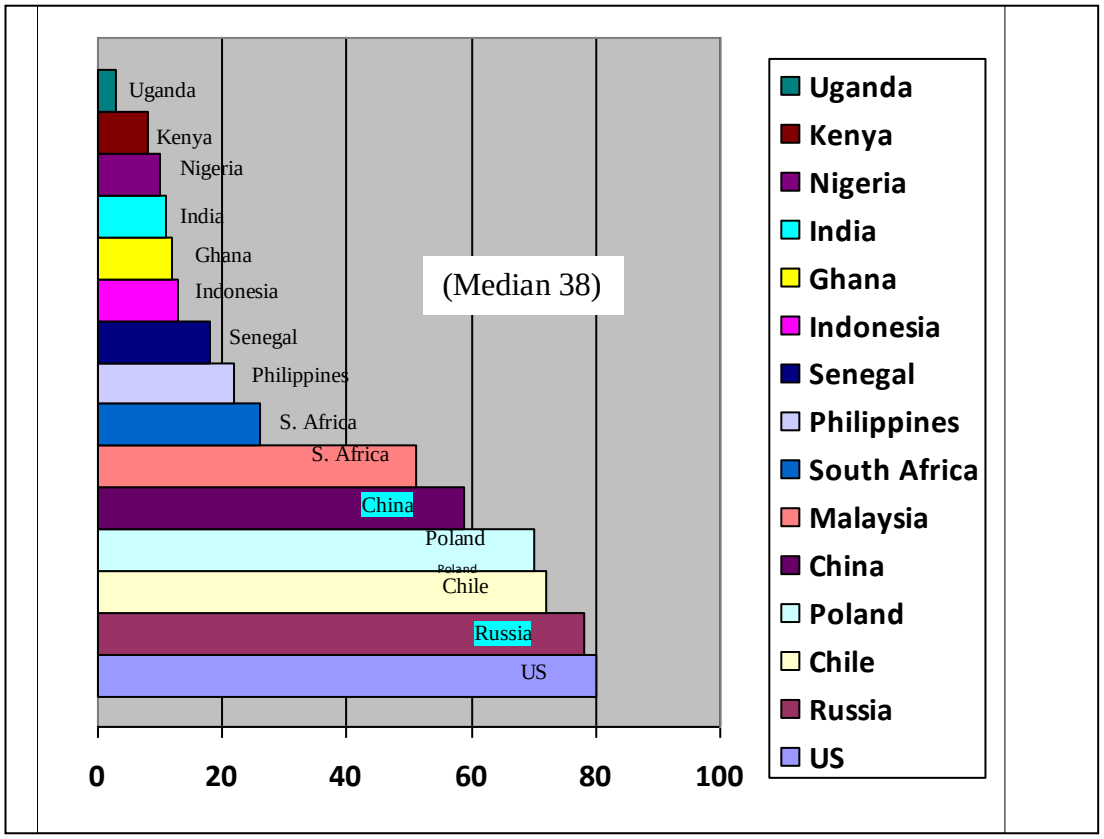


Figure 21: Percentage of people with working home computers by country (Pew Research Centre, 2014, - URL 11)

A wide disparity exists when it comes to internet access across different countries of the world. Developing countries, particularly those within South-Asia and Sub-Saharan Africa are recorded to have the lowest rates of internet access (URL 11). Some factors such as age, levels of education, income and ability to speak the English language also affect people's ability to access the internet (Table 6). For instance, young people and those with higher levels of education are more likely to access the internet than their aged or un-educated counterparts (URL 11).

The increasing availability of smartphones also makes the internet more accessible to a larger group of people who would otherwise not have had access to the internet. Data from StatCounter reveals that web visits from mobile devices now exceeds those from other computing platforms (Heisler, 2016).

Table 6: Adults who access the internet at least occasionally or own a smartphone (Pew Research Centre - URL 11)

		By Age			***By Education***			***By English Language Ability***		
Country	**Total %**	**18-34 %**	**35+ %**	**Diff %**	**Sec. or more %**	**Less than Sec. %**	**Diff. %**	**Speak or Read English %**	**Cannot Speak or Read English %**	**Diff. %**
Chile	**76**	98	62	**+36**	87	18	**+69**	96	64	**+32**
Russia	**73**	95	61	**+34**	-	-	-	92	63	**+29**
Poland	**63**	95	51	**+44**	77	22	**+55**	96	43	**+53**
China	**63**	87	45	**+42**	88	42	**+46**	91	53	**+38**
Malaysia	**55**	81	35	**+46**	72	19	**+53**	73	20	**+53**
S. Africa	**41**	51	31	**+20**	64	19	**+45**	-	-	-
Philipp.	**42**	64	23	**+41**	67	33	**+34**	-	-	-
Senegal	**28**	37	18	**+19**	74	17	**+57**	65	12	**+53**
Indonesia	**24**	41	10	**+31**	43	11	**+32**	48	13	**+35**
Ghana	**21**	30	11	**+19**	32	5	**+27**	30	3	**+27**
India	**20**	30	12	**+18**	34	9	**+25**	35	8	**+27**
Nigeria	**39**	51	23	**+28**	51	10	**+41**	48	6	**+42**
Kenya	**29**	35	22	**+13**	51	12	**+39**	36	3	**+33**
Uganda	**15**	20	8	**+12**	57	9	**+48**	23	2	**+21**

5.2 The Impact of the Digital Media on Everyday Life

The increasing use of new media technology has various implications in human life. Many people have become addicted to cell phone use and find it difficult to live without them. For instance, it is estimated that 40% of the American population is addicted to their phones while 58% of men and 47% of women are said to suffer from nomophobia, i.e. the fear of being without a smartphone (URL 15). These addictions, just like addictions to drugs or other harmful substances, have their side effects.

Figure 22: Digital life in Beijing's subway depicting reduced social interactions between people (URL 24)

One such effect is reduced social interaction. Church et al (2010) contend that interactions between people now seem to be determined by these devices. There appears to be a gradual waning away of the traditional mode of societal inter-relationships where face-to-face communication was the norm. Now with digital media, communication need no longer be face-to-face. One can converse with both strangers and friends alike without ever seeing them physically or even being in the same location with them. A lot of phone addicts have lost touch with reality and have

reduced interactions with others. Their phones have become their life such that they forget what the real world is like (URL 23).

This phenomenon is primarily due to the fact that the culture of everyday life is now inextricably intertwined with the internet. Friendships are now made and maintained online or through text messaging, sometimes to the detriment of real friendships. Even family relationships are being broken down because young people would rather spend time either surfing the web or interacting with friends through various social media outlets than sitting to have meaningful conversations with their parents. Likewise parents who are addicted to their phones give less attention to their children which can lead to unruly behavior in the children (URL 23).

Figure 23: Digital gadgets are impeding on family interactions (URL 25)

5.3 The Impact of the Digital Media on Human- Spatial Relationships

Cuff (2003) makes an interesting distinction between new emergent digital technologies and technological developments of the past. He states: *"this new technology can be both everywhere and nowhere - unlike the automobile that is*

mobile but locatable." This statement infers that the effective functionality of these technologies is not restricted by place or space. Belonging to a place now no longer refers to just a 'physical place' but also to a communications network. The home environment can now be 'anywhere' for a phone user. This is because one no longer needs to be in a specific place to receive a phone call, unlike fixed lines where calls must be received at fixed locations no matter who is being called (Srivastava, 2005).

The advent of mobile phones is now creating a less identifiable distinction between public and private spheres of life such that public places and private lives are now becoming entwined. Colpani (2010) argues that by integrating these new technologies into public and private living spaces, our perceptions of these spaces and those within the spaces are being altered. In this regard, Colpani is of the opinion that digital media have the potential to change our perception of reality. Colpani also asserts that these various technological developments have the power to alter the 'cognitive and pre-cognitive processes of the human mind'. They alter human interactions between space and the body thereby modifying people's perceptions of their bodies and self-images (Colpani, 2010).

Geser (2002) meanwhile notes that "public places are commonly colonized by the private lives of mobile individuals". Sadie Plant considers this intertwinement of the public and private as "simultaneity of place" wherein she states that a *'conversational interaction'* is created between a physical space and a virtual space (Plant, 2000). Thus a person may be physically present in a space yet be mentally in a different 'virtual environment' as a result of interactions with the phone.

The effect of digital media on today's society is such that it is even affecting people's relationships with their environment and those within their immediate surroundings. There seems to be an increasing lack of awareness of the physical environment by phone users. This can be witnessed daily on streets where crowds of people are seen engrossed in reading or chatting on their smartphones so much so that they become totally unaware of what is happening in the environment around them. Some when asked to recount what they observed from one point of a walk to another cannot do so because their attention was totally taken by their cell phones.

Some disturbing trends which have been on the increase as a result of distraction by mobile devices are the growing incidents of reported accidents. Statistics given by *Injury Facts* reveal that 11,100 injuries attributable to such distractions were recorded between 2000 and 2011 (URL 18). Edgar Synder & Associates, a personal injury law firm which represents injured people, also recount that nearly 330,000 injuries occur each year as a consequence of texting while driving and that 21% of teen drivers involved in fatal accidents were distracted by their cell phones. Meanwhile, a study of the effect of mobile phone use on pedestrian safety, which was conducted by Schwebel *et al* (2012) reveals that pedestrians are at higher risk of danger as a result of being distracted by handheld multimedia devices. They also observed that undistracted pedestrians paid more attention to their environments while crossing the street than those distracted by cell phones. These statistics serve to buttress the fact that human-environmental perceptions are indeed being affected by the use of digital mobile gadgets.

5.4 Culture and Use of Digital Gadgets

Culture is an important aspect of human life which affects different human behaviors including the use of digital gadgets. A typical example of how culture is affecting use of mobile gadgets is seen by the various recognized names with which different cultural groups identify mobile phones. Some of these identified names are: mobile phones -UK, cell phones - US, cellular - Latin America, keitai (portable) – Japan, Shou-ji (hand machine) – China, pelephone (wonder phone) – Israel, handset - Nigeria (Canton, 2012).

Cultural values also have a determining role in the way phones are used in public. Canton (2012) states that public use of mobile phones in Japan is discouraged because Japanese culture is generally a collective culture where people's needs are placed above individual needs. Japanese people therefore rarely answer phones in public places such as commuter trains, buses, restaurants, cafes or theatres for fear of disturbing or irritating others. For them, texting, mobile emails or gaming are more preferred than making public calls.

Cultures such as those of Spain and Italy, on the other hand, do not shy away from public use of phones. They easily discuss private issues in public places or even during important events such as business meetings, conferences or concerts. They also readily engage in under table texting or instant messaging while meetings are in progress (Canton, 2012).

African cultures also have a similar tendency of public use of phones. In Nigeria, for instance, answering phones in public places is a common and accepted event. People indiscriminately answer calls in markets and in commercial vehicles or at public

gatherings such as weddings. It is not uncommon to see people even lowering their voices to make calls in business meeting or conferences. Only few places, such as churches or mosques, are seen as places where calls should not be made or answered.

Meanwhile, parts of India and Africa have a culture of short calls called 'flashing or beeping' where an individual makes a quick call to somebody then quickly cuts off before the person answers so that the person will call back and thus incur the charges (Canton, 2012). This is a common occurrence all over Nigeria. Many people do it when they don't have sufficient credits in their phones to make calls.

5.5 Use of Digital Communication Gadgets in Dormitories

Use of digital communication gadgets is increasingly becoming part and parcel of many student residential facilities today. Living in a high tech computer age means modern dormitories are now making the best technological facilities available for students so they can achieve their goals as students on campus. Use of digital communication technology in dormitory rooms offers opportunities for students to do their research in their rooms at all hours of the day and night. It also affords students a way of relaxing and decompressing their minds after many hours of studying for exams and quizzes or after submission of tough assignments, or even to just stay awake and keep in touch with family and friends.

Considering the widespread effect digital communication gadgets are having on human life, this study then becomes relevant in order to determine whether there is any relationship between the way young people's use these gadgets and the way they relate with their spatial environments. The answer to this will seek to be addressed in

the following chapter. This will be done by a careful evaluation of the data obtained through surveys, interviews and observations.

Chapter 6

CASE STUDY: THE EFFECT OF DIGITAL GADGETS ON THE USE OF SPACE BY NIGERIAN STUDENTS IN EMU DORMITORIES

This thesis examines the effect of digital communication gadgets on young people's relationships with interior spatial environments. In order to address this all important topic, relevant data collected from a selected case study was utilized. This data has been evaluated and analyzed leading to a logical conclusion. This chapter contains detailed information regarding the selected case study and the methods employed to obtain relevant data. Also included in the chapter are the methods of analysis, evaluation of results and final discussions.

6.1 Method

As has been stated from the beginning of this research, the aim of this study is to consider the effect digital communication gadgets are having on young people's relationships with their interior environments. Considering that the focus of the research is predominantly on young people, this study sought to obtain data by seeking the views of university students. Eastern Mediterranean University, North Cyprus (Doğu Akdeniz Üniversitesi), is a well-renowned university in North Cyprus which has a wide range of international students. It thus provided a fertile ground for such a research because of the large community of young people that it hosts.

The chosen case study is students of Eastern Mediterranean University who reside in dormitories within the main campus. Among the over eight privately owned and five school owed dormitories situated within EMU main campus, three private dormitories were selected as the field cases. The dormitories used for this research are: Alfam, Akdeniz and Uğursal. These three dormitories were selected because they accommodate a substantial number of Nigerian student population within which random sampling would provide the required number of participants needed for the study. They also share some common similarities: (1.) they are all private dormitories, (2.) the rooms are approximately the same size and (3.) they all accommodate both males and females in single occupancy and double occupancy settings. For the purposes of this study however, only students living in double occupancy rooms were considered for data collection.

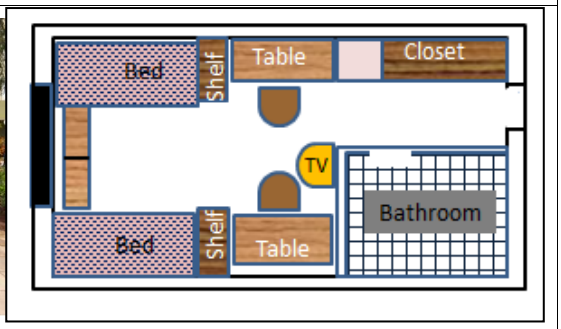
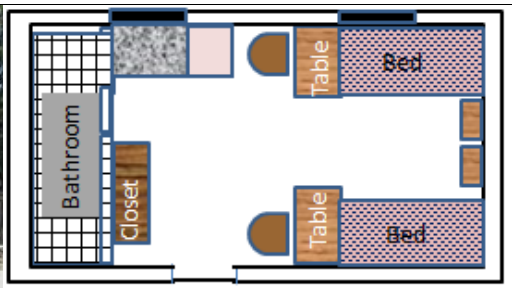
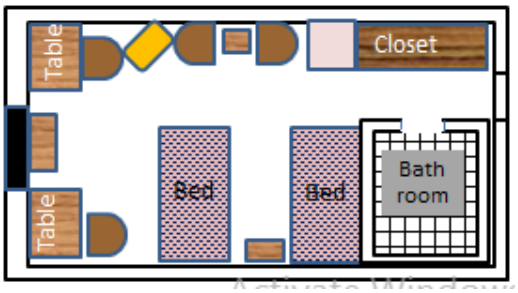
Each of these dormitories offer well furnished rooms with desks, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerators, air-conditioners, TV satellite and telephones. Some of the furniture such as the desks, beds, chairs, bookshelves and bed-side tables are moveable and can be re-positioned. Others such as the air-conditioners, overhead shelves and television sets are attached to the walls and cannot be moved about. Wardrobes and refrigerators, though not permanently fixed, cannot be readily moved about due to room configuration and location of electric output points.

Dormitories on EMU campus are examples of modern dormitories which make the provision of internet services in dormitory spaces a necessary part of their room facilities. A tour of various dormitories on EMU campus reveals availability of internet cables in all the dormitories where students are able to connect to the internet

for assignments or other personal activities. Meanwhile, EMU owned dormitories have also made wireless services available to the students in their rooms as a way of catering to their research needs.

The dimensions of the rooms are as follows: Akdeniz - 24m^2, Alfam -24m^2 and Uğursal - 25m^2. The exterior views and room plans of the various dormitories are shown in Table (7).

Table 7: Plans and exterior views of dormitories

Exterior View	**Room Plan**
	
Akdeniz Dormitory	Room Size: 24m^2
	
Alfam Dormitory	Room Plan: 24m^2
	
Uğursal Dormitory	Room Size: 25m^2

6.1.1 Population of Study and Sample size

This study is primarily focused on young people and the possible effect their digital communication gadgets are having on their relationships with their spatial environments. Students of EMU who reside in dormitories were used because they form a broad range of young people who use digital technology on a daily basis. For the purpose of this research, focus was on Nigerian students for a number of reasons: 1.) They constitute a considerable part of the student population in EMU. 2.) A related study titled *Space personalization in students' living environment: case of Eastern Mediterranean University dormitories, North Cyprus,* was previously done on space personalization of students' living environment by Ayinde (2016) in which the main focus was Nigerian students in EMU dormitories. Her thesis revealed that students studying far from their home countries personalize their space as a means of self-expression which is important for adaptation to their new environment. Her study also showed that personalization activities of Nigerian students in dormitories is generally weak due to the fact that many were afraid of investing money in buying items for personalizing their rooms which they would eventually leave when going back to their home country. This thesis differs from that of Ayinde by exploring the effect of digital communication gadgets on personalization of space as well as on privacy and personal space.

To select the sample from the population of study, random sampling was employed. This is a procedure where each member of the population of study has an equal chance of being selected as a sample. This is as a result of the universal characteristics shared by the study population. In this instance, the research participants are from the same place, fall within the same age bracket, have a common cultural background and are presently living in the same environment.

Preliminary findings indicate that there are a substantial number of Nigerian students residing in the three dormitories earlier mentioned, about 300 hundred in all. Therefore, for every ten (10) students, this study considers one participant respondent. For this reason, a total number of 30 students participated in the survey. Arguably, the response categories generated, will conveniently represent the aggregate opinion of Nigerian students in EMU. The participants were however picked randomly from each dormitory according to availability of willing participants. This led to an unequal number of participants from each dormitory amounting to 16 from Uğursal, 10 from Akdeniz and 4 from Alfam.

6.1.2 Method of Data Collection

Three instruments were used for the data collection. These are: (1) questionnaires (2) interviews and (3) observations by the researcher.

Questionnaires

Questionnaires were chosen as a means of data collection because they have been effectively used to obtain demographic data and to sample opinions of respondents in similar research works (e.g. Rowley, 2011). The questionnaires used in this study comprise 18 questions in all (see Appendix A). The first part contains demographic information about the participants such as age, gender, level of study and length of stay in dormitories. Subsequent questions address participants' feelings about their spaces and about personalization. Other questions are centered on their use of digital communication gadgets in their rooms. Eight of the questions are measured on a 5-point Likert scale with answers ranging from strongly agree (1) to strongly disagree (5). The remaining questions offer options where the respondents are required to tick the ones most appropriate. A total of 30 questionnaires were completed and analyzed in the study.

Several of these questions used in the questionnaire were adopted from Rowley's research. '*Exploring The Relationship Between Place Identity And Personalization Of Space In Temporary Student Housing'* (Rowley 2011). The questions are: (1) *I feel comfortable while I am in my room (Likert scale), (2) I feel like I have privacy while I am in my room (Likert scale), (3) how many hours daily do you spend in your room while awake? (Likert scale), (4) Where in your room do you study? (5) What about your room makes you feel comfortable (or uncomfortable?), (6) what do you think could be done to your room to make you feel more comfortable?*

Interview Questions

Interviews were adopted because results from past research (e.g. Bahmani, 2013 & Noorian, 2009) suggest that they are a good means of getting participants to openly discuss their feelings thus supplying detailed information which they might otherwise not do in the questionnaires. Audio recording of the interviews was also done to ensure an accurate account of the interview proceedings. These recordings were later transcribed by the researcher and used to generate a rich descriptive evaluation.

Thirty participants were interviewed and the main purpose of the interviews was to obtain more in-depth information from the participants about their perceptions of their interior spaces, how they use their phones and computers and how these gadgets are affecting them. The questions were also designed to understand the effect the digital devices gadgets are having on personalization of their spaces and their demands for privacy (See Appendix B).

Observational Study

Observation as a data collection instrument gave an added impetus to understand some hints on how participants make efforts to personalize space and to further

understand the relationship between the participants, their spaces and their digital gadgets. These facts were noted by the researcher and recorded on charts. The charts were adopted and modified from Bahmani (2013) and Ayinde (2016) (See Appendix C & D).

The observation targeted a number of specific information which are: (1) Space personalization acts depicted with material symbols, objects or actions e.g. pictures, artwork, paintings, trophies, certificates, rugs, beddings, electronics, books, shoe racks, clothes, evidence of furniture re-arrangement, levels of neatness and cleanliness of the spaces, etc. (2) Position of computers in relation to spatial configuration, (3) Evidence of privacy levels and personal space in relation to position of computers.

For the purpose of this study sixteen rooms were observed and evaluated, eight from the female dormitories and eight from the male dormitories. These rooms are occupied by the participants of this study. With the permission of the participants, photos were snapped of their living spaces. These reinforced the data obtained from the interviews and observations.

The actual data collection took place over a period of two weeks within the month of May, 2017. Permission to conduct surveys and interviews with dormitory residents was first obtained from each of the three dormitory management staff after which participants were approached in their dormitories and requested to participate as willing volunteers in the data collection process. A letter of introduction which explained the exercise was given to each participant along with a voluntary consent form which they were required to sign if they agreed to participate (See Appendix E).

6.1.3 Data Analysis

Several methods were used to analyze the data. Firstly, descriptive analysis using SPSS was used to interpret the data obtained from the questionnaires. The results are represented with tables and charts. Secondly, a qualitative descriptive evaluation was carried out based on the answers obtained from the interviews, questionnaires and personal observations. These formed the basis for the subsequent discussions.

6.2 Results, Evaluations and Analysis

6.2.1 Demographic Data

The sample comprises 30 Nigerian students of Eastern Mediterranean University (EMU) who are currently living in double occupancy accommodations in dormitories within EMU campus. Demographic data from the questionnaires contains the following information: age, gender, level of study and length of time spent living in the dormitory. The results are presented as follows: Out of 30 participants, 15 are males and 15 are females. The ages of the participants show that 23.3% of the participants are less than 20 years of age, 70% are between 20-25 years of age and only 6.7% are between 26-30 years of age. The participants are made up of 28 undergraduate and 2 graduate students. Length of stay in the dormitories reveals that: 11 participants have stayed less than a year, 4 have stayed up to a year, 7 have stayed for 2 years, 2 have stayed for 3 years and 6 have spent over 3 years in the dormitory. The three dormitories and the number of participants in each are as follows: 10 of the participants are from Akdeniz, 4 are from Alfam and 16 are from Uğursal (See table 8).

Table 8: Demographic data

Description		Frequency	Percentage	Total
Gender	Male	15	50%	30 (100%)
	Female	15	50%	
Age	Less than 20	7	23.3%	30 (100%)
	20-25	21	70%	
	26-30	2	6.7%	
Level of Study	Undergraduate	28	93.3%	30(100%)
	Graduate	2	6.7%	
Length of stay in dormitory	Less than a year	11	36.7%	30(100%)
	1 Year	4	13.3%	
	2 Years	7	23.3%	
	3 Years	2	6.7%	
	Above 3 years	6	20%	
Dormitories and Number of residents	Akdeniz	10	33.3%	30(100%)
	Alfam	4	13.3%	
	Uğursal	16	53.3%	

6.2.2 Survey/Interview Results

The primary focus of the survey, interviews and observations is to obtain answers which would address the research questions earlier raised. In order to effectively do this however, it first becomes necessary to answer the following sub- questions.

What is the relationship of participants with their digital communication gadgets?

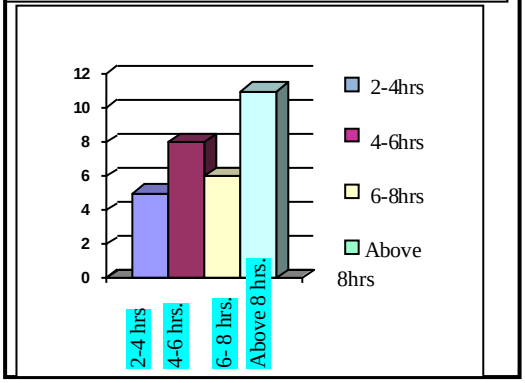
Being that the use of digital gadgets by young people is central in this research, there is a need to understand the relationship young people have with their digital gadgets. The participants were thus asked a number of questions concerning the amount of time they give to their devices and the effect these devices are having on their daily activities as well as on their social relationships. Such questions are: *1.) How many hours do you spend in your room daily while awake? 2.) What do you do most within these hours? 3.) How many hours do you spend daily on your phone/computer in your room? 4.) What if you didn't have your phone or computer for a day or two,*

would it bother you? 5.) Does the use of your digital gadgets affect social relations with your friends?

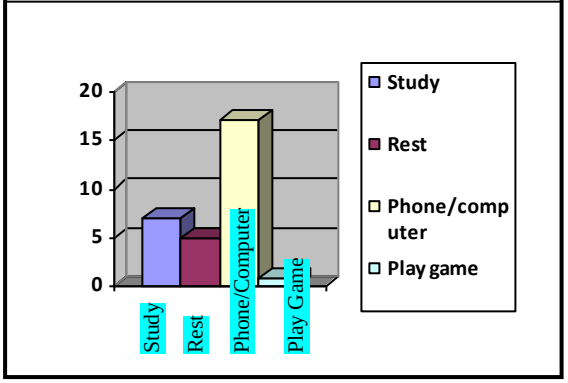
Responses from the questionnaires indicate that the average time spent by the participants in their rooms daily while awake is between six to eight hours (See table 9). Results also revealed that the most frequent activity for the participants while indoors is use of phones and computers. For instance fifty-six point seven percent (56.7%) of the participants revealed that they spend most of their time indoors engaged on their phones and computers (See Table 9).

Table 9: Hours awake indoors and most common indoor activity

Number of hours awake		
	Freq	**Percentage**
2-4hrs	5	16.7%
4-6hrs	8	26.7%
6-8hrs	6	23.3%
Above 8 hrs.	11	36.7%
TOTAL	**30**	**100%**



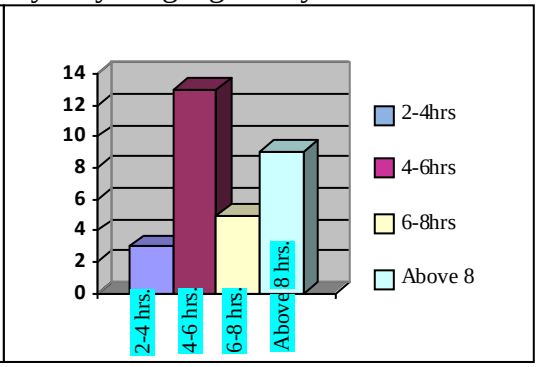
Use of time indoors		
	Freq.	**Percentage**
Study	7	26.7%
Rest	5	16.7%
Use Phone/Computer	17	56.7%
Play Game	1	3.3%
TOTAL	**30**	**100%**



When asked how many hours they spend daily on their digital gadgets while in their rooms, the answers revealed that the average time spent by participants on their digital gadgets is between 4-6hrs daily (See table 10).

Table 10: How many hours do you spend daily on your gadgets in your room?

Number of Hours	Freq.	Percentage
2-4hrs	3	10%
4-6hrs	13	43.3%
6-8hrs	5	16.7%
Above 8hrs	9	30%
TOTAL	**30**	**100%**



Considering that young people spend two thirds of their indoor time on their gadgets is a clear indication of the level of importance of these gadgets to the youth. The respondents were thus asked how they would feel if they didn't have their gadgets for a day or two. About thirty percent (30%) of the respondents stated that it would not bother them much because they feel they would be able to adjust to the situation. Seventy percent (70%) of the respondents however readily admitted that they would be very bothered because they conduct a lot of activities on their phones.

A few of the participants' sentiments about how they would feel if they have to go one or two days without their digital gadgets are captured below:

> It will not just bother me, it would get me depressed. If I don't have them I'd feel like I'm living in my grandfather's time. When I'm doing something else, most of the time my phone is in my pocket. They really define me, these two things (Participant 20).

> I would feel my life is miserable. I would feel my life is over. I'm so much attached to my phone. I think I can't just do without a device (Participant 29).

While the participants readily agreed that their communication gadgets were profoundly important to them, sixty percent (60%) admitted that they do not affect social relations with their friends while forty percent (40%) agreed that they do. On whether digital gadgets affect their day to day activities, the participants who argued

that their gadgets do not affect their daily activities (56.7%) are slightly more than those who agree that their activities are being affected by their gadgets (43.3%) (See table 11). For instance participant 2 agrees that her phone often affects her daily activities and states:

> My phone sometimes affects my daily activities. I may want to do something but then get caught up doing something else on my phone, then I remember the time is going. It happens sometimes (Participant 2).

Participant 29 however argues that her gadgets do not affect how she conducts her daily activities. She states:

> I don't think so. It does not. If I'm using my phone, I use it when I'm free. I don't use my phone when I'm not free. But if I'm in my room and not studying and not doing anything, I'll use my phone (Participant 29).

Table 11: Effect of digital gadgets on social relationships and daily activities

	Social life		**Daily Activities**	
	Frequency	Percentage	Frequency	Percentage
Affects	12	40%	13	43.3%
Doesn't Affect	18	60%	17	56.7%
TOTAL	30	100%	30	100%

Though the focus of this study is the effect of digital gadgets on young people's relationships with their interior spaces, the researcher sought more insight on the importance of these gadgets to young people by attempting to understand whether they have any effect on young people's relationships with their external spaces as well. The participants were thus asked the following questions. *1.) Do you use your phone while walking/riding on the bus? 2). If yes, why? 3.) Does the use of your pone distract your attention while walking? 4.) Have you ever had any type of accident while using your phone?*

The responses were quite interesting and shed further light on the level of attachment that exists between young people and their digital gadgets. For instance, 93% of the participants agreed that they are always with their gadgets and use them often while walking or riding on the bus. The most common reason they gave for doing this is that it keeps them from feeling bored and that it shortens their journey, especially when they are walking alone. Forty percent of the respondents, particularly those who agreed that they use their phones on the bus, stated that they often do it to avoid eye contact with other people or to avoid unwanted interactions. This view is captured by Participant (1) who stated that she often engages with her phone when she doesn't want to talk to others on the bus. This statement seems to corroborate Nakura's (2015) assertion that phone users who focus their attention on their phone may actually be sending non-verbal messages that they don't want to be disturbed.

On whether the use of their phones distracts their attention when they are walking, 43% of the participants agreed that it does distract them but 57% argued that it doesn't. However when asked whether they have been involved in accidents as a result of being distracted by their phones, 68% admitted that they have, the most common of which is bumping into objects or people or tripping and almost falling. This then corroborates the findings by Schwebel et al (2012) that pedestrians who are distracted by their cell phones often pay less attention to their environments.

What are the perceptions of participants towards their interior living environments?

Having gained an understanding of the importance of digital communication gadgets to the participants, it becomes necessary to understand the participants' perception and feelings towards their interior spaces in terms of levels of privacy, personal space and factors which make them feel comfortable or uncomfortable in their spaces

so as to determine whether digital gadgets have any effect on these perceptions. For this, participants were asked several questions on the questionnaires and during the interviews. The questions went as follows: *1.) I have sufficient personal space in my dormitory room, 2.) I am comfortable with the spatial arrangement of my space, 3.) How would you rate the privacy in your room?*

The responses reveal that the participants generally have positive feelings about their living spaces. All the questions carry a higher positive response rate compared to the lower response rate. For instance, when asked about the level of privacy in their rooms, 10% of the respondents rated it as very high while 40% saw it as high; 36.7% placed it at medium range. Those who rated it as low and very low were 3.3% and 10% respectively. Questions about how they perceived the sufficiency of their personal spaces also carried a similar positive rating with 20% at strongly agree and 56.7% at agree. At the lower spectrum were 13.3% who disagreed and 3.3% who strongly disagreed. When asked about their level of comfort with the room's spatial arrangement, the responses were: 6.7% strongly agreed, 63.3% agreed, 10% disgreed and only 3.3% strongly disgree. The responses generated from the surveys are illustrated in tables 12 & 13 and also in figure 24.

Table 12: How would you rate the privacy in your room?

	Freq.	Percent.
Very High	3	10%
High	12	40%
Medium	11	36.7%
Low	1	3.3%
Very Low	3	10%
TOTAL	30	100%

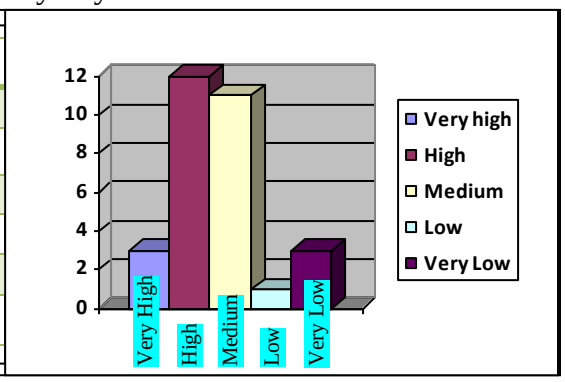


Table 13: Participants perceptions of their living spaces

Question Asked	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	Freq.	*Percent.*	Freq.	*Percent*	Freq.	*Percent.*	Freq.	*Percent*	Freq.	*Percent*
I have sufficient personal space in my dormitory room.	6	*20*	17	*56.7*	2	*6.7*	4	*13.3*	1	*3.3*
I am comfortable with the spatial arrangement of my space.	2	*6.7*	20	*66.7*	4	*13.3*	3	*10*	1	*3.3*
SUMMARY OF RESPONSES	**8** ***(13.4%)***		**37** ***(61.7%)***		**6** ***(10%)***		**7** ***(11.6%)***		**2** ***(3.3%)***	

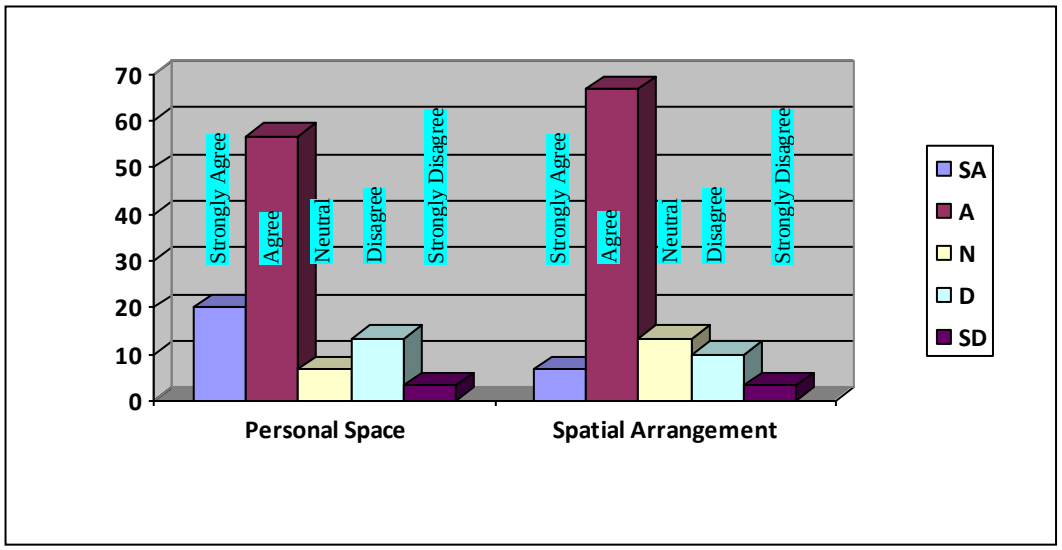


Figure 24: Participants' Perceptions of Their Living Spaces

The following interview questions further corroborate the views of participants about their living spaces. *1.) Do you enjoy spending time in your room? 2.) What about your room makes you feel comfortable/uncomfortable? 3.) If you feel uncomfortable, what do you think could be done to make it more comfortable?*

The responses again prove the high positive perception rate that respondents have towards their living spaces. Ninety-three percent (93%) of them stated that they enjoy spending time in their rooms and the reasons given for this ranged from: because of the peaceful, quiet and relaxing environment, adequate furniture, high rate of privacy, availability of all they need as students and presence of their phones, computers and internet (See Figure 25).

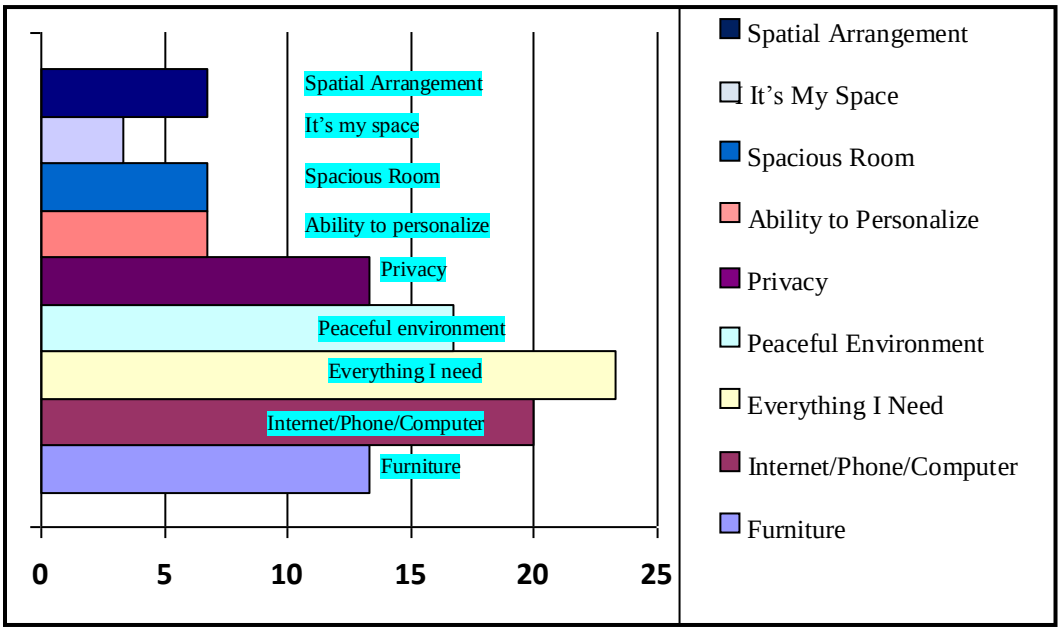


Figure 25: Reasons why participants find their ındoor spatial environments comfortable

As for factors which make the participants uncomfortable, 50% of the participants stated that nothing makes them uncomfortable in their spaces. The other 50% identified a number of issues which ranged from dis-satisfaction with position of air-conditioners to limited electricity tariffs, noise levels and unwanted visitors in their spaces. Among the most outstanding complaint mentioned by 6.6% of the participants is lack of locks on the doors which hinders them from keeping out unwanted visitors. Other significant complaints mentioned by 3.3% of the participants respectively are insufficient room space, limited ability to decorate their

spaces and lack of wireless networks service which hinders them from changing the position of their laptops thereby restricting them from studying in the most convenient position possible.

What are the participants' demand rates for privacy and personal space in their rooms?

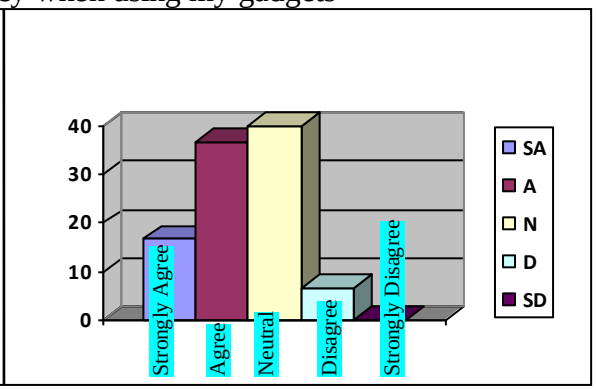
Privacy and personal space are important aspects of human social life, absence of which can often result in negative reactions such as anger, aggression and social withdrawal. People need privacy at different moments in time. This research question sets to examine whether individuals who live in shared spaces have greater needs for privacy and personal space while working on their computers.

Participants were first asked where they do most of their computer work. Their responses indicate that both beds and tables are used by the participants almost equally: 43.3% do most of their computer work on their beds while 46.7% indicated that they preferred to work on their tables. Only 10% stated that they used both equally. Meanwhile to understand whether the use of digital gadgets has any effect on their demands for privacy and personal space, they were asked the following questions: *Is privacy important to you when using your phone or computer? Do you feel you have enough privacy to work on your computer in your room? Does people's presence ın your room affect how you use your phone computer? Do you feel that the physical layout of your room enables you to work productively on your computer? If you have the opportunity, how would you re-arrange the room to have more privacy?*

Their responses indicate that privacy is important to them when using their gadgets. For instance, 16.7% answered strongly agree to desire for privacy, 36.7% answered agree, 40% were neutral while only 6.7% answered disagree (Table 14).

Table 14: I desire to have privacy when using my gadgets

	Freq.	Percent.
SA	5	16.7
A	11	36.7
N	12	40
D	2	6.7
SD	0	0
TOTAL	**30**	**100**



When questioned about levels of privacy and the physical layout of their rooms while using their gadgets, their responses about their rooms were quite positive: 80% are of the opinion that the physical layout of their rooms enables them to wok productively on their computers with 26.7% answering strongly agree and 53.3% answering agree, 6.7% disagree and 0% strongly disagree. Similarly 83.3% believe that they have enough privacy in their rooms to work on their gadgets with 20% answering strongly agree, 63.3% agree, 0% disagree and 3.3% strongly disagree (Table 15& Figure 26).

Table 15: Physical layout and levels of privacy when using gadgets

Question Asked	**Strongly Agree**		**Agree**		**Neutral**		**Disagree**		**Strongly Disagree**	
	Freq.	*Percent*	Freq.	*Percent*	Freq.	*Percent*	Freq.	*Percent*	Freq.	*Percent*
Physical layout enables me to work	8	*26.7*	16	*53.3*	4	*13.3*	2	*6.7*	0	*0*

productively										
I have enough privacy while using my gadgets	6	*20*	19	*63.3*	4	*13.3*	0	*0*	*1*	*3.3*
SUMMARY OF RESPONSES	**14** ***23.4%)***		**35** ***(58.3%)***		**8** ***(13.3%)***		**2** ***(3.4%)***		**1** *(1.6)*	

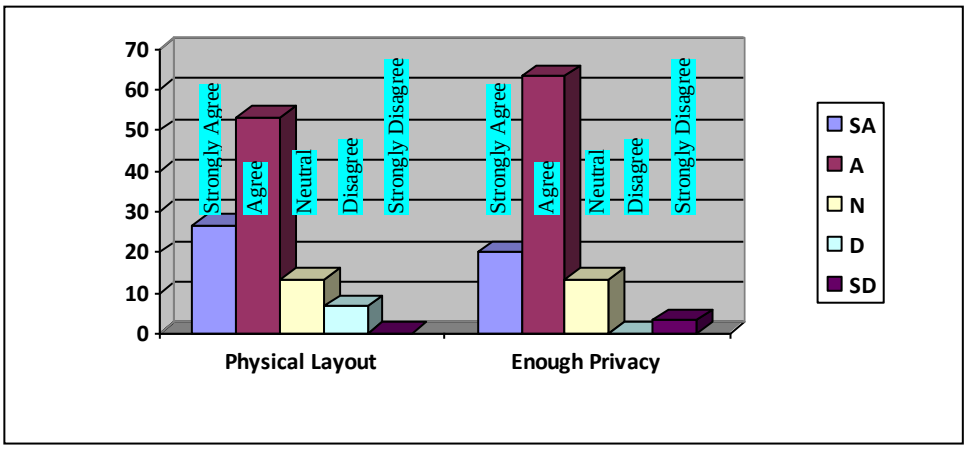


Figure 26: Physical layout and levels of privacy when using gadgets

The results clearly show that over 80% of the participants feel privacy levels in their rooms are sufficient for any work they need to do on their computers and therefore they wouldn't do anything to their spaces to ensure more privacy. They also emphasized that people's presence in the room does not affect them while working on their gadgets. The five percent who indicated that they did not have enough privacy when using their gadgets were then asked what they could do to ensure more privacy when working. Almost all of them responded that they would not re-arrange their furniture but would rather post-pone their work and wait for occupants to leave before continuing. Only one participant was observed to have re-oriented his table so that he could have more privacy around his reading area. When asked whether the way he had organized his desk gave him the privacy he needed, his response was:

> Yeah, to an extent it does. Not as much as I would desire but at least it gives me some level of privacy to do sensitive stuff on my computer.

What are the participant's views about space personalization?

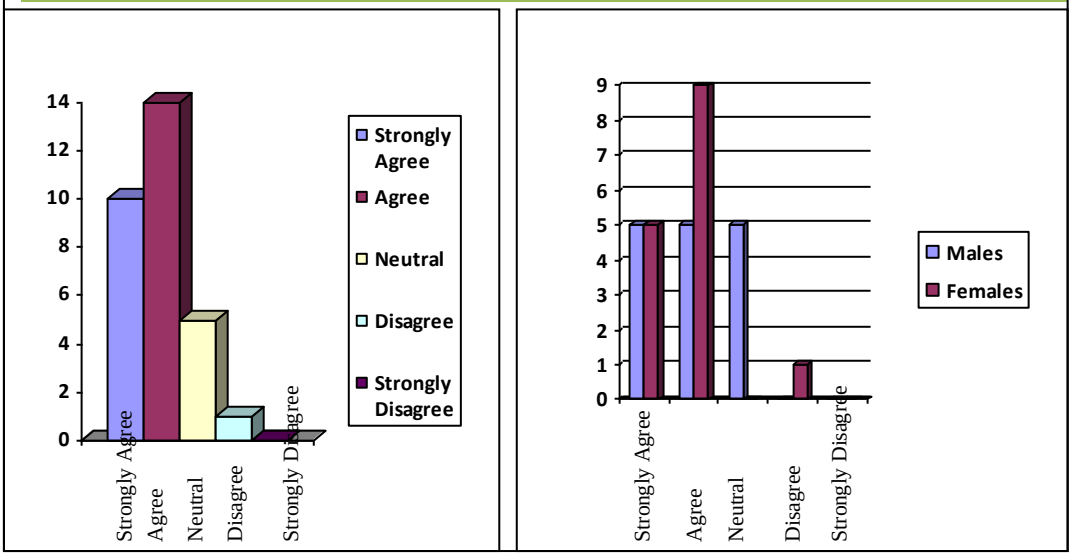
Personalization of space is an important behavior practiced by humans in interior spaces. People often do it as a way of reflecting themselves in their spaces and they do this through purposeful ornamentation, decoration, modification or rearrangement of an environment (Noorian, 2009). Personalization also serves as a means which people use to adapt to their environment (Kron, 1983).

In order to examine whether digital communication gadgets are affecting how young people personalize their spaces, the researcher first sought to assess the feelings of the participants about space personalization. This was done by asking them questions related to space personalization of their dormitory spaces as well as that of their spaces back home. The questions are: *1.) I am able to personalize my space as I wish. 2.) Putting up personal items around my living space is important to me. 3.) Putting up personal items around my living space is important to me because... 4.) Have you done anything to your room to personalize it to make it fit your style more? 5.) At home, do you personalize your space? 6.) If yes, where do you personalize more, here or at home? Why? 7.) Why do you give more (less) time to space personalization here?*

The responses from the surveys indicate as many as 80% of the participants declaring their interest in space personalization with results showing 33.3% strongly agree and 46.7% agree. The results also show that females have more interest in space personalization than their male counterparts where males answered 66.6% strongly agree and agree to personalization and females answered 93.3% strongly agree and agree (Table 16).

Table 16: Degree of importance of space personalization to participants

	Males		Females		Both	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Strongly Agree	5	33.3%	5	33.3%	10	33.3%
Agree	5	33.3%	9	60%	14	46.7%
Neutral	5	33.4%	0	0%	5	16.7%
Disagree	0	0%	1	6.7%	1	3.3%
Strongly Disagree	0	0%	0	0%	0	0%
TOTAL	15%	100%	15%	100%	30	100%



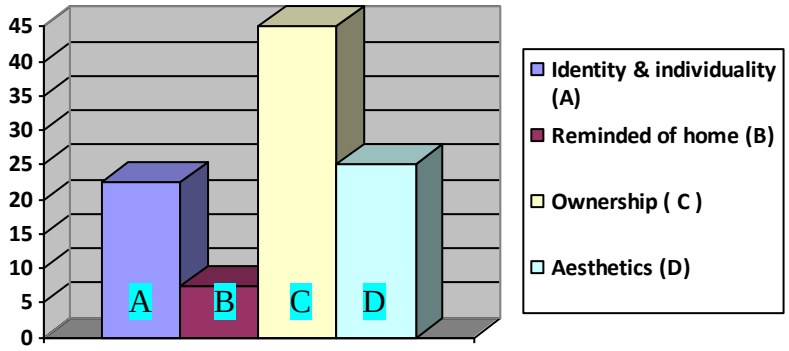
Various reasons were given by the participants as to why personalization is important to them. The responses are: I am able to express my identity and individuality (22.5%), I am reminded of home (7.5%), I show ownership of my space (45%) and for aesthetics (25%). Based on the responses, it is obvious that '*to show ownership of my space*' is the predominant reason why space personalization is important to participants, while '*I am reminded of home'* is the least important reason (Table 17).

Further data on why space personalization is important to participants based on gender was thereafter collected. The results likewise indicate that '*to show ownership of my space*' is the most important reason why space personalization is important to

both genders (44% - males; 64.5% - females). The least important reason however varies for the two genders where '*for aesthetics'* is the least important for the females (6%) and '*I am reminded of home'* is the least important for the males (6%) (See Table 17 & Figure 27).

Table 17: Reasons why putting up personal items around living space is important

	Males		Females		Both	
	Freq.	Percent.	Freq.	Percent.	Freq.	Percent.
I am able to express my identity and ndividuality (A)	6	37.5%	3	17.5%	9	27.5%
I am reminded of home (B)	1	6%	2	12%	3	9%
I show ownership of my space (C)	7	44%	11	64.5%	18	54.5%
For aesthetics (D)	2	12.5%	1	6%	3	9%



Reasons why putting up personal items around living space is important to participants

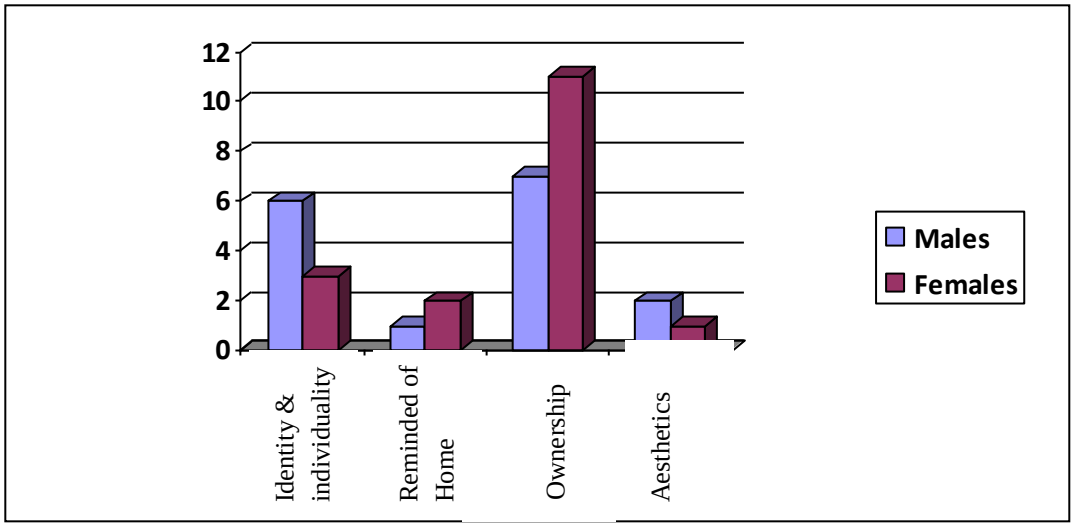


Figure 27: Reasons Why Personalization is Important to Participants According to Gender

6.2.3 Observation Results

Further personal observations by the researcher were required in order to ascertain the true level of interest of participants in space personalization and to access the relationship of participants to their interior spaces. This was done by a careful observation of the participants' living spaces by the researcher. Sixteen dormitory rooms which are occupied by the various participants were observed. Specific information was noted down as follows: (1) Participants' levels of interest and degree of personalization identified with: (i.) decorative items, e.g. posters, artwork, paintings, (ii.) identity-oriented items, e.g. certificates, sports posters, family pictures, (iii.) cultural objects such as craftwork or artwork which depict Nigerian culture (iv.) personal items, e.g. shoe racks, beddings, body care products, rugs, clothes, sound systems, (v.) other random items of interest such as plants, wall notifications, calendars, (vi.) Levels of neatness and cleanliness of the environment, (vii.) furniture re-arrangement. (2) Levels of room privacy and personal space, (3) Participants' use of digital gadgets and the relationship of the gadgets with room

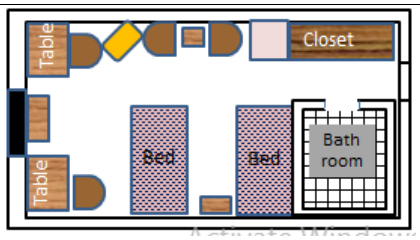
space and spatial arrangement. The charts and evaluation results of each of the sixteen rooms observed are presented in the following pages.

Table 18**:** Observation chart 1A

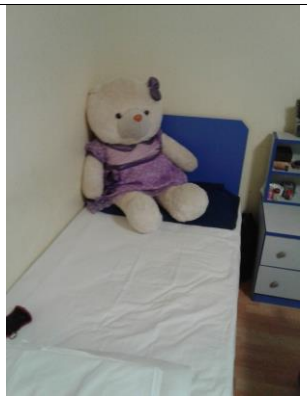
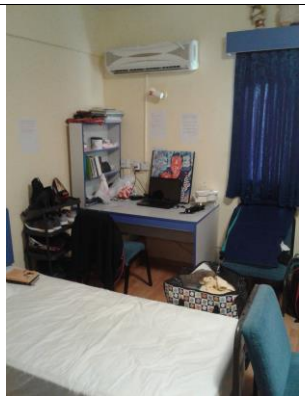
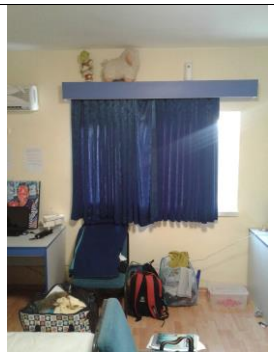
Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Uğursal **Room No.** 2308 **No. of Occupants:** 2 **Gender:** Female		
Theme	**Indicators**	**Options**		
Personalization Assessment	Involvement in Personalization of Room	Strong		
		Average		*
		Weak		
	Rearrangement of Furniture	New Arrangement Done		
		No Re-arrangement Done		*
	Items Used for Personalization	Pictures, Notifications, Beddings, Books, Shoe rack/ Clothes		
	Degree of mess and disorder	Clean and tidy		*
		Dirty and messy		
		Clean but disorderly		
Privacy Assessment	Place of Computer Use	Bed		
		Desk		*
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*

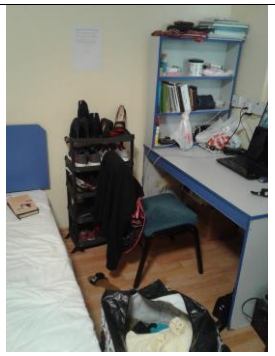
Table 19: Observation/evaluation chart 1B

Dormitory & Room Number: Uğursal 2308	**Room Plan Layout**
Gender of Occupants: Female	
Number of Occupants: 2	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	



Room Photos



View of Occupants: The occupants expressed interest in space personalization and indicated their desire to engage in more if there were no restrictions. Privacy levels and personal space are perceived by the occupants as sufficient. Spatial arrangement does not hinder occupants from doing private work on their computer systems.

EVALUATIONS:

Space Personalization: Significant effort has been made at personalization which includes display of items such as**:** body-care products, books, pictures, notifications on the walls, painting, clothes, shoe rack and stuffed toys. No room re-arrangement has been done and shoe racks are the only additional furnishings. Room is clean and tidy.

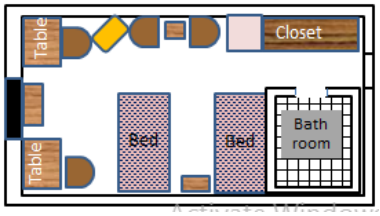
Relationship of Digital Gadgets With Spatial Arrangement: Any computer work requiring internet connection must be done on the reading tables due to lack of wi-fi connections' hence there is reduced flexibility when using computers. There is no visual privacy around beds and tables. There is limited privacy while using computers as screens are open to the room. Individual personal space for occupants is greatest around the reading tables and beds. Possibilities exist for

spatial re-arrangement of beds, however fixed internet wire cords around table area means tables can be re-oriented but not moved from present position.

Table 20**:** Observation chart 2A

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Uğursal **Room No.** 1306 **No. of Occupants:** 2 **Gender:** Female		
Theme	**Indicators**	**Options**		
Personalization Assessment	Involvement in Personalization of Room	Strong		
		Average		
		Weak		*
	Rearrangement of Furniture	New Arrangement Done		
		No Re-arrangement Done		*
	Items Used for Personalization	Pictures, Blanket, Books, Clothes		
	Degree of mess and disorder	Clean and tidy		
		Dirty and messy		
		Clean but disorderly		*
Privacy Assessment	Place of Computer Use	Bed		
		Desk		
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*

Table 21: Observation/evaluation chart 2B

Dormitory & Room Number: Uğursal 1306	**Room Plan Layout**
Gender of Occupants: Female	
Number of Occupants: 2	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	

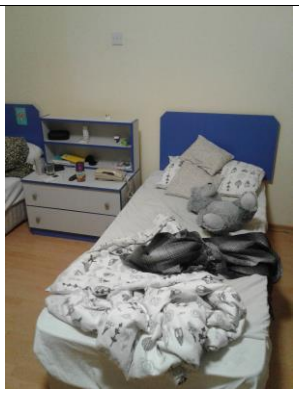
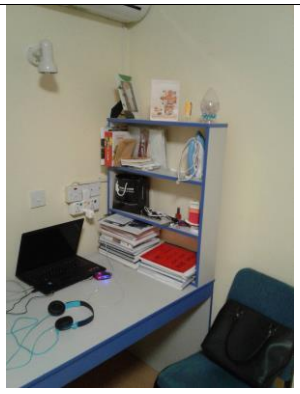
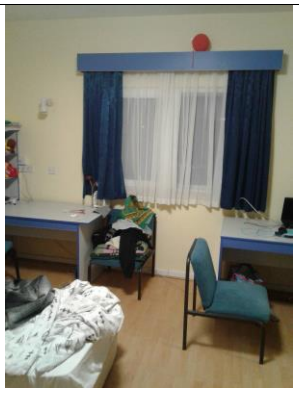
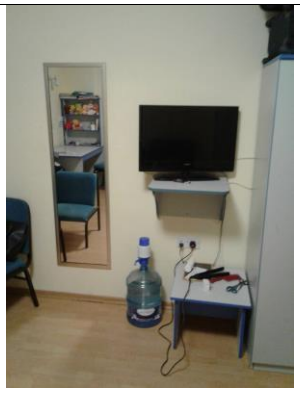
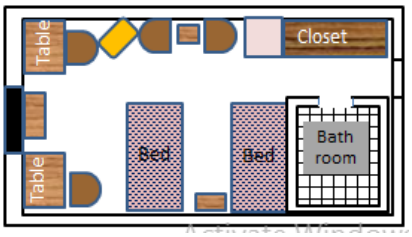
Room Photos		
		
		
View of Occupants: The occupants expressed minimal desire for space personalization. Privacy levels and personal space is perceived by the occupants as sufficient. Spatial arrangement does not hinder occupants from doing private work on their computer systems.		
EVALUATIONS: **Space Personalization:** Minimal effort has been made at personalization which includes display of items such as**:** books, picture, a card, clothes, and stuffed toys. No room re-arrangement has been done and there are no additional furnishings added. Walls are bare. Room is clean but untidy. **Relationship of Digital Gadgets With Spatial Arrangement:** Computers are restricted to tables due to lack of wi-fi connections. There is no visual privacy around beds and tables. There is no privacy while using computers as screens are open to the room. Individual personal space for occupants is greatest around the reading tables and beds. Possibilities exist for spatial re-arrangement of beds, however fixed internet wire cords around table area means tables can be re-oriented but not moved from present position.		

Table 22**:** Observation chart 3A

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Uğursal **Room No.** 1314 **No. of Occupants:** 2 **Gender:** Female		
Theme	**Indicators**	**Options**		
Personalization Assessment	Involvement in Personalization of Room	Strong		
		Average		
		Weak		*
	Rearrangement of Furniture	New Arrangement Done		
		No Re-arrangement Done		*
	Items Used for Personalization	Pictures, Blanket, Books, Clothes, Shoe Rack		
	Degree of mess and disorder	Clean and tidy		
		Dirty and messy		
		Clean but disorderly		*
Privacy Assessment	Place of Computer Use	Bed		
		Desk		*
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*

Table 23: Observation/evaluation chart 3B

Dormitory & Room Number: Uğursal 1314	**Room Plan Layout**
Gender of Occupants: Female	
Number of Occupants: 2	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	
Room Photos	

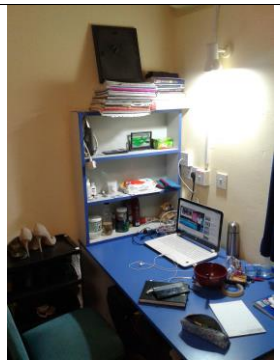
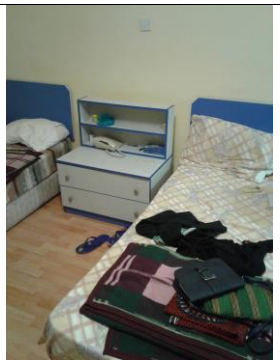
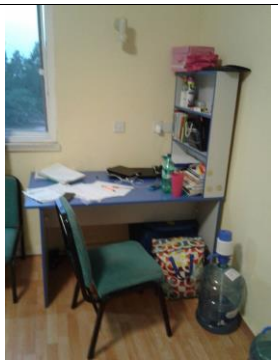
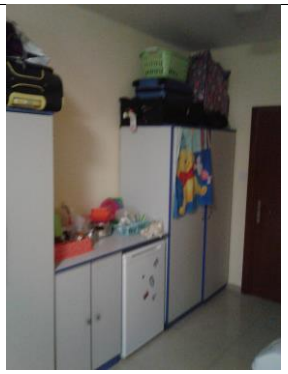
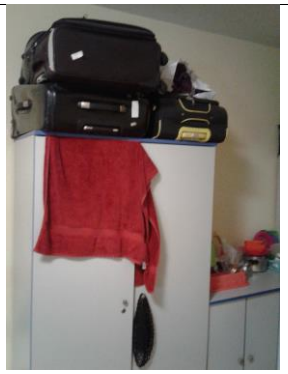
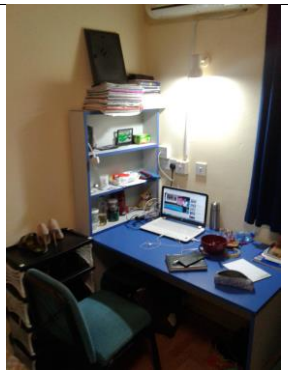
		
		
View of Occupants: The occupants expressed no desire for space personalization. Privacy levels and personal space is perceived by the occupants as sufficient. Spatial arrangement does not hinder occupants from doing private work on their computer systems.		
EVALUATIONS: **Space Personalization:** Minimal effort has been made at personalization which includes display of items such as**:** body-care products, books, pictures, clothes, shoe rack and stuffed toys. No room re-arrangement has been done and shoe racks are the only additional furnishings. **Relationship of Digital Gadgets With Spatial Arrangement:** Computers are restricted to tables due to lack of wifi connections. There is no visual privacy around beds and tables. There is no privacy while using computers as screens are open to the room. Individual personal space for occupants is greatest around the reading tables and beds. Possibilities exist for spatial re-arrangement of beds, however fixed internet wire cords around table area means tables can be re-oriented but not moved from present position.		

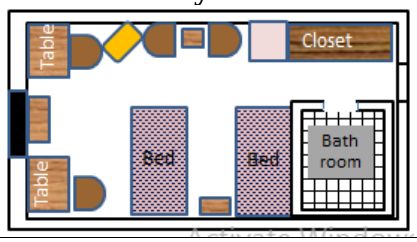
Table 24**:** Observation chart 4A

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Uğursal **Room No.** 1212 **No. of Occupants:** 2 **Gender:** Male	
Theme	**Indicators**	**Options**	
Personalization Assessment	Involvement in Personalization of Room	Strong	
		Average	

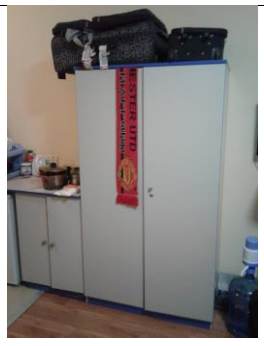
		Weak		*
	Rearrangement of Furniture	New Arrangement Done		
		No Re-arrangement Done		*
	Items Used for Personalization	Books, Clothes, Sports Banner		
	Degree of mess and disorder	Clean and tidy		
		Dirty and messy		
		Clean but disorderly		*
Privacy Assessment	Place of Computer Use	Bed		
		Desk		
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*

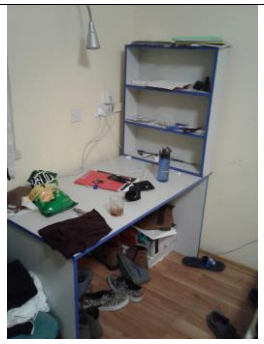
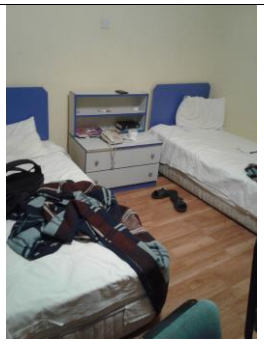
Table 25: Observation/evaluation chart 4B

Dormitory & Room Number: Uğursal 1212	**Room Plan Layout**
Gender of Occupants: Male	
Number of Occupants: 2	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	



Room Photos



View of Occupants: The occupants expressed no desire for space personalization. Privacy levels and personal space are perceived by the occupants as sufficient. Spatial arrangement does not hinder occupants from doing private work on their computer systems.

EVALUATIONS:

Space Personalization: Very minimal effort has been made at personalization which includes books neatly arranged on shelf and sports banner hanging on wardrobe door. Clothes and shoes are strewn around the room. No room re-arrangement has been done and there are no additional furnishings. Walls are bare. Room is clean but untidy.

Relationship of Digital Gadgets With Spatial Arrangement: Computers are restricted to tables due to fixed internet wire connection and lack of wi-fi. . There is no visual privacy around beds and tables. Occupants have no privacy while using computers as screens are open to the room. Individual personal space for occupants is greatest around the reading tables and beds. Possibilities exist for spatial re-arrangement of beds, however fixed internet wire cords around table area means tables can be re-oriented but not moved from present position.

Table 26**:** Observation chart 5A

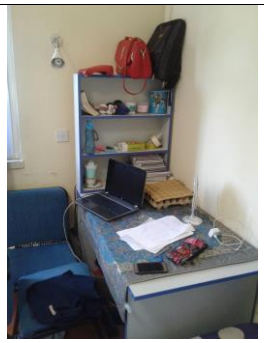
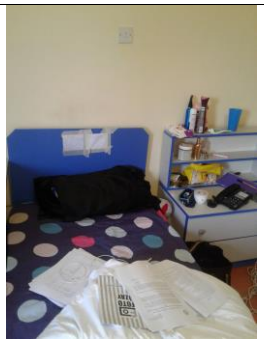
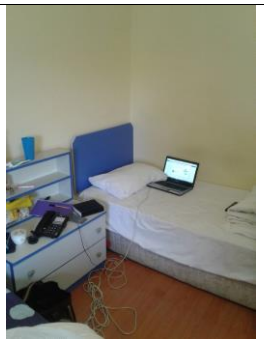
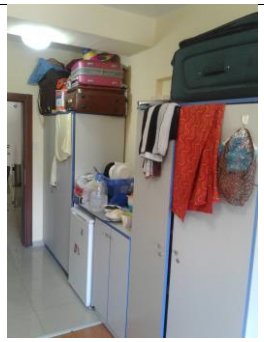
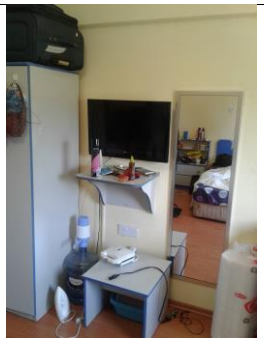
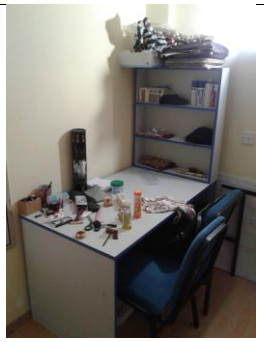
Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Uğursal **Room No.** 2303 **No. of Occupants:** 2 **Gender:** Female	
Theme	**Indicators**	**Options**	
Personalization Assessment	Involvement in Personalization of Room	Strong	
		Average	
		Weak	*
	Rearrangement of Furniture	New Arrangement Done	*
		No Re-arrangement Done	
	Items Used for Personalization	Body care products, blanket, books, Clothes, shoe rack, table cloth	
	Degree of mess and disorder	Clean and tidy	
		Dirty and messy	
		Clean but disorderly	*
Privacy Assessment	Place of Computer Use	Bed	*
		Desk	*
	Degree of visual privacy	Private	

	around main furniture	Bed	Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	*
			No privacy	
	Degree of visual privacy when using computer	Bed	Private	*
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	*
			No privacy	

Table 27: Observation/evaluation chart 5B

Dormitory & Room Number: Uğursal 2303	**Room Plan Layout**
Gender of Occupants: Female	
Number of Occupants: 2	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	

Room Photos

View of Occupants: The occupants expressed little desire for space personalization. Privacy levels and personal space are perceived by the occupants as sufficient. Spatial arrangement does not hinder occupants from doing private work on their computer systems.

EVALUATIONS:

Space Personalization: Very minimal effort has been made at personalization which includes books, body care products and clothes hanging from wardrobe door. Room re-arrangement has been done once and there are no additional furnishings in the room. Walls are bare. Room is clean but untidy.

Relationship of Digital Gadgets With Spatial Arrangement: Computers are used on both tables and bed. Additional internet wire extension provided by occupants enables computer to be used on the bed thus allowing the user more privacy on her computer. There is no visual privacy around beds. Possibilities exist for spatial re-arrangement of beds, however fixed internet wire cords around table area means tables can be re-oriented but not moved from present position. Tables have been re-oriented thus increasing privacy for computer user as the screen can be turned away from the room.

Table 28**:** Observation chart 6A

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Uğursal **Room No.** 2306 **No. of Occupants:** 2 **Gender:** Female		
Theme	**Indicators**	**Options**		
Personalization Assessment	Involvement in Personalization of Room	Strong		
		Average		*
		Weak		
	Rearrangement of Furniture	New Arrangement Done		*
		No Re-arrangement Done		
	Items Used for Personalization	Body care products, beddings, books, shoe rack, clothes, bags, travelling bags		
	Degree of mess and disorder	Clean and tidy		*
		Dirty and messy		
		Clean but disorderly		
Privacy Assessment	Place of Computer Use	Bed		
		Desk		*
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*

Table 29: Observation/evaluation chart 6B

<table>
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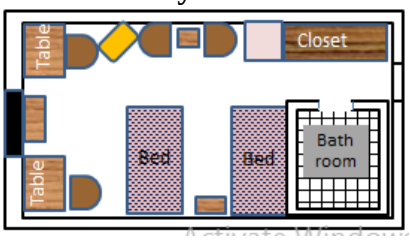
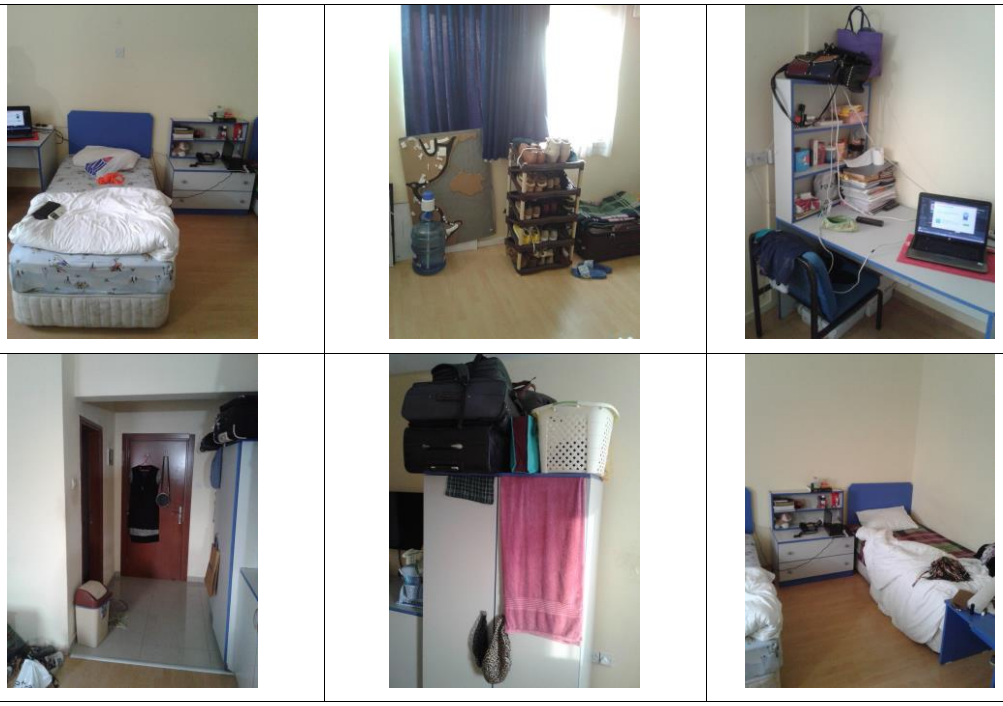
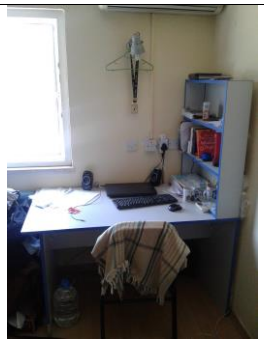
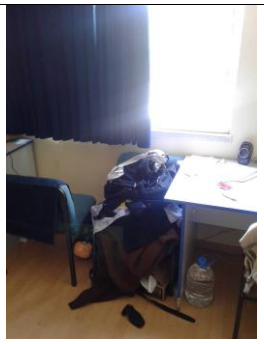
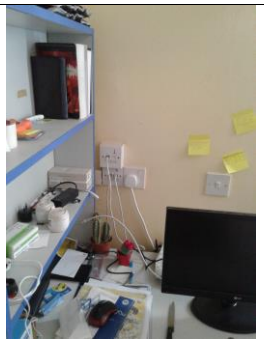
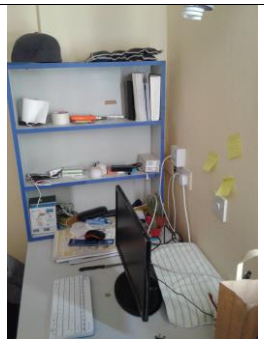
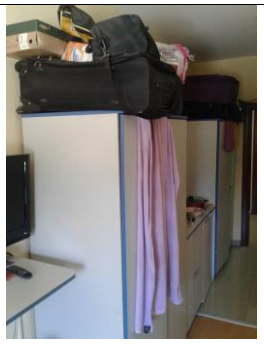
 
</td></tr>
<tr><td>Gender of Occupants: Female</td></tr>
<tr><td>Number of Occupants: 2</td></tr>
<tr><td>Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.</td></tr>
<tr><td colspan="2">Room Photos
  </td></tr>
<tr><td colspan="2">Views of Occupants: Occupant states that she has interest in space personalization and that it calms her when she is upset. Privacy levels, personal space and spatial arrangement are perceived by the occupants as satisfactory. Spatial arrangement does not hinder occupants from doing private work on their computer systems.</td></tr>
<tr><td colspan="2">EVALUATIONS:
Space Personalization: Some effort has been made at personalization which includes books, body care products, clothes hanging, towel hanging from wardrobe door shoe rack, bags, travelling bags and blanket. Room re-arrangement has been done more than once. There are no additional furnishings in the room. Walls are bare. Room is clean and tidy.
Relationship of Digital Gadgets With Spatial Arrangement: Computers are used on both tables and bed. Additional internet cord extension provided by occupants enables computer to be used on the bed thus allowing the user more privacy on her computer. There is no visual privacy around beds.. Individual personal space for occupants is greatest around the reading tables and beds. Possibilities exist for spatial re-arrangement of beds, however fixed internet wire cords around table area means tables can be re-oriented but not moved from present position.</td></tr>
</table>

Table 30**:** Observation chart 7A

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Uğursal **Room No.** 3202 **No. of Occupants:** 2 **Gender:** Male		
Theme	**Indicators**	**Options**		
Personalization Assessment	Involvement in Personalization of Room	Strong		
		Average		
		Weak		*
	Rearrangement of Furniture	New Arrangement Done		
		No Re-arrangement Done		*
	Items Used for Personalization	Notification, Blanket, Books, plants, electronics, clothes, body care products, travelling bags, neck band		
	Degree of mess and disorder	Clean and tidy		
		Dirty and messy		
		Clean but disorderly		*
Privacy Assessment	Place of Computer Use	Bed		
		Desk		*
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*

Table 31: Observation/evaluation chart 7B

Dormitory & Room Number: Uğursal 3202	**Room Plan Layout**
Gender of Occupants: Male	
Number of Occupants: 2	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	
Room Photos	

Views of Occupants: The occupants expressed great desire for space personalization and blamed dormitory regulation on minimal personalization of the room. Privacy levels, personal space and spatial arrangement are perceived by the occupant as unsatisfactory. Occupant is of the opinion that privacy levels are sufficient for any private work he needs to on his computer system.

EVALUATIONS:

Space Personalization: A little effort has been made at personalization. These include books, body care products, clothes hanging from wardrobe door, plant on the table, a blanket and notifications on the wall. Room re-arrangement has never been done. There are no additional furnishings in the room. Room is clean but untidy.

Relationship of Digital Gadgets With Spatial Arrangement: Computers are restricted to tables due to fixed internet wire connection and lack of wi-fi. . There is no visual privacy around beds and tables. Occupants have no privacy while using computers as screens are open to the room. Individual personal space for occupants is greatest around the reading tables and beds. Possibilities exist for spatial re-arrangement of beds, however fixed internet wire cords around table area means tables can be re-oriented but not moved from present position.

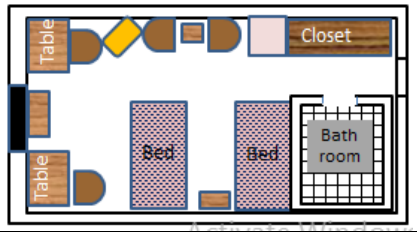
Table 32**:** Observation chart 8A

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Uğursal **Room No.** 2304 **No. of Occupants:** 2 **Gender:** Female	
Theme	**Indicators**	**Options**	
Personalization Assessment	Involvement in Personalization of Room	Strong	
		Average	
		Weak	*
	Rearrangement of Furniture	New Arrangement Done	

		No Re-arrangement Done		*
	Items Used for Personalization	Pictures, Blanket, Books, notifications, body care products, clock, toys, travelling bags		
	Degree of mess and disorder	Clean and tidy		*
		Dirty and messy		
		Clean but disorderly		
Privacy Assessment	Place of Computer Use	Bed		
		Desk		*
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*

Table 33: Observation/evaluation chart 8B

Dormitory & Room Number: Uğursal 2304	**Room Plan Layout**
Gender of Occupants: Female	
Number of Occupants: 1	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	



Room Photos

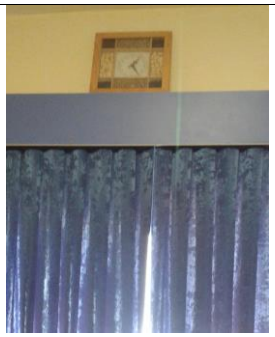
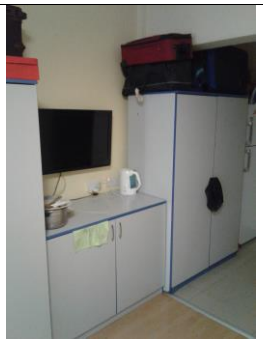
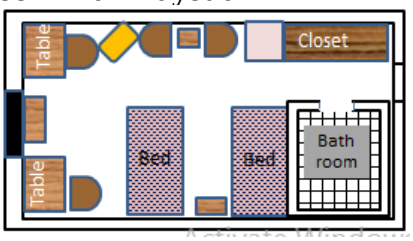
		
Views of Occupants: The occupant expressed moderate desire for space personalization. The occupant is presently the only one in the room thus she has adequate privacy levels and personal space. Spatial arrangement is perceived as satisfactory.		
EVALUATIONS: **Space Personalization:** Minimal effort has been made at personalization which includes books, body care products, blanket, picture frame, clock, travelling bags, notifications on the wall and a stuffed toy on the bed. Room re-arrangement has never been done and there are no additional furnishings in the room. Walls are bare. Room is clean and tidy. **Relationship of Digital Gadgets With Spatial Arrangement:** Computers are restricted to tables due to fixed internet wire connection and lack of wi-fi. In the event of visitors in the room, the occupant has no visual privacy around her bed and table and also no privacy while using her computers as screen is open to the room. Possibilities exist for spatial re-arrangement of beds, however fixed internet wire cords around table area means tables can be re-oriented but not moved from present position.		

Table 34**:** Observation chart 9A

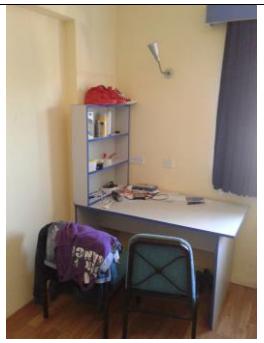
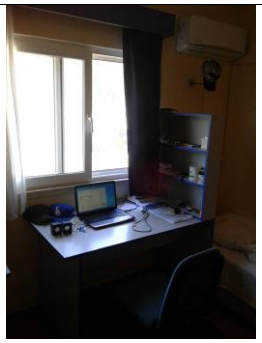
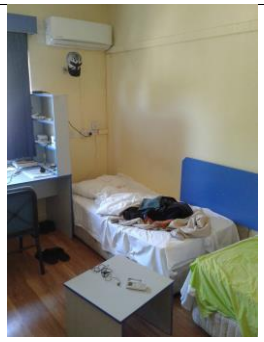
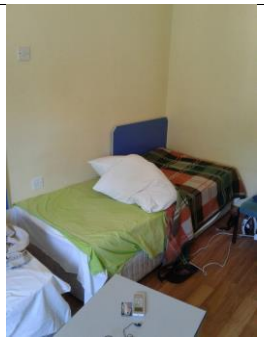
Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Uğursal **Room No.** 2203 **No. of Occupants:** 2 **Gender:** Male	
Theme	**Indicators**	**Options**	
Personalization Assessment	Involvement in Personalization of Room	Strong	
		Average	
		Weak	*
	Rearrangement of Furniture	New Arrangement Done	*
		No Re-arrangement Done	
	Items Used for Personalization	Body care products, Books, Clothes	
	Degree of mess and disorder	Clean and tidy	
		Dirty and messy	
		Clean but disorderly	*
Privacy Assessment	Place of Computer Use	Bed	
		Desk	*
	Degree of visual privacy	Private	

	around main furniture	Bed	Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*

Table 35: Observation/evaluation chart 9B

Dormitory & Room Number: Uğursal 2203	**Room Plan Layout** 
Gender of Occupants: Male	
Number of Occupants: 2	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	

Room Photos

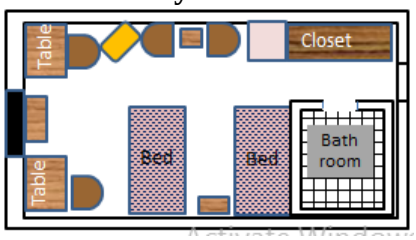

Views of Occupants: The occupants expressed little desire for space personalization. Privacy levels and personal space are perceived by the occupants as sufficient. Spatial arrangement does not hinder occupants from doing private work on their computer systems.

EVALUATIONS:
Space Personalization: Very minimal effort has been made at personalization which includes body care products and a few personal items on shelves and table, shoes on shelf and above wardrobe door and clothes on the bed. Room re-arrangement has been done more than once and there are no additional furnishings in the room. Walls are bare. Room is clean but untidy.
Relationship of Digital Gadgets With Spatial Arrangement: Computers are restricted to tables due to fixed internet wire connection and lack of wi-fi. . There is no visual privacy around beds and tables. Occupants have no privacy while using computers as screens are open to the room. Individual personal space for occupants is greatest around the reading tables and beds. Possibilities exist for spatial re-arrangement of beds, however fixed internet wire cords around table area means tables can be re-oriented but not moved from present position. Beds have been re-positioned.

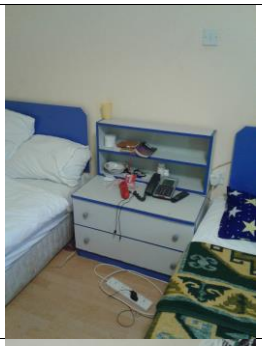
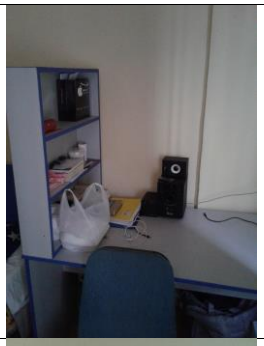
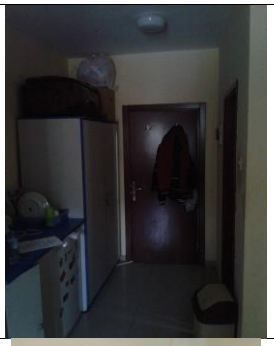
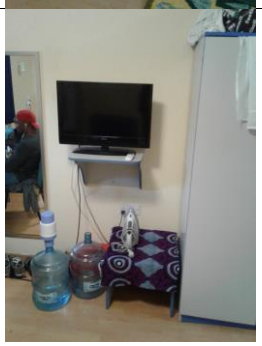
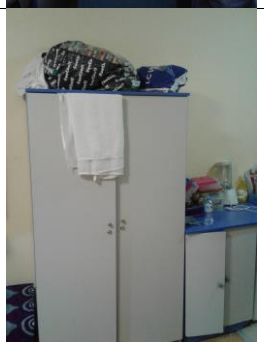
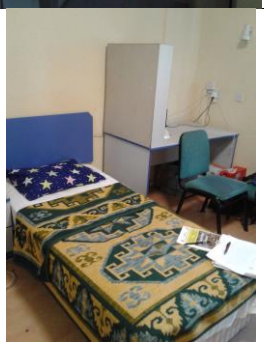
Table 36**:** Observation chart 10A

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Uğursal **Room No.** 3105 **No. of Occupants:** 2 **Gender:** Male		
Theme	**Indicators**	**Options**		
Personalization Assessment	Involvement in Personalization of Room	Strong		
		Average		
		Weak		*
	Rearrangement of Furniture	New Arrangement Done		*
		No Re-arrangement Done		
	Items Used for Personalization	Electronics, Clothes, Travelling Bags		
	Degree of mess and disorder	Clean and tidy		*
		Dirty and messy		
		Clean but disorderly		
Privacy Assessment	Place of Computer Use	Bed		*
		Desk		*
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	*
			No privacy	
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	*
			No privacy	
		Desk	Private	
			Semi-private	*
			No privacy	

Table 37: Observation/evaluation chart 10B

Dormitory & Room Number: Uğursal 3105	**Room Plan Layout** 
Gender of Occupants: Male	
Number of Occupants: 2	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	

Room Photos

Views of Occupants: The occupant expressed great interest in space personalization. Privacy levels, personal space and spatial arrangement are perceived by the occupants as unsatisfactory. Spatial arrangement does sometimes hinder occupant from doing private work on his computer systems.

EVALUATIONS:

Space Personalization: Very minimal effort has been made at personalization which includes few items on shelf and table, clothes hanging from door, travelling bags above wardrobe and sound system on the table. Room re-arrangement has been done and there are no additional furnishings in the room. Walls are bare. Room is clean and tidy. Table has been re-arranged to give the owner more privacy on his system.

Relationship of Digital Gadgets With Spatial Arrangement: Computers are restricted to tables due to fixed internet wire connection and lack of wi-fi. There is limited privacy around beds and tables. One table has been re-arranged to give the user more privacy on his system while the other table has less privacy as his computer screen is open to the room. Individual personal space for occupants is greatest around the reading tables and beds. Possibilities exist for spatial re-arrangement of beds, however fixed internet wire cords around table area means tables can be re-oriented but not moved from present position.

Table 38**:** Observation chart 11A

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Akdeniz **Room No.** 629 **No. of Occupants:** 2 **Gender:** Male		
Theme	**Indicators**	**Options**		
Personalization Assessment	Involvement in Personalization of Room	Strong		
		Average		
		Weak		*
	Rearrangement of Furniture	New Arrangement Done		
		No Re-arrangement Done		*
	Items Used for Personalization	Body care products, Books, Clothes		
	Degree of mess and disorder	Clean and tidy		*
		Dirty and messy		
		Clean but disorderly		
Privacy Assessment	Place of Computer Use	Bed		
		Desk		*
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	*
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*

Table 39**:** Observation chart 11B

Dormitory & Room Number: Akdeniz 629	**Room Plan Layout**
Number of Room Occupants: 2	
Gender of Occupants: Male	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	
Room Photos	

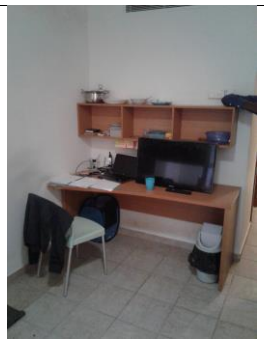
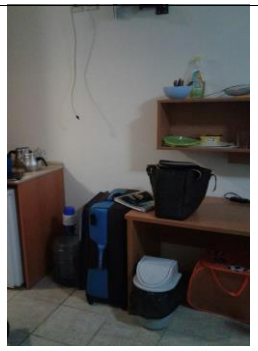
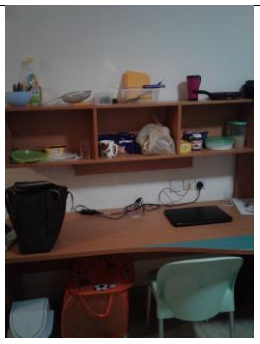
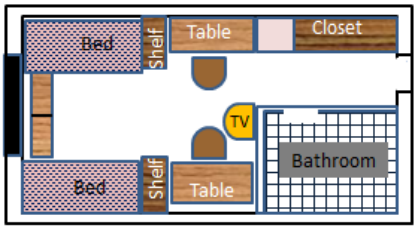
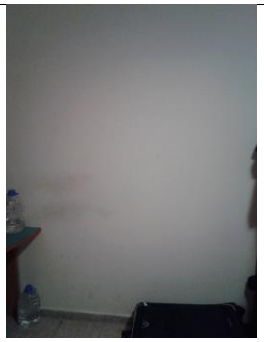
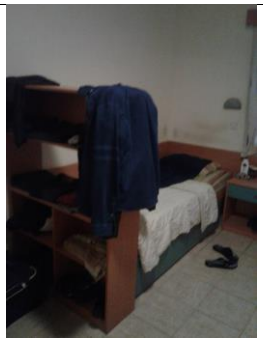
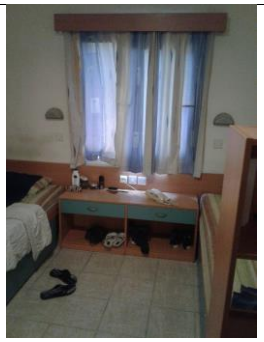
		
		
View of Occupant: The occupant expressed no interest in space personalization. Privacy levels, personal space and spatial arrangement are perceived by the occupant as moderately satisfactory. Spatial arrangement and level of privacy does not hinder occupant from doing private work on his computer systems.		
EVALUATIONS: **Space Personalization:** Very minimal effort has been made at personalization which includes few items on shelf and table, books in shelf and clothes placed on top of shelf, Room re-arrangement has never been done and there are no additional furnishings in the room. Walls are bare. Room is clean and tidy. **Relationship of Digital Gadgets With Spatial Arrangement:** Computers are used both on tables and beds due to available internet wire connection around beds and tables. There is limited visual privacy around beds and tables. Computer screens on tables are open to the room thus affording the users little privacy. More privacy exists for computer use on beds as screens can be turned away from observers. Individual personal space for occupants is greatest around the reading tables and beds. Spatial re-arrangement possibilities are limited due to in-sufficient room space.		

Table 40**:** Observation chart 12A

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Akdeniz **Room No.** 472 **No. of Occupants:** 2 **Gender:** Male	
Theme	**Indicators**	**Options**	
Personalization Assessment	Involvement in Personalization of Room	Strong	
		Average	

		Weak		*
	Rearrangement of Furniture	New Arrangement Done		
		No Re-arrangement Done		*
	Items Used for Personalization	Beddings, Clothes		
	Degree of mess and disorder	Clean and tidy		*
		Dirty and messy		
		Clean but disorderly		
Privacy Assessment	Place of Computer Use	Bed		
		Desk		*
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	*
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*

Table 41: Observation/evaluation chart 12B

Dormitory & Room Number: Akdeniz, 472	**Room Plan Layout**
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	
Room Photos	
	
	

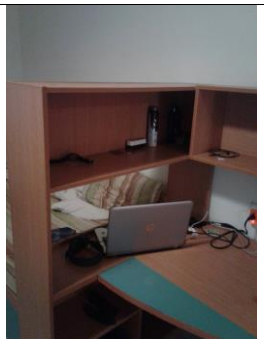
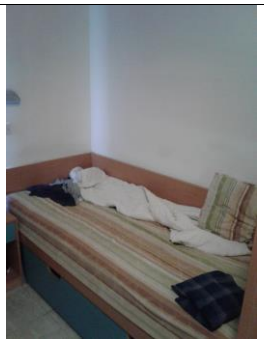
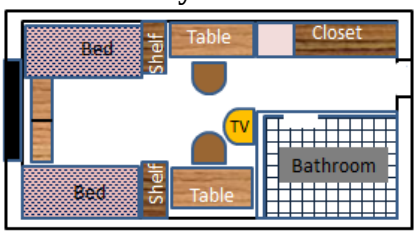
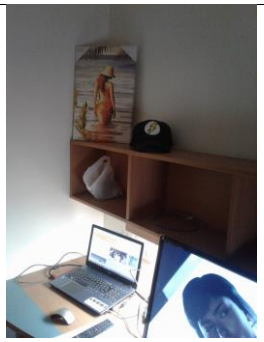
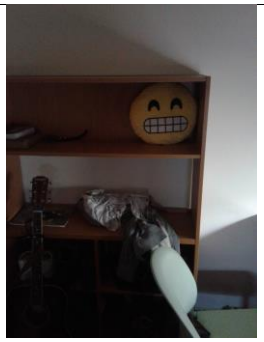
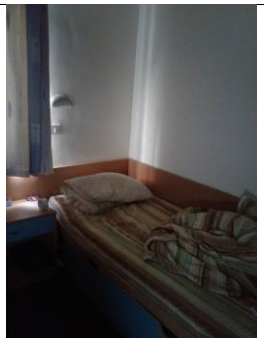
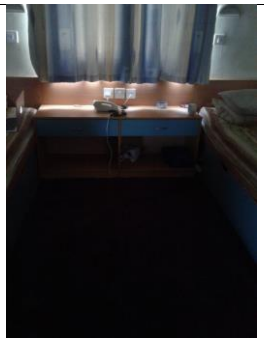
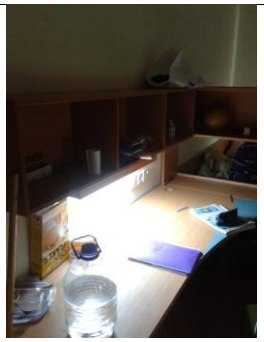
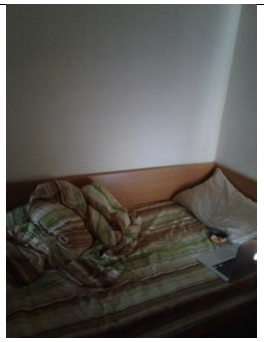
		
Views of Occupants: The occupants expressed significant desire for space personalization. Spatial arrangement and personal space are perceived by the occupants as satisfactory. However privacy levels are seen by occupant as grossly inadequate. Spatial arrangement does not hinder occupants from doing private work on their computer systems.		
EVALUATIONS: **Space Personalization:** Very insignificant effort has been made at personalization which includes a few clothes placed on shelf, bags and some few items placed on table. Room re-arrangement has never been done once and there are no additional furnishings in the room. Walls are bare. Room is clean and tidy. **Relationship of Digital Gadgets With Spatial Arrangement:** Computers are used both on tables and beds due to available internet wire connection around beds and tables. There is limited visual privacy around beds and tables. Computer screens on tables are open to the room thus affording the users little privacy. More privacy exists for computer use on beds as screens can be turned away from observers. Individual personal space for occupants is greatest around the reading tables and beds. Spatial re-arrangement possibilities are limited due to in-sufficient room space.		

Table 42**:** Observation chart 13A

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Akdeniz **Room No.** 561 **No. of Occupants:** 2 **Gender:** Male	
Theme	**Indicators**	**Options**	
Personalization Assessment	Involvement in Personalization of Room	Strong	
		Average	
		Weak	*
	Rearrangement of Furniture	New Arrangement Done	
		No Re-arrangement Done	*
	Items Used for Personalization	Painting, bedding, rug, electronics, throw pillow	
	Degree of mess and disorder	Clean and tidy	
		Dirty and messy	
		Clean but disorderly	*
Privacy Assessment	Place of Computer Use	Bed	
		Desk	*

	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	*
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*

Table 43: Observation/evaluation chart 13B

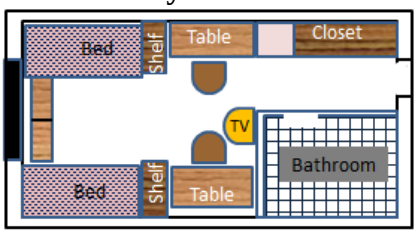
Dormitory & Room Number: Akdeniz, 561	**Room Plan Layout** 
Gender of Occupants: Male	
Number of Occupants: 2	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	
Room Photos	
	
	
	
Views of Occupants: The occupants expressed interest in space personalization. Privacy levels, personal space and spatial arrangement are perceived by the occupant as not very satisfactory. Spatial arrangement does not hinder occupants from doing private work on their computer systems.	

EVALUATIONS:
Space Personalization: Minimal effort has been made at personalization which includes a painting on the shelf; throw pillow and a rug on the floor. Walls are bare. Room is clean but untidy.
Relationship of Digital Gadgets With Spatial Arrangement: Computers are used both on tables and beds due to available internet wire connection around beds and tables. There is limited visual privacy around beds and tables. . Computer screens on tables are open to the room thus affording the users little privacy. More privacy exists for computer use on beds as screens can be turned away from observers. Individual personal space for occupants is greatest around the reading tables and beds. Spatial re-arrangement possibilities are limited due to in-sufficient room space.

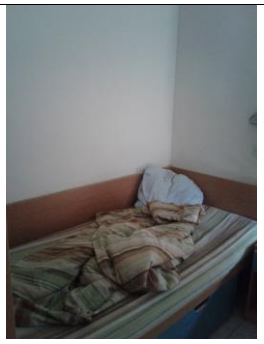
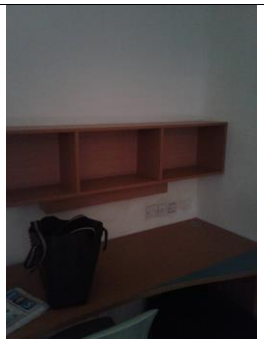
Table 44**:** Observation chart 14A

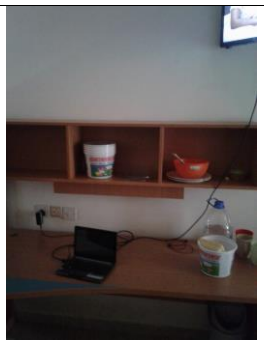
Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Akdeniz **Room No.** 646 **No. of Occupants:** 2 **Gender:** Male		
Theme	**Indicators**	**Options**		
Personalization Assessment	Involvement in Personalization of Room	Strong		
		Average		
		Weak		*
	Rearrangement of Furniture	New Arrangement Done		
		No Re-arrangement Done		*
	Items Used for Personalization	Body care products, Books, Clothes, beddings		
	Degree of mess and disorder	Clean and tidy		
		Dirty and messy		
		Clean but disorderly		*
Privacy Assessment	Place of Computer Use	Bed		
		Desk		*
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	*
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	*

Table 45: Observation/evaluation chart 14B

Dormitory & Room Number: Akdeniz, 646	**Room Plan Layout** 
Gender of Occupants: Male	
Number of Occupants: 2	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	

Room Photos

Views of Occupants: The occupant expressed interest in space personalization. Occupant perceives privacy levels, personal space and spatial arrangement as unsatisfactory. Spatial arrangement does not hinder occupants from doing private work on their computer systems.

EVALUATIONS:

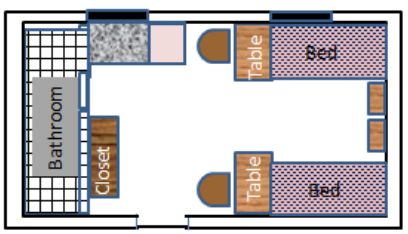
Space Personalization: Very minimal effort has been made at personalization which includes a few books in shelf, and clothes hanging on wardrobe door. Room re-arrangement has been done before and there are no additional furnishings in the room. Walls are bare. Room is clean but untidy.

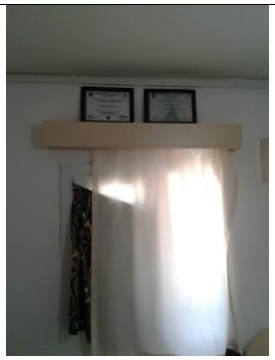
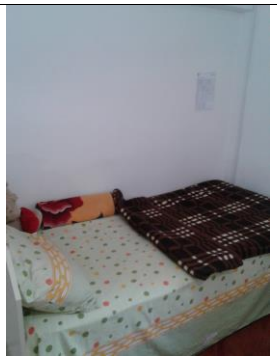
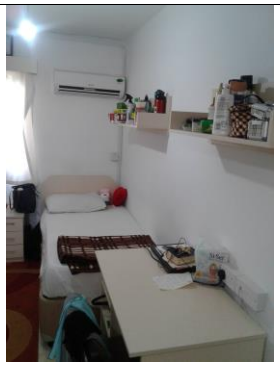
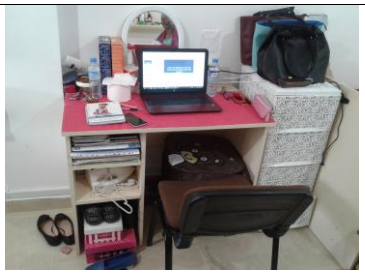
Relationship of Digital Gadgets With Spatial Arrangement: Computers are used both on tables and beds due to available internet wire connection around beds and tables. There is limited visual privacy around beds and tables. . Computer screens on tables are open to the room thus affording the users little privacy. More privacy exists for computer use on beds as screens can be turned away from observers. Individual personal space for occupants is greatest around the reading tables and beds. Spatial re-arrangement possibilities are limited due to in-sufficient room space.

Table 46: Observation chart 15A

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Alfam **Room No.** 243 **No. of Occupants:** 2 **Gender:** Female		
Theme	**Indicators**	**Options**		
Personalization Assessment	Involvement in Personalization of Room	Strong		*
		Average		
		Weak		
	Rearrangement of Furniture	New Arrangement Done		*
		No Re-arrangement Done		
	Items Used for Personalization	Body care products, academic schedule, mirror, rug, shoe rack, throw pillow, drawer set, curtain, beddings		
	Degree of mess and disorder	Clean and tidy		*
		Dirty and messy		
		Clean but disorderly		
Privacy Assessment	Place of Computer Use	Bed		*
		Desk		*
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*

Table 47: Observation/evaluation chart 15B

Dormitory & Room Number: Alfam, 243	**Room Plan Layout**
Number of Room Occupants: 2	
Gender of Occupants: Female	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	
Room Photos	


Views of Occupants: Occupants expressed considerable interest in space personalization. They have a desire to do more personalization but are restricted by dormitory regulations. Privacy levels, personal space and spatial arrangements are perceived by the occupants as satisfactory. Occupants perceive the spatial arrangement as conducive for doing private work on their computer systems.

EVALUATIONS:

Space Personalization: There has been a considerable attempt at space personalization which includes: neat and tidy space, bed sheets &blankets, rug, throw pillow, teddy bear, clothes hamper, mirror, body care products, certificates placed above the window and a cloth covering one side of the window. Furniture re-arrangement has been done before.

Relationship of Digital Gadgets With Spatial Arrangement: Computers are used both on tables and beds due to closeness of beds and tables to the available internet wire connection. There is no privacy around both bed spaces and tables however, and computer screens are open to the general room space. Individual personal space for occupants is greatest around the reading tables and beds. Spatial re-arrangement possibilities are limited due to in-sufficient room space.

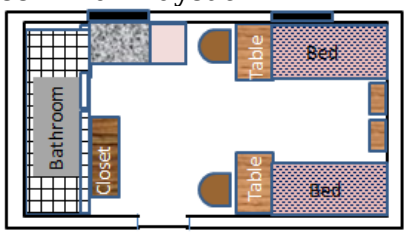
Table 48**:** Observation Chart 16A

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** Alfam **Room No.** 217 **No. of Occupants:** 2 **Gender:** Female	
Theme	**Indicators**	**Options**	
Personalization Assessment	Involvement in Personalization of Room	Strong	*
		Average	

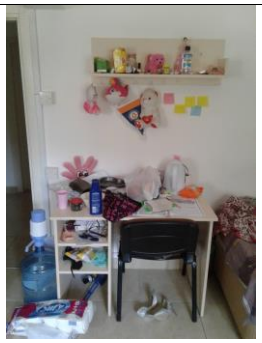
		Weak		
	Rearrangement of Furniture	New Arrangement Done		
		No Re-arrangement Done		*
	Items Used for Personalization	Body care products, academic schedule, wall stickers, rug, shoe rack, toys, electronics,		
	Degree of mess and disorder	Clean and tidy		*
		Dirty and messy		
		Clean but disorderly		
Privacy Assessment	Place of Computer Use	Bed		*
		Desk		*
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	*
		Desk	Private	
			Semi-private	
			No privacy	*

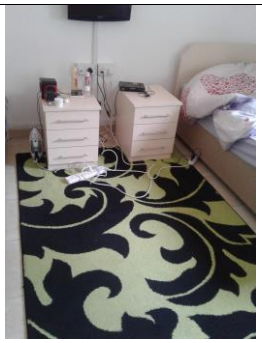
Table 49: Observation/Evaluation Chart 16B

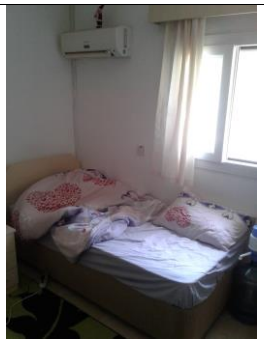
Dormitory & Room Number: 217	**Room Plan Layout**
Gender of Occupants: Females	
Number of Occupants: 2	
Assigned Furniture: desk, beds, wardrobes, chairs, bed-side tables, bookshelves, refrigerator, air-conditioner, TV satellite and telephones.	



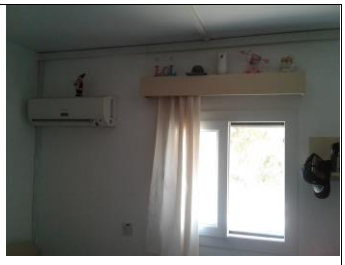
Room Photos











Views of Occupants: The occupants expressed considerable interest in space personalization. Privacy levels, personal space and spatial arrangements are perceived by the occupants as satisfactory. Spatial arrangement is perceived by occupants as conducive for doing private work on their computer systems.

EVALUATIONS:

Space Personalization: There has been a considerable attempt at space personalization which includes: neat and tidy space, bed sheets &blankets, rug, decorative toy animals, teddy bear, wall stickers, body care products, notifications and travelling bags.

Relationship of Digital Gadgets With Spatial Arrangement: Computers are used both on tables and beds due to closeness of beds and tables to the available internet wire connection. There is no privacy around both bed spaces and tables however, and computer screens are open to the general room space. Individual personal space for occupants is greatest around the reading tables and beds. Spatial re-arrangement possibilities are limited due to in-sufficient room space.

Table 50: Summary of observed personalization activities of female participants

Room	Room Re-arrangement	Pictures/Painting	Wall Notifications	Beddings	Books	Shoe rack & Clothes	Teddy and Toys	Body-care products	Throw Pillow	Rug	Plant	Clock	Bags & Travelling	Sports Banner	Electronics	Table Cloth/ Curtain	Wall Stickers	Clothes Hamper	Clean and Tidy	**SUMMARY**
1		*	*	*	*	*	*	*					*						*	A
2		*	*	*	*	*			*				*							W
3		*		*	*	*	*	*					*							W
4	*			*	*	*		*					*			*				W
5	*			*	*	*		*					*							W
6		*	*	*	*		*	*				*	*						*	W
7	*		*	*	*	*	*	*	*	*			*			*		*	*	ST
8			*	*		*	*	*		*					*		*		*	ST

Summary: Space personalization in most of the female rooms can be described as generally weak. Only 37.5% of the rooms have average to strong space personalization. The most common acts depicting space personalization are beddings, books, body-care products, shoes racks and bags. 75% of the rooms have decorative, identity-oriented and personal items such as pictures, wall stickers, rugs, certificates and toys. 50% of the rooms are clean and tidy and 37.5% of the rooms have done furniture re-arrangement. There are no items depicting Nigerian culture in any of the rooms.

Age is not seen as a determining factor in degree of space personalization. Length of stay in dormitory however seems to have some effect on degree of space personalization as 80% of those with average to strong space personalization have stayed between 2-3yrs in the dormitory while only 20% have stayed less than 2yrs; 40% of those with weak space personalization have stayed 2-3yrs compared to 60% who have stayed above 2 yrs.

Legend: ST= strong, A= average, W= weak, VW= very weak

Table 51: Summary of observed personalization activities of male participants

Room	Room Re-arrangement	Pictures/Painting	Wall Notifications	Beddings	Books	Shoe rack & Clothes	Teddy and Toys	Body-care products	Throw Pillow	Rug	Plant	Clock	Bags & Travelling Bags	Sports Banner	Electronics	Table Cloth/ Curtain	Wall Stickers	Clothes Hamper	Clean and Tidy	**SUMMARY**
1					*	*							*	*						VW
2			*	*	*	*		*			*		*		*					W
3	*				*	*		*												VW
4	*				*	*									*				*	VW
5					*	*		*					*						*	VW
6				*	*	*							*		*				*	VW
7		*							*	*					*					VW
8					*	*														VW

Summary: Space personalization in all the rooms is generally very weak. The most common acts depicting personalization are not decorative in nature and mostly comprise of personal items such as books, electronics, shoes and clothes either hanging or strewn around the room. Only 37.5% of the rooms have one or two decorative items such as paintings and rugs. 37.5% of the rooms are clean and tidy and 25% have done room re-arrangement. There are no items depicting Nigerian culture in any of the rooms.

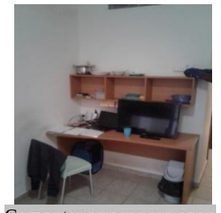
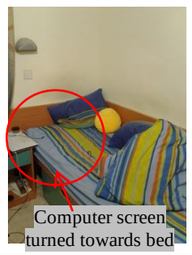
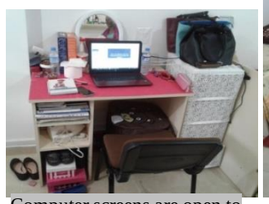
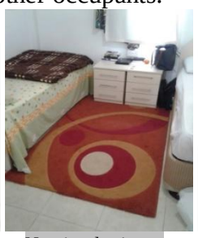
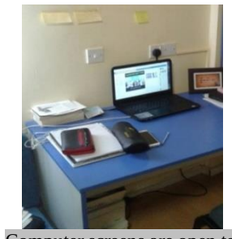
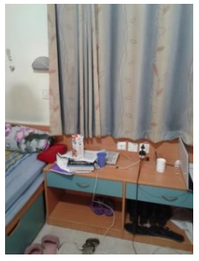
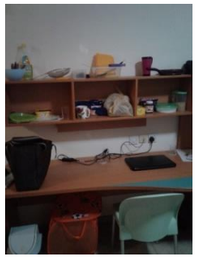
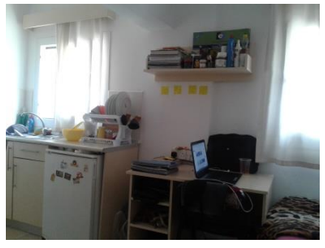
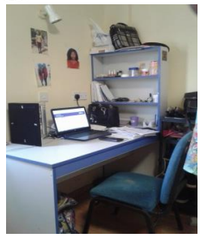
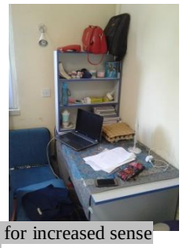
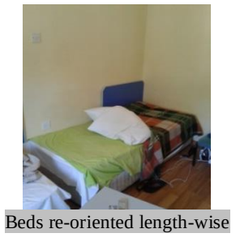
Age and length of stay in dormitory are not seen as determining factors in degree of space personalization as personalization is weak in all the rooms, irrespective of age or length of stay in dormitory. Legend: ST= strong, A= average, W= weak, VW= very weak

6.2.4 Summary of Observed Privacy, Personal Space and Relative Use of Digital Gadgets in Dormitory Room Spaces

It was observed that there is a general absence of visual privacy in all the rooms. Bed spaces and reading areas are open to occupants and visitors. The tables are open to anybody who might enter the room and any private work being done on a computer is open to the view of occupants in the room. There is however greater privacy for occupants who wish to do their work from their beds as computer screens can be turned away from the general room space. A few residents of Ugursal who had no wi-fi connections were observed to have added cords to their internet cables thus giving them greater flexibility and convenience to work with their computers from their beds. Attempts at increasing privacy in the rooms around both beds and tables are generally minimal and where applicable mostly consist of tables being oriented sideways thus giving partial privacy to those working on their tables.

Personal spaces for all the rooms are greatest around the beds and reading tables. These spaces clearly 'belong' to the occupants and these are the only places where they have maximum freedom to sit, lie down and relax comfortably. However due to the fact that these rooms are shared, intruding in one another's personal area is very common. Occupants and visitors alike continually enter into one another's personal zone by sitting on one another's beds or reading tables (See table 52 for summary of observed privacy, personal space and relative use of digital gadgets in dormitory room spaces).

Table 52: Summary of observed privacy, personal space and use of digital gadgets in relation to dormitory room spaces

Dormitory	Akdeniz	Alfam	Uğursal
Visual Privacy	• No visual privacy around tables. Computer screens are open to occupants and visitors. • Partial privacy exists around bed spaces due to presence of book-shelves which partially block beds from view. • Enough privacy exists for computer use on beds as screens can be turned away from view of others.  Computer screens are open to all occupants and visitors  Bookshelf in front of bed offers partial privacy  Computer screen turned towards bed	• No privacy at reading tables. Computer screens are open to occupants and visitors • No visual privacy around bed spaces. • Partial privacy exists for computer use on beds as computer screens can be turned sideways away from observations of other occupants.  Computer screens are open to all occupants and visitors  No visual privacy  Computer screens turned towards bed	• No privacy at tables. Computer screens are open to all occupants and visitors • No visual privacy around bed spaces. • Enough privacy for computer use on beds as screens can be turned away from view of others.  Computer screens are open to all occupants and visitors  No visual privacy
Personal Space	• Occupants have greatest personal space for rest and relaxation around beds and tables.	• Occupants have greatest personal space for rest and relaxation around beds and tables.	• Occupants have greatest personal space for rest and relaxation around beds and tables.
Internet Connection	• Internet cable connections available in 2 places: by beds and reading tables.  	• Internet cable connection available by tables but close enough for computers to be used on beds. 	• Internet cable connection available only by tables thus restricting computer use to tables. • Extended internet cable done by occupants allows computer to be used on beds.   Internet cable extended to bed
Possibility of spatial re-arrangement	• Minimal possibility due to spatial configuration. • Occupants have made no attempts at spatial re-arrangement.	• Minimal possibility due to spatial configuration. • Occupants have made no attempts at spatial re-arrangement.	• Spatial configuration makes it possible for tables and beds to be re-oriented. • Several occupants have re-oriented their tables for increased privacy. One room was observed to have re-oriented position of bed.   Tables re-oriented side -ways for increased sense of privacy  Beds re-oriented length-wise

6.2.5 Does the use of digital communication gadgets have any effect on use and personalization of space?

An effort was made by the researcher to ascertain whether any relationship exists between degree of space personalization and use of digital gadgets in each of the rooms observed. This was done firstly by examining whether desire for increased privacy while using their gadgets influenced the occupants to engage in furniture re-arrangement. This is based on the assertion by several researchers such as Sundstrom (1986) & Becker & Coniglio (1975) that room re-arrangement serves as an act of space personalization. In each of the rooms observed however, use of digital gadgets did not serve as a reason for the occupants to engage in furniture re-arrangement.

Secondly, to further determine whether digital gadgets have any effect on personalization of their spaces, the participants were asked, *1.)What would you with your time if you didn't have your phone or computer for one or two days? 2.) …would it change the way you decorate your room or the time you give to decorating your room 3.) Would it change some of the activities you do in your room?*

From the responses gathered, only about 10% of the participants felt that they would engage in more space personalization. The other 90% indicated that the absence of their digital gadgets would in no way affect how they personalize their spaces. In fact one of the participants told me:

> I don't think there would be much difference. If I want to decorate my room, using my laptop or phone wouldn't stop me from decorating my room.

Thirdly, while it was observed that personalization was generally weak in most of the rooms, reasons given by the participants as to why this was so had no relation to use

of digital gadgets. For instance, reasons given by the occupants as to why they did only minimal personalization were: restrictions by dormitory management, their temporary stay in the dormitories and also their view that the spaces were not their own.

When asked whether they would use their spaces differently if they didn't have their gadgets, the general consensus of the participants was that they would not. In fact 63.3% indicated that they would rather go out than stay in their rooms. Other responses as to what they would do with the available time were: read more books, sleep more, socialize more, play games, do more space personalization. Their responses are captured in figure (28).

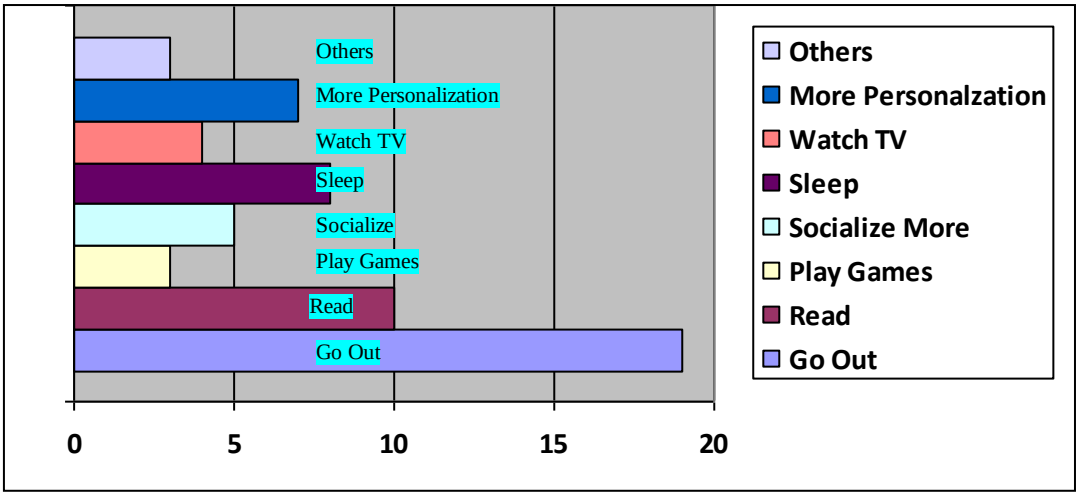


Figure 28: Possible activities participants would do in their rooms in the absence of their phones/computers

6.3 Evaluations and Discussion Generated From Results

The following discussions are formulated based on the data presented above.

6.3.1 Relationship of Young People with Their Dıgital Gadgets

Young people spend a considerable amount of time engaged in various activities on their cell phones and computers. These gadgets seem to be central in the lives of young people today. From the evidence collected young people spend about 2/3 of their time indoors engaged in various activities on their gadgets such as playing games, watching movies, browsing the internet, chatting or engaging in social media. There is however no clear distinction between the time spent on phones and the time spent on computers as the two activities overlap one another. Phones and computers have become such vital parts of young people's lives that their absence can be a source of great agitation to the owners. This is observed from the responses of the participants where more than 2/3 of them admitted that they would be greatly bothered of they didn't have their gadgets for a day or two with some admitting that they would actually be miserable and depressed if they didn't have their gadgets.

Data from literature suggests that digital communication gadgets impact on human social relationships and daily activities. For instance, Hatuka & Toch (2014) reveal that there is a subtle detachment from physical environments by phone users which manifests in less social interactions. The responses of participants in this study however indicate that despite the importance of digital gadgets to young people and the amount of time which they spend on the gadgets, when it comes to the area of social relationships, most young people still prefer to socialize and spend time with their physical friends than with their inanimate communication gadgets.

The overall assessment of the relationship between young people and their digital gadgets indicate that digital gadgets are a vital part of young people's lives today whose absence would greatly reduce the comfortability and excitement of day to day

living. It is also evident that these gadgets are gradually compromising the effective time management and quality of social relationships of young people.

6.3.2 Perception of students in dormitories towards their interior living environments and effect of digital gadgets

From the data obtained from the interviews, surveys and observations, the overall assessment of students' perception of their indoor spaces in terms of privacy, personal space, and spatial arrangements can be said to be positive. Participants described their spaces as peaceful, relaxing and conducive enough for studies. They are of the opinion that spatial arrangement and privacy levels in their spaces are such that they are able to work productively on their gadgets. Virtually all the participants declared that they enjoy spending time in their rooms because of the comfortability of their spaces.

Among the factors which the participants gave for discomfort in their rooms, the most outstanding was the lack of wireless networks which limits them from changing the position of their laptops thereby restricting them from studying in the position best suited for their comfort.

This study has shown that the availability of digital communication gadgets is a motivating reason why young people spend time indoors and which makes living environments more comfortable and conducive for students. Without these gadgets however, evidence suggests that majority of young people would rather either spend their time outside of their rooms or intensify basic day to day indoor activities such as sleeping, resting, reading or socialization, to keep themselves entertained.

This suggests that absence of phones and computers has the potential to transform spaces which were previously perceived as restful, relaxing, and comfortable to spaces which are described as boring, dull and unexciting. In this sense therefore, digital gadgets can be said to increase the positive perception which people have about their interior spaces.

Considering the important role digital gadgets play in the comfort level of occupants of a space, it becomes very important for designers and dormitory managements to ensure that adequate provision for internet services are provided in residential spaces. Increased satisfaction with living spaces will likely increase bonding between occupants and their spaces thus creating enhanced adaptation and sense of well-being. This could positively translate into improved academic performances.

6.3.3 Privacy, Personal Space and Participant's Use of Digital Gadgets

All the dormitory rooms observed by the researcher have a general lack of privacy around the bed spaces and reading tables meaning that most of their activities are open to one another and to any outsider who might enter the room. Personal space for the occupants is mostly around the bed spaces and reading tables. However, observations reveal that these spaces are easily invaded by roommates and visitors who readily migrate from one bed space to another or from one reading table to another.

Responses from the participants however, suggest that levels of privacy in their spaces are quite sufficient for them to do any work on their gadgets. This view is corroborated by the apparent general lack of furniture or spatial re-arrangement which would have increased privacy levels for the occupants, despite that fact that most of the furniture appears to be unfixed and thus moveable.

The earlier responses of participants indicating their level of satisfaction with privacy in their spaces and the fact that they are able to work comfortably on their systems even if visitors are in their spaces seems to suggest that digital gadgets do not have significant effect on demands for increased privacy and personal space.

However, based on literature surveys which stress that privacy is a basic requirement of occupants of a space, this study recommends that living spaces be designed with flexible spaces and furniture so that occupants can readily change the spatial configuration. This would provide them with the required privacy they desire whenever the need arises.

6.3.4 Space Personalization and effect of digital gadgets

Results from this study reveal that although most of the participants (80%) expressed interest in personalization, this interest is not seen reflected in their spaces. Space personalization in most of the rooms, especially those of the males, is very weak. The male rooms in this study are generally devoid of any decorative acts of space personalization whereas, the female rooms, though also generally weak, use more decorative items such as pictures and wall stickers. This concurs with previous studies on space personalization such as Noorian (2009) and Ayinde (2016) who have indicated that females display more emotion and decorations in their spaces than males. Also noticeable is that all the spaces lack any items of cultural value which would identify the participants as minorities living in a foreign land.

Most of the participant's in this study blamed their limited space personalization on dormitory managements who restrict them from pasting things on the walls. They thus seem to equate space personalization only with wall decorations. Based on the

researcher's observations however, this reason is not logical as diverse acts can be done in a space to show space personalization.

One might therefore be safe to infer that other factors and not dormitory restrictions are the main reason why Nigerian students do not engage in much space personalization. Two possible suggestions have been proffered: the first which is derived from Ayinde (2016) suggests that participants are considerate of the fact that whatever money they expend in space personalization will be lost since they wouldn't be able to be transport most of the items back home. The second is based on interviews conducted with participants during the course of this study and suggests that participants perceive these spaces as only temporary homes which they will eventually leave and thus consider it not worth expending too much time, energy and cost in personalizing.

However, a third inferred possibility emerges which is that obsession with digital gadgets might be a reason why young people do not give much time to space personalization. This assertion is derived from the data obtained in the course of the study which shows young people indicating considerable interest in space personalization, yet engaging in it only minimally, whereas most of their indoor hours are spent engaged on their digital gadgets. This then seems to suggest that their interest in space personalization is being overtaken by the attention they give to their digital gadgets.

Based on this assertion therefore, this study suggests that use of digital gadgets is a possible reason why there is reduced interest in space personalization activity by young people which manifests in minimal personalization activities in spaces.

Table 53: Summary of findings on research questions

Research Questions	Findings	Effect of Gadgets	Conclusion
1. Are the perceptions of students in dormitories towards their interior living environments being affected by digital communication gadgets?	Ratings of spatial perceptions by participants in terms of privacy, personal space and spatial layout are high (62.5% - 81%). Most participants (93%) enjoy spending time in their rooms. Rooms are described by participants as peaceful, relaxing and conducive enough for studies.	Availability of digital communication gadgets motivates participants to spend time indoors. Without their gadgets, 63.3% of participants would rather spend their time outside of their rooms Participants described their spaces without the gadgets as boring, dull and unexciting.	Usage of digital gadgets in a space increases the positive perception which people have about their interior spaces. Digital communication gadgets have significant effect on perceptions of interior living environments.
2. Does the use of digital communication gadgets affect young people's demands for privacy?	81.7% of participants believe privacy levels and physical layout are sufficient for them to work on their gadgets. 96.7% of participants have made no effort to increase privacy levels through furniture re-arrangement.	Participants' use of gadgets in their spaces does not require additional levels of privacy.	Usage of digital gadgets in a space has minimal effect on demands for privacy.
3. Are digital communication gadgets affecting how young people use and personalize their spaces?	80% of participants indicated interest in space personalization Space personalization is weak in 81% of rooms despite participants' declarations of	Use of digital gadgets seems to be distracting occupants' attention from space personalization. Usage of digital gadgets is affecting use of space by	Digital gadgets might be one of the factors responsible for lack of space personalization

	interest. Use of phones/ computers occupies most of the indoor time of participants (average of 4-6hrs out of 6-8 awake moments daily).	reducing time which participants give to other activities such as reading, resting and socialization.	

Chapter 7

CONCLUSION

The aim of this research was to examine if digital communication gadgets, specifically mobile devices and computers, are having any effect on the way young people relate with their spatial environments. To adequately achieve the aim of the study, several research questions were addressed: (1) Are the perceptions of students in dormitories towards their interior living environments being affected by digital communication gadgets? (2) Does the use of digital communication gadgets affect young people's demands for privacy and personal space? (3) Are digital communication gadgets affecting how young people personalize their spaces?

Nigerian students of Eastern Mediterranean University who are residing in dormitories within the campus were chosen as the field study. They represent a broad range of young people who use digital gadgets on a daily basis and therefore served as ideal participants for such a study. Data was obtained from this study group through the use of surveys, interviews and observations. At the end of the study, several findings were arrived at which answered the individual research questions raised at the beginning of the study.

Research question one was addressed by first of all attempting to understand perceptions of the participants about their living spaces. Findings revealed that the students have positive opinions of their spaces and perceive them as enjoyable,

relaxing, and conducive for studies. Most of them claim to enjoy spending time in their rooms. The spatial arrangements and privacy levels are also seen by them as satisfactory. However, evidence shows that having their phones and computers and also unlimited access to the internet is a major contributory factor to the positive perceptions which they have towards their spaces. Without these gadgets, the spaces would no longer be seen as enjoyable but rather as dull and boring. One can therefore categorically state that digital communication gadgets do have influence on young people's perceptions of their interior environments.

The second research question addresses the effect digital communication gadgets are having on personalization of spaces. This question was answered by first understanding the personalization behaviors of the participants. Evidence shows that space personalization though acknowledged as an important exercise by the participants is however not seen reflected in their living spaces. Actual personalization activities in each of the rooms observed was generally weak. Cultural background of the participants is not seen reflected in any of the rooms. Of equal importance is the fact that considerable time is spent indoors by the participants with as much as two-thirds of that time spent on phones and computers. The researcher thus makes the assertion that use of digital gadgets in interior environments may be a possible contributory factor to the limited personalization activities of the participants.

Thirdly, does the use of digital communication gadgets create greater demand for privacy in interior environments? Living in shared accommodations means that residents may not always have the desired level of privacy they require. Most of the observed rooms have little visual privacy around the beds and study tables which is

where the occupants work most on their computer systems. However, almost all the participants agreed that the privacy levels in their rooms were sufficient for any work they wished to do on their systems. There were also only minimal efforts to increase privacy levels either through furniture re-arrangement or physical and visual barriers in the rooms. It is therefore apparent that digital gadgets do not significantly increase demands for privacy in interior living environments.

Some of the findings in this research have also corroborated what previous researches have stated about the effect of digital gadgets on young people. For instance, Schwebel et al's (2012) statement that distracted phone users often pay less attention to their environments was verified by testimonies of participants in this study who recounted incidents of minor accidents they have had as a result of focusing their attention on their phones. Similarly, some of the participants stated that they often use their phones when trying to avoid unwanted social interactions. This verified findings by Nakamura (2015) who asserts that focused attention on cell phones may be a way of sending non-verbal messages to others of a desire for privacy or a desire not to be disturbed. Meanwhile, findings from this study partly verify the assertion by Hatuka & Toch (2014) that phone use results in a subtle detachment from the physical environment which results in less social interactions. This study has shown that although phone use does sometimes serve as a source of distraction from daily activities and social interactions, most young people still prefer to socialize with their friends than spend time on their digital gadgets. Lastly, this study supports the claim by Canton (2012) that Nigerians generally have a culture of public phone use. This is corroborated by the views of many of the participants who verified that they often engage in phone calls in their rooms irrespective of who is around them, unless they have very private matters to discuss.

In summary, this study has shown that digital communication gadgets have significant effect on perception of space but have minimal effect on demands for privacy and personal space. The study also infers that digital gadgets consume a considerable amount of young peoples' time and therefore may serve as a contributory factor to reduced personalization activities in interior spaces

7.1 Implications of the Study for Society

The study is valuable to understand and give insight to the effect of ICT on students' relationship with space in dormitories and with the environment in general. The research has broad design implications to architectural and interior design professionals. Understanding the psychological and behavioral concepts will help designers to create more suitable interior spaces according to people's physical and psychological needs.

Human needs vary in sociological, psychological and physiological dimensions. It is important therefore, when designing and managing spaces that these various dimensions of human need be taken into account (Mojarad, 2015). In order to meet these human needs within the interior environment, not only the physical dimensions of space should be considered but also the mental, i.e. man's logic and ideas about space and the emotional, i.e. levels and scopes of human interactions in interior environments.

From the results obtained from this study, it is obvious that digital communication gadgets have the potential to alter the general feeling of well-being which people have in their interior spaces. The provision of ICT and internet in living spaces can change a space previously perceived as dull and boring to one perceived as relaxing

and conducive. This then implies that spaces should be designed in such a way that users have the freedom of spatial and furniture rearrangement, privacy and necessary comfort required to use their gadgets most effectively. The study also suggests that living spaces be appropriately fitted with internet connections, especially wi-fi connections such that occupants can adequately and conveniently use their digital gadgets indoors in whatever position and location they so desire. This would be of great benefit to students, especially those far from their homelands, because it is believed that this action will increase bonding of individuals with both their indoor living spaces as well as their learning environments and could in the long run impact positively on their academic and social lives.

7.2 Recommendations for Future Research

This research has opened up several areas of potential future study. Firstly, this study was focused on dormitory living spaces as a controlled environment. Future research could be done in other dormitory spaces such as common rooms, cafes and restaurants. Likewise, offices or classroom environments can also be used as case studies to assess whether there would be any change on the effect of ICT on human-spatial relationships in such environments.

This study has focused on Nigerian students as the case study. Further studies could also be done on other cultural groups to observe whether similar results would be obtained.

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APPENDICES

Appendix A: Questionnaire Survey

Participant No._____

Impact of Digital Communication Technology on Personalization, Perception and Usage of Space

Using the scale provided, please tıck the box that corresponds to your desired response

1. **Age** : Less than 20 □ 20-25 □ 26-30 □ Above 30 □
2. **Gende**r: M □ F □ No Answer □
3. **Level of Study**: Undergraduate □ Master □ PhD □
4. **Length of time spent living in Dormitory.**

   Less than a year □ 1 year □ 2 years □ 3 years □ above 3 years □
5. **I am able to personalize my space as I wish.**

   Strongly agree □ Agree □ Neutral □ Disagree □ Strongly Disagree □
6. **Putting up personal items around my living space is important to me.**

   Strongly agree □ Agree □ Neutral □ Disagree □ Strongly Disagree □
7. **Putting up personal items around my living space is important to me because: (Please tick the ones which apply)**

   I am able to express my identity & individuality □ I am reminded of home □

   I show ownership of my space □ For aesthetics □

   Others □ *(please specify)* _____
8. **I have sufficient personal space in my dormitory room.**

   Strongly agree □ Agree □ Neutral □ Disagree □ Strongly Disagree □
9. **I am comfortable with the spatial arrangement of my space.**

Strongly agree □ Agree □ Neutral □ Disagree □ Strongly Disagree □

10. **I feel that the physical layout of my room enables me to work productively on my computer.**

    Strongly agree □ Agree □ Neutral □ Disagree □ Strongly Disagree □

11. **How many hours do you spend in your room daily while awake?**

    0-2 □ 2-4 □ 4-6 □ 6-8 □ above 8 □

12. **What do you do most, within these hours?**

    Study □ Visit with friends □ Rest □ Use phone/computer □

    Others □ (Please specify) _____

13. **How many hours do you spend daily on your phone/computer in your room?**

    0-2 □ 2-4 □ 4-6 □ 6-8 □ above 8 □

14. **Where in your room do you use your phone/computer?**

    Bed □ Desk □ Others _____

15. **How would you rate the privacy in your room?**

    Very High □ High □ Medium □ Low □ Very low □

16. **I desire to have privacy when using my phone/computer in my room**

    Strongly agree □ Agree □ Neutral □ Disagree □ Strongly Disagree □

17. **I feel I have enough privacy while using my computer and mobile phone.**

    Strongly agree □ Agree □ Neutral □ Disagree □ Strongly Disagree □

18. **People's presence in my room affects how I use my computer or cell phone.**

    Strongly agree □ Agree □ Neutral □ Disagree □ Strongly Disagree □

Appendix B: Interview Questions

1. Do you enjoy spending tıme in your room? Why/ Why not?
2. What about your room makes you feel comfortable (or uncomfortable?) Why?
3. If you feel uncomfortable, what do you think could be done to make it more comfortable?
4. Are you comfortable with the spatial (physıcal) arrangement of your room? Why/ Why not?
5. Have you done anything to your room to personalize it to make it fit your style more?
6. At home, do you personalıze your space?
7. If yes, where do you personalize more, here or at home? Why?
8. Why do you gıve more (less) tıme to space personalization here?
9. Whıch do you use more whıle ın your room: your phone or your computer?
10. How much time do you spend on your phone/computer while in your room?
11. Does the use of your phone affect your daily activities?
12. What if you didn't have your phone/computer for a day or two, would it bother you?
13. If yes, how?
14. What would you with the time without the phone/computer?
15. Would it change the way you use your room (e.g. usage of the room for more socialization activities?)
16. Would it change the way you decorate your room or the time you give to decorating your room?

17. Is privacy important to you when using your phone or computer
18. Do you feel you have enough privacy to work on your computer in your room?
19. If you have the opportunity, how would you re-arrange the room to have more privacy?
20. Does people's presence ın your room affect how you use your phone computer? How?
21. Does the use of your phone affect the social relations with your friends?
22. Are there spaces in your dormitory for socialization?
23. If yes, do you use them or would you rather be in your room on your phone or computer?
24. Do you use your phone while walking/riding on the bus? (Any particular reason?)
25. Why do you feel it is necessary to use your phone while walking/ riding on the bus?
26. Do you use your phone while sitting/standing alone?
27. Are you conscious of the physical attributes of your environment while walking around the campus or along the street?
28. Does the use of your phone distract your attention while walking? In what way(s)?
29. Have you ever had any type of accident while using your phone? E.g. trip or mistakenly bump into someone? How frequently?
30. Do you use your phone to find directions?

Appendix C: Observation Chart

Observation Chart on Personalizing Behavior of Students in the University Dormitories:		**Dorm:** **Room No.** **No. of Occupants:** **Gender:**		
Theme	**Indicators**	**Options**		
Personalization Assessment	Involvement in Personalization of Room	Strong		
		Average		
		Weak		
	Rearrangement of Furniture	New Arrangement Done		
		No Re-arrangement Done		
	Items Used for Personalization			
	Degree of mess and disorder	Clean and tidy		
		Dirty and messy		
		Clean but disorderly		
Privacy Assessment	Place of Computer Use	Bed		
		Desk		
	Degree of visual privacy around main furniture	Bed	Private	
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	
	Degree of visual privacy when using computer	Bed	Private	
			Semi-private	
			No privacy	
		Desk	Private	
			Semi-private	
			No privacy	

Appendix D: Observation/Evaluation Chart

<table>
<tr><td colspan="2">Dormitory & Room Number:</td><td>Room Plan Layout</td></tr>
<tr><td colspan="2">Gender of Occupants:</td><td rowspan="3"></td></tr>
<tr><td colspan="2">Number of Occupants:</td></tr>
<tr><td colspan="2">Assigned Furniture:</td></tr>
<tr><td colspan="3">Room Photos</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="3">Views of Occupants:</td></tr>
<tr><td colspan="3">EVALUATIONS:
Space Personalization:

Relationship of Digital Gadgets With Spatial Arrangement:</td></tr>
</table>

Appendix E: Letter of Information/Voluntary Participation

Department of Architecture,
Eastern Mediterranean University,
Gazımagusa, N. Cyprus,
May, 2017

LETTER OF INFORMATION/ VOLUNTARY PARTICIPATION

Impact of Digital Communication Technology on Personalization, Perception and Usage of Space

Introduction/ Purpose: Assist. Prof. Dr. Guita Farivarsadri of Department of Interior Architecture and Joyce Lodson of Architecture Department at Eastern Mediterranean University are conducting a research study to find out how digital communication technology is impacting young people's relationship with spatial environments. You have been asked to take part because you are a student of EMU currently residing in the dormitory. There will be approximately 30 total participants in this research.

Procedures: If you agree to be in this research study, you will participate in answering a series of questions about your dormitory room. The interview will be audio recorded in order for the researcher to insure an accurate account of the interview proceedings. With your permission, photographs will be taken of your living space. Your participation in this one time study will take approximately 10-15 minutes to complete.

Risks: There is no risk in participating in this research.

Voluntary nature of participation: Participation in this research is entirely voluntary. You may refuse to participate or withdraw at any time you so wish.

Criteria for Exclusion: Your participation will be excluded if you give any information which is deemed inconclusive or if you do not satisfactorily complete the questionnaire.

Confidentiality: Research records will be kept confidential. To protect your privacy, personal, identifiable information will not be collected. Photographs will be kept indefinitely for the purpose of developing future studies. Items in the photographs taken that can be directly linked to your identity will be blurred. Voice recorded data will be used only for the researchers notes and will not be published. The audio recordings will be destroyed at the conclusion of the study.

_____ _____

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Volunteer Participant

_____ _____

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Date