

OFFICE PRODUCTIVITY: A SELF-ASSESSED APPROACH TO OFFICE EVALUATION

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Abstract

The aim of this paper is to provide a validated theoretical framework for the measurement of office productivity. The study's strength is that it is based on two sizable data sets. The data collected consists of data about the physical characteristics of the office environment and data pertaining to the behavioural environment. One of the key contributions of this study was the development of the components of office productivity, which were: comfort, office layout, informal interaction points, environmental services, designated areas, interaction and distraction. The components were reduced to four in preparation for subsequent analysis. The four distinct components were comfort, office layout, interaction and distraction. This study establishes that it is the behavioural environment that has the greatest impact on office productivity. It demonstrates that it is the dynamic elements of the office environment, interaction and distraction that are perceived as having the greatest positive and negative influences on self assessed productivity.

Keywords: office evaluation, office layout, office productivity, workplace

Introduction

There has been a fundamental shift in the structure of the UK economy from that of an economy based on manufacturing to one more based on service and knowledge. It is therefore becoming increasingly important to establish the role that the office environment plays in the performance of its occupants.

There has been much written on the effects of the office environment on occupiers' productivity, however little evidence has actually been presented. The evidence that does exist largely defines the office environment in physical terms, i.e. the layout of the office and the comfort of its occupants. Whilst there appears to be a general consensus that the office environment has an effect on the occupiers' productivity (Oseland, 1999; Leaman and Bordass, 2000; Clements-Croome, 2000) there does not appear to be a universally accepted theoretical framework that represents office productivity. Consequently there are two main research areas that require further development, firstly the measurement of productivity, and secondly the evaluation of the effects of the office environment on the productivity of its occupants.

This research focuses on the development of a theoretical framework for office productivity, in order to further understand the components of the office environment, and their relative impact on the occupiers' productivity. The research broadens the understanding of the office environment from that of a purely physical environment to include the behavioural environment. This provides an insight into the dynamic nature, or connectivity, of office environments. The main aim of this research is concerned with investigating the effects the office environment has on its occupant's perceived productivity.

Research Aims

The main aims of this study can be summarized as follows:

- Develop a theoretical framework to represent office productivity, consisting of both physical and behavioural components.
- Demonstrate that it is the behavioural components of interaction and distraction that have the greater impact on office productivity.

Theoretical Framework Development

Research investigating the effects of the working environment on its occupants' productivity could be traced back to the 1930s (Roethlisberger & Dickson, 1939). One of the fundamental conclusions of these studies was the acknowledgment that the social dimension played an important role and was an integral part of the work environment. Whilst this discovery was made over 77 years ago, little research has been undertaken to further develop an understanding of the social concept, especially in the office environment. It is only recently that the literature has started to debate the behavioural components of the office environment, with a growing acceptance that they may have an impact on office occupier productivity.

It is acknowledged that previous researchers have had difficulty in defining what constitutes office productivity. There appears to be no universally accepted definition of productivity of office occupiers, let alone any agreed way of measuring office occupiers' productivity. Productivity measures, in a manufacturing context, simply relate outputs to inputs. Since the outputs from office occupiers can be more varied, the problem of measuring productivity becomes compounded. The varied range of outputs of office occupiers can be attributed to the range of different types of work undertaken in the office environment, with an increasing emphasis being placed on knowledge work.

Previous research into the relationship between the office environment and its occupants' productivity has tended to be conducted across two main discipline areas, those of facilities management, specifically workplace, and environmental psychology. However, later research appears to be suggesting that a collapsing of these boundaries is starting to emerge.

The main body of literature that attempts to link office environments and productivity largely addresses the physical environment. Whilst there appears to be no universally accepted means of measuring office productivity, there does appear to be acceptance that a self-assessed measure of productivity is better than no measure of productivity (Whitley *et al*, 1996; Oseland, 1999 and 2004; Leaman and Bordass, 2000).

The attempts made to link the physical environment with the productivity of its occupant's falls into two main categories: those of office layout and office comfort. The literature relating to the office layout appears to revolve around two main debates: those of open-plan versus cellular offices, and the matching of the office environment to the work processes. It could be argued that the open-plan debate has led to cost reduction, as the prevailing paradigm with regards to office environments. Also, matching office environments to work processes requires a greater understanding of what people actually do when in the office environment, which is still a subject of much debate. It must be noted that much of the physical environment literature reviewed lacked any theoretical framework, and where empirical evidence was provided the sample sizes tended to be relatively small: Leaman & Bordass (2000) and Oseland (2004) being notable exceptions.

Research that attempts to address the behavioural environment tends to be at the theoretical and anecdotal stage, with little supporting empirical evidence, a notable exception being Olson (2002). However, there appears to be a growing awareness of the impact of the behavioural environment on occupants' productivity. Established in the literature is the potential tension that can exist in the office environment between individual work and group work (Heerwagen *et al*, 2004). If the office environment is to act as a conduit for knowledge creation, and knowledge transfer, then offices need to allow both collaborative work and individual work to coexist without causing conflict between the two.

The main conclusions drawn from the literature can be summarized as follows. Firstly, whilst interest in the environment and productivity can be traced back to the 1930s, there has been little development of these earlier concepts, and notably very little empirical research. Furthermore, the empirical research that has been undertaken tends to be concerned with the physical environment, notably layout and comfort. Secondly, whilst there is increasing debate about the effects on office occupants' productivity of the behavioural environment, it is still an area that is in its infancy with regards to research evidence.

One of the main objectives of this study was to establish a theoretical framework to measure office productivity. The theoretical framework developed contained the main dimensions of physical environment and behavioural environment.

The behavioural environment was included as this was a great opportunity to collect empirical data about a dimension that has little research evidence. This dimension would allow a greater appreciation of how occupiers interact in the office environment.

The physical environment dimension was included since some evidence exists, in the literature, to support this dimension, specifically office layout and office comfort, and it also provided an opportunity to make comparisons. Added to these was the additional dimension of work pattern (Laing *et al*, 1998), which allows for categorization of workers by the way they undertake their work. The theoretical framework developed can be seen in Figure 1.

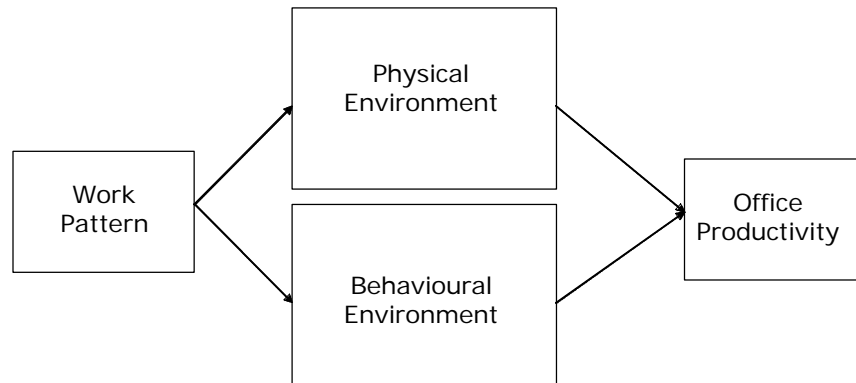


Figure.1 Theoretical framework of office productivity

Research Approach

The first dataset was obtained from a research project for a local authority research forum. The data were collected using a paper based questionnaire survey. In total 10 local authorities took part in the research project, with responses from 26 offices. The actual number of respondents was 996 from a population of 4,338 office occupants.

The second data set was obtained from the private sector, through a piece of contract research. This additional dataset provided an opportunity to test the findings of the first dataset. The data set was collected from one company consisting of four main buildings, which formed the company's head office. The total number of head office staff was 800. The data were collected using an online questionnaire with a response rate of 53%, i.e. 422 respondents.

The questions asked were basically the same for all the twenty-seven variables under investigation.

“In your opinion, in your current office environment, what effect do the following elements have on your personal productivity?”

To assist with the data entry a five-point Likert scale was used. The options were very negative, negative, neutral, positive, and very positive. Each option was allocated a score:

1 = very negative, 2 = negative, 3 = neutral, 4 = positive, 5 = very positive

Using the score values, average values can be established for each variable or statement. Average values above 3 indicate that the office environment is having a positive effect on work performance and average values below 3 suggest that the office environment is having a negative effect on worker performance.

The data from both surveys were used as a basis to develop a model and subsequent statistical analysis techniques. Factor analysis was used as the main technique to develop an understanding of the underlying concepts of office productivity. Factor analysis was conducted on three separate data sets. They were the local authority data set, the private sector dataset, and finally a combined data set. Once robust components had been established the results of the combined data sets were exposed to further statistical analysis.

Model development of office productivity

Hypothesis One:

Office productivity is a composite of the physical environment and the behavioural environment

The first aim of this research was to establish that a model could be developed to represent the concept of office productivity, with the dimensions of physical environment and behavioural environment.

Whilst the theoretical framework was created by identifying gaps in the literature the concepts used in the framework were operationalised so that variables could be created and ultimately be included in a questionnaire. At this stage, of the model development process, the concepts still remained theoretical.

Local government factor analysis

To test the concepts, the multivariate statistical technique factor analysis was used to establish underlying meaning from the data from local authority dataset. To ensure that the analysis was robust, and appropriate, a model-building process was adopted (Hair *et al*, 1995). The result of the model building process was the creation of seven components. The factor analysis had reduced the original 27 evaluative variables into seven underlying dimensions.

Table 1 VARIMAX rotated component matrix with highest factor loading for each variable.

Rotated Component Matrix	Component						
	1	2	3	4	5	6	7
Interruptions	0.811						
Crowding	0.726						
Noise	0.663						
Privacy	0.589						
Overall atmosphere	0.472						
Ventilation		0.755					
Heating		0.733					
Natural lighting		0.701					
Artificial lighting		0.664					
Personal storage			0.79				
General storage			0.706				
Workarea, Desk			0.689				
Overall office layout			0.508				
Position colleagues			0.454				
Circulation space			0.372				
Social Interaction				0.874			
Work Interaction				0.825			
Physical Security				0.529			
Creative physical				0.439	0.308		
Informal meeting areas					0.834		
Formal meeting areas					0.778		
Quiet areas					0.727		
Decor						0.802	
Cleanliness						0.751	
Overall comfort						0.521	
Position equipment							0.784
Refreshment							0.72

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 Rotation converged in 6 iterations

Table 1 illustrates the results from an orthogonal rotational solution with only the highest factor loadings for each variable retained. It is clear that all of the variables are retained, i.e. no variables have been filtered out in this process, and there are now clearly defined clusters of variables on the appropriate components. These clusters of variables are collectively measuring the corresponding component. This clearly illustrates that the 27 original variables have now been reduced to seven underlying dimensions. The next stage of analysis will be to consider the components created and to try to correlate them with theoretical dimensions. To assist in this process each component will be given a label.

To determine a label for a component, a pattern has to be established in the clustered variables.

"Variables with higher loadings are considered more important and have greater influence on the name or label selected to represent a factor." (Hair et al, 1995, p114)

The variables included in component one, such as interruptions, crowding, noise, privacy and overall atmosphere, indicate that this component is measuring some dimension related to interference or distraction (Mawson, 2002; Olson, 2002). Therefore it was decided to call this component **distraction**, as the variables loading onto this component appear to allow for a disruptive effect on the office occupiers' work performance.

The variables loading onto component two, such as ventilation, heating, natural lighting, artificial lighting, appear to be measuring an underlying dimension of occupier comfort relating to the building services (Oseland & Bartlett, 1999; Leaman & Bordass, 2000). Therefore this component was labeled **environmental services**.

Component three has six variables loading on to it, such as personal storage, general storage, work area, overall office layout, position of colleagues and circulation space. The dimension that these variables are measuring appears to relate to the layout of the office, (Duffy, 1998). Therefore this component was labeled **office layout**.

The fourth component consists of social interaction, work interaction, physical security and creative physical environment. It is the variables social interaction and work interaction that are the dominant variables in this component with factor loadings of 0.874 and 0.825 respectively, (Becker & Steele, 1995). Therefore this component appears to be measuring some form of interaction and therefore was given the label **interaction**.

The variables loading onto the fifth component, such as informal meeting areas, formal meeting areas and quiet areas, clearly relates to different types of areas in an office (Becker & Steele, 1995; Duffy, 1998) Therefore it was decided that this component would be labeled **designated areas**.

The sixth component which includes variables such as decor, cleanliness and overall comfort, appears to be linked by a dimension that is measuring the "softer" comfort elements as opposed to the previously identified "harder" comfort elements, i.e. environmental services (Oseland & Bartlett, 1999; Leaman & Bordass, 2000). Therefore this component was simply labeled **comfort**.

The final component contains only two variables, i.e. position of equipment and refreshment, appears on first sight to not have any obvious reason to be together. However, considering the dynamics of an office environment, the position of fax machine, the printer and the tea point gives people the opportunity to chat informally. Therefore this component was labeled **informal interaction points**.

Reliability of factors

Having established the factors, and allocated appropriate names, the next part of the evaluation entailed establishing the robustness of the factors. To ensure that the factors created were consistent, and reliable, a Cronbach's alpha was calculated for the overall scale and for each individual factor. The results can be seen in Table 2.

Table 2 Seven factor analysis with Cronbach's alpha reliability scores

Factor	Name	Attributes	Cronbach's alpha
All			0.95
1	Distraction	Interruptions, crowding, noise, privacy, overall atmosphere	0.85
2	Environmental services	Ventilation, heating, natural lighting, artificial lighting	0.8
3	Office layout	Personal storage, general storage, work area, desk, overall office layout, position of colleagues, circulation space	0.85
4	Interaction	Social interaction, work interaction, physical security, creative physical environment	0.79
5	Designated Areas	Informal meeting areas, formal meeting areas, quiet areas	0.85
6	Comfort	Décor, cleanliness, overall comfort	0.87
7	Informal interaction points	Position of equipment, refreshment areas	0.57

A commonly accepted Cronbach's alpha is 0.7, although a value of 0.6 can be accepted during exploratory research (Hair *et al*, 1995). The results indicate a highly reliable overall Cronbach's alpha of 0.95. All of the individual factors indicate high internal reliability, except the informal interaction point's factor, which has a Cronbach's alpha of 0.57. An explanation of such a low Cronbach's alpha could be that this factor only has two variables loading onto it, since generally the higher the number to variables loading on to a factor the higher the Cronbach's alpha. It was felt that at this stage of analysis the component revealed an insight into the dynamics of the office environment and therefore it was deemed acceptable, although it is acknowledged that the factor was not as reliable as the other factors in the analysis.

It could be argued that the components environmental services, office layout, designated areas and comfort are representative of the physical environment (Whitley *et al*, 1996; Oseland, 1999 and 2004; Leaman and Bordass, 2000) whilst the components distraction, interaction and informal interaction points relate more to the behavioural environment. Whilst the physical components support the existing literature, the three behavioural components are new and therefore contribute to the debate relating to office productivity.

The creation of the seven components appears to offer support for the hypothesis that a model can be developed to represent the concept of office productivity, with the dimensions of physical environment and behavioural environment.

Private company factor analysis

The result of the private sector factor analysis demonstrated that the seven components found in the public sector data set were replicated in the private sector data set (See Table 3).

Table 3 Seven factor analysis of private sector data set with Cronbach's alpha scores

Factor	Name	Attributes	Cronbach's alpha
All			0.93
1	Distraction	Interruptions, crowding, noise	0.78
2	Environmental services	Ventilation, heating, natural lighting, artificial lighting	0.78
3	Office layout	Personal storage, general storage, work area, desk, overall office layout, privacy	0.82
4	Interaction	Social interaction, work interaction, creative physical environment, overall atmosphere, position relative to colleagues	0.84
5	Designated Areas	Informal meeting areas, formal meeting areas, quiet areas	0.74
6	Comfort	Décor, cleanliness, overall comfort, physical security, circulation space	0.77
7	Informal interaction points	Position of equipment, refreshment areas	0.57

The results in Table 3 illustrate that generally the same seven factors are found in the private sector dataset, thereby supporting the notion that the factors are replicable. This result also supports the notion that both public and private sector office workers perceive the office in the same way when it comes to the components of office productivity. This finding supports the generalizability of the findings.

Also the majority of the components are of high internal reliability, i.e. with Cronbach's alpha greater than 0.7, although again it must be acknowledged that the component informal interaction points has a lower than normally accepted Cronbach's alpha.

Combined factor analysis

To further support the generalizability of the components, and to also acknowledge the unique differences between the private and the public sector dataset, a comparison of results is shown in Table 4.

Table 4 Comparison of seven factor analysis for public sector and private sector data sets

Factor	Name	Common Attributes	Unique to Public Sector	Unique to Private Sector
All				
1	Distraction	Interruptions, crowding, noise	Privacy, Overall atmosphere	
2	Environmental services	Ventilation, heating, natural lighting, artificial lighting		
3	Office layout	Personal storage, general storage, work area - desk, overall office layout	Position relative to colleagues, Circulation space	Privacy
4	Interaction	Social interaction, work interaction, creative physical environment	Physical security	Position relative to colleagues, overall atmosphere
5	Designated Areas	Informal meeting areas, formal meeting areas, quiet areas, privacy		
6	Comfort	Décor, cleanliness, overall comfort,		Physical security, Circulation space
7	Informal interaction points	Position of equipment, refreshment areas		

Table 4 illustrates the common variables that are loaded on to the components, i.e. the same variables for the private and public sector. It also illustrates the unique variables that load differently for the private and public sector dataset, these being privacy, overall atmosphere, position relative to colleagues, circulation space and physical security.

Privacy and overall atmosphere load onto the distraction component for the public sector dataset, whereas for the private sector privacy loads with the office layout and overall atmosphere loads with interaction. It is an interesting observation to note that the public sector perceive overall atmosphere to be associated with distraction whereas in comparison the private sector perceive overall atmosphere to be associated with interaction. The private sector perceives position of colleagues to be attached to the component interaction, whilst the public sector perceives the position of colleagues to be attached to the office layout. The public sector perceives circulation space to be attached to the office layout whereas the private sector perceives it to be associated with comfort. The final unique variable is physical security. The public sector sees physical security in terms of interaction, whilst the private sector sees physical security had been part of the comfort of their office environment.

Since both data sets generate comparable results, and in part preparation for further analysis, both of the data sets were combined to create an overall factor analysis. The results of the combined factor analysis can be seen in Table 5.

Table 5 Seven factor analysis for combined data sets with Cronbach's alpha scores

Factor	Name	Attributes	Cronbach's alpha
All			0.95
1	Distraction	Interruptions, crowding, noise	0.80
2	Environmental services	Ventilation, heating, natural lighting, artificial lighting	0.82
3	Office layout	Personal storage, general storage, work area - desk, overall office layout	0.86
4	Interaction	Social interaction, work interaction, , creative physical environment, overall atmosphere, position relative to colleagues	0.86
5	Designated Areas	Informal meeting areas, formal meeting areas, quiet areas, privacy	0.85
6	Comfort	Décor, cleanliness, overall comfort, physical security, circulation space	0.88
7	Informal interaction points	Position of equipment, refreshment areas	0.60

The results in Table 5 clearly illustrate the seven factors previously created in the public and private sector data sets. It should be noted that the three new factors, distraction, interaction and informal interaction points, are clearly established.

The overall Cronbach's Alpha indicates high internal reliability (0.95) and the majority of the factors having Cronbach's Alpha greater than 0.8. The Cronbach's Alpha for the Informal Interaction point has increased in value, relative to both the private and public sector data sets, to 0.6 indicating a higher internal reliability of this concept.

The results demonstrate that both private and public sector office workers perceive the same underlying concepts with regards to office productivity. This supports the proposal that both public and private sector office workers have a common view of the underlying concepts of office productivity. Although it should be acknowledged that unique differences did appear, such as unique loadings of certain variables, the general seven components remained robust. The acknowledgement that the factors appeared in both the public sector and private sector dataset supported the proposal that both data sets could be combined to provide an overall factor analysis.

It can be concluded that the same seven factors created in the both the private and public sector data sets appear in the combined data set. Therefore this is further supporting evidence for the first hypothesis that a model can be developed to represent the concept of office productivity, with the dimensions of physical environment and behavioural environment. The three new components, i.e. distraction, interaction and informal interaction points are further supported with Cronbach's alphas of 0.8, 0.86 and 0.6 respectively.

The final stage of the model development was to develop a scale that could be used in subsequent statistical analysis. In an attempt to provide further evidence to support hypothesis one, and provide even more robust components, a factor analysis was undertaken with the combined data set exposed to stricter criterion, such as the Eigan value set at 1. This provided the results in Table 6.

Table 6 Four components of office productivity, and associated reliability, created from combined dataset and Eigan value set at 1.

Factor	Name	Attributes	Cronbach's alpha	Previous Factors
All			0.95	
1	Comfort	Ventilation, heating, natural lighting, artificial lighting, décor, cleanliness, overall comfort, physical security,	0.89	Comfort Environmental Services
2	Office layout	Informal meeting areas, formal meeting areas, quiet areas, privacy, personal storage, general storage, work area - desk and circulation space	0.89	Office Layout Designated Areas
3	Interaction	Social interaction, work interaction, creative physical environment, overall atmosphere, position relative to colleagues, position relative to equipment, overall office layout and refreshments	0.88	Interaction Informal Interaction Points
4	Distraction	Interruptions, crowding, noise	0.8	Distraction

All of the four new components have Cronbach's alpha's greater than 0.8, thereby indicating a high internal reliability and ensuring that subsequent statistical analysis would be based on reliable foundations. It can be seen that the previous components of comfort and environmental services have merged to form a more generic representation of comfort. Likewise, the merging of the previous components office layout and designated areas creates a new office layout component. The previous informal interaction points and interaction components were absorbed into a new, more general, interaction component. The new distraction component appears as it did in the seven-component model.

It is proposed that the four new components add further support to hypothesis one. Since the components office layout and comfort appear to support the proposition that the office environment can be perceived as the physical environment, and distraction and interaction appear to support the proposition that the office environment can be perceived as a behavioural environment.

Previous research, which has provided evidence relating to the physical environment and occupier productivity, has tended to evaluate individual attributes and productivity (Whitley *et al*, 1996; Oseland, 1999 and 2004; Leaman and Bordass, 2000). This research differs, in that it incorporates a multi- item scale, thereby providing a greater understanding of the dimensions of comfort and office layout.

The creation of the behavioural environment dimension, with its components of interaction and distraction, also contributes to knowledge. This further contribution develops a greater understanding of the social dynamics, and the behavioural patterns, exerted in the office environment (Nathan and Doyle, 2002).

This study has provided evidence to support hypothesis one. A model can be developed to represent the concept of office productivity with the dimensions of physical environment and behavioural environment. It can therefore be concluded that a validated model has been developed, and in light of this study's research findings, the theoretical framework for office productivity can be redefined (See Figure 2).

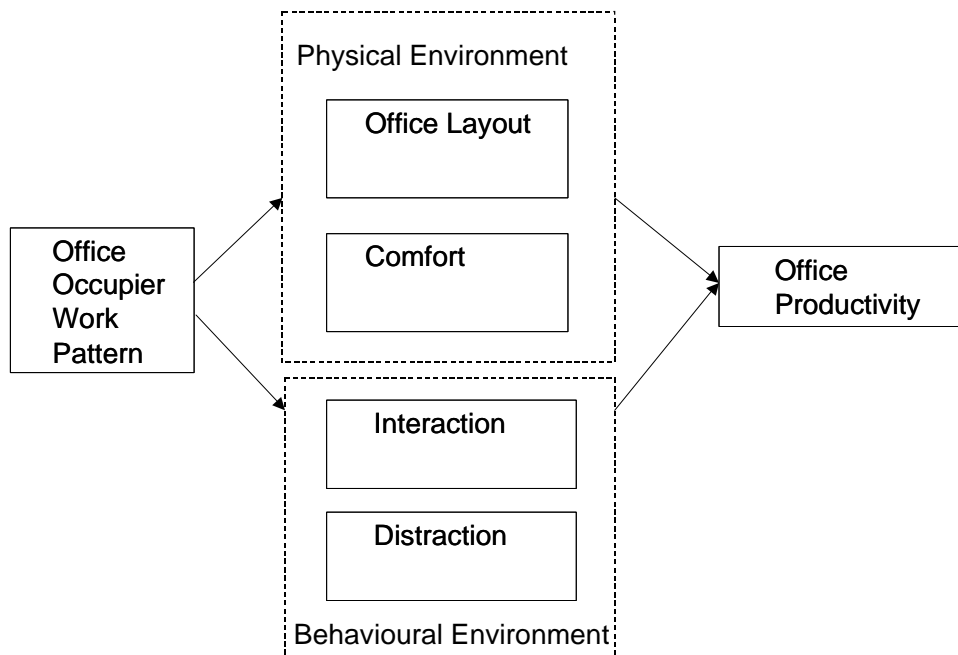


Figure 2 Validated theoretical framework of office productivity

Finally, in this section, the creation of the validated theoretical framework of office productivity contributes to the debate, in that its measures are obtained from the office occupiers themselves. This addresses the criticism that traditional evaluations of property performance are obtained by observations of non-participants (Fleming, 2004). It could also be argued, and adds further support to the approach adopted in this study, that the occupier perspective is a necessary and integral part of understanding the behavioural dimension of the office environment (Fleming, 2004).

Comparison of office productivity components

Hypothesis Two:

It is the behavioural components of office productivity that have a greater effect on productivity than the physical components.

This part of the research aims to establish that it is the factors that enable interaction to occur, that will be seen as the factors that have the most positive impact on office productivity.

To develop supporting evidence for the second hypothesis, results were produced for the four concepts; layout, comfort, interaction and distraction, using the combined data set (See Figure 3).

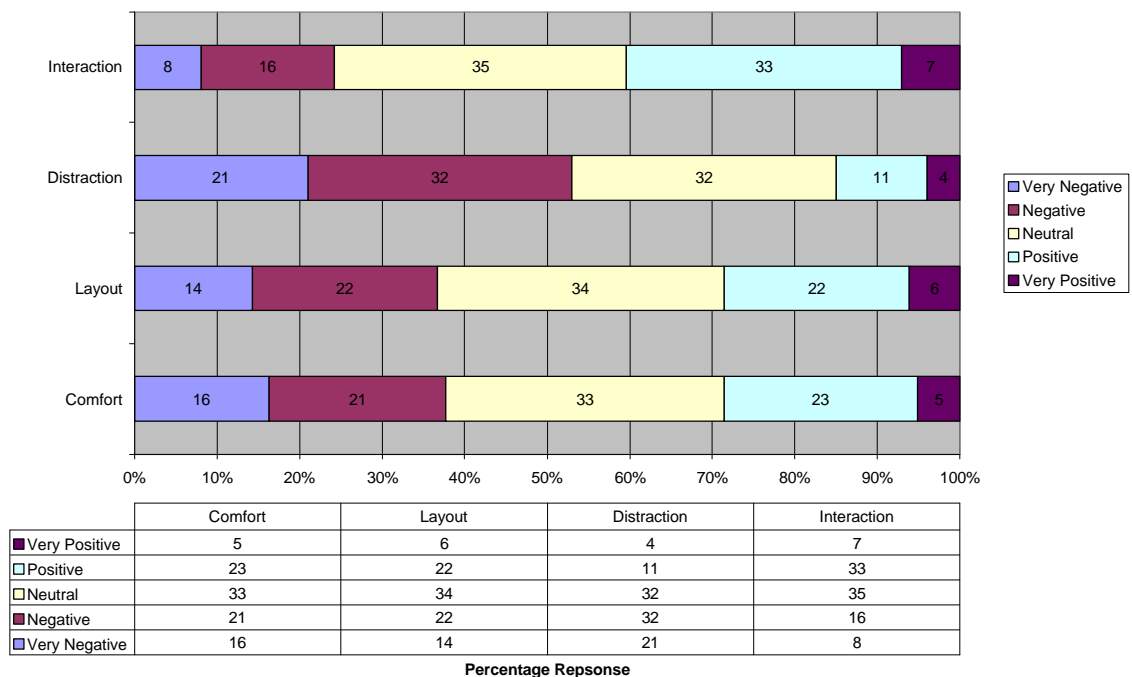


Figure 3 Results for four factors of office productivity

Initial analysis of the combined data set results shown on Figure 3, revealed that at best the office layout and comfort of the office environment were having a neutral effect on occupiers' productivity. It appears that the basic requirements of layout and comfort are not being addressed, which means that opportunities for productivity improvement exist by addressing the physical environment. These findings generally support the office productivity literature that has linked the physical environment to office occupiers' productivity (Whitley *et al*, 1996; Oseland, 1999 and 2004; Leaman and Bordass, 2000).

The behavioural components of interaction and distraction appear to be having the most effect on perceived productivity. The results indicate that it is the interaction component that is perceived to be having the most total positive effect (40%) on productivity, which supports the proposition that office environments are partly knowledge exchange centers (Becker & Steele, 1995). This result demonstrates that office occupiers value interaction at both a work level and a social level (Heerwagen *et al* (2004). The behavioural component distraction is the component that has the most total negative effect (53%) on perceived productivity (Mawson, 2002; Olson, 2002). In contrast to Olson (2002) and Mawson (2002), this research measures distraction using a multi-item scale, thereby providing a richer understanding to the distraction concept.

Clearly the distraction component and the interaction components are related, as one person's interaction is another person's distraction (Haynes & Price, 2004). The interaction and distraction components contribute to the debate because they establish an understanding of the behavioural environment within an office environment. The challenge for managers responsible for managing office environments is to maximize the interaction component, whilst at the same time attempting to minimize the distraction component. The solution to this paradox will be a combination of office work processes, office layouts, office protocols and organizational culture (Peterson & Beard, 2004).

The initial analysis provided supporting evidence for hypothesis two. It is the behavioural components of office productivity that have a greater effect on productivity than the physical components.

Conclusions

The main contribution of this study is the development of office productivity from a theoretical framework to a validated research method that allows reliable assessment of perceived office productivity. The study's strength is that it is based on two sizable data sets, (996 respondents and 426 respondents) which when combined provide a data set of 1,422 responses. Whilst the data collected contains data about the physical characteristics of the office environment, it has in addition data pertaining to the behavioural environment.

A further contribution of this study is a broadening of the understanding of the office environment. Traditionally, the office environment has largely been considered to be the physical environment. The main physical components consisting of office layout and office comfort. This approach tends to assume that the office occupant is a passive element of the office environment. This study has established that the behavioural environment is an integral component of office productivity.

This study establishes that it is the behavioural environment that has the greatest impact on office productivity. It demonstrates that it is the dynamic elements of the office environment, interaction and distraction that are perceived as having the greatest positive and negative influences on self-assessed productivity.

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