

A conceptual framework: bringing insights of social practice theory to post occupancy evaluation of office buildings

L. M. King, C. A. Booth, J. E. Lamond & P. T. O'Flynn
*Construction and Property Research Centre,
University of the West of England (UWE), UK*

Abstract

The insights that Social Practice Theory can bring to the challenges of behaviour change in the 'Post Occupancy Evaluation' (POE) of sustainable office buildings are reviewed. The UK Government has committed to a significant reduction in carbon emissions. With buildings acknowledged as a major contributor to carbon emissions, there is an increased urgency to ensure building performance is in line with design targets. Occupant behaviour is an essential factor in understanding and reducing the performance gap. Behaviour change models, such as Azjen's Theory of Planned Behaviour, provide a lens through which occupant behaviour can be analysed in sustainable office buildings. The prevalence of economic and psychological models of behaviour change in this field is considered, and socially orientated approaches to behaviour change are reviewed. This study presents a conceptual framework for the analysis of social practices within sustainable office buildings and a role for this framework in POE.

Keywords: post occupancy evaluation, sustainable office buildings, behaviour change, social practice theory, conceptual framework, building performance.

1 Introduction

The construction and occupation of buildings has led to unsustainable patterns of resource consumption. The construction industry, therefore, has a vital role in meeting national and international consumption reduction targets and integrating sustainability into all aspects of building, from design to deconstruction [1–3].

Globally, buildings contribute 40% of all annual energy consumption and up to 30% of all energy-related greenhouse gas emissions [1]. Non-domestic



buildings in the UK are responsible for high levels of water and energy consumption, waste production and contribute to greenhouse gas emissions; around 18% of CO₂ emissions are produced by non-domestic buildings [4]. A range of adaptive and mitigative measures have developed in response to the pressing need to lower the environmental impact of buildings, ranging from technical solutions to regulatory and legislative requirements.

Policy makers and industry are focused on designing and constructing buildings with a low environmental impact (e.g. BREEAM; LEED). The construction sector offers the opportunity for low cost reductions in emissions and resource consumption through technical and nontechnical measures [5]. However, a growing body of research has emerged around the discrepancy between predicted and actual performance of non-domestic buildings, termed the “*performance gap*” [2]. Post Occupancy Evaluations (POE) assess a wide range of building performance indicators, ranging from energy and water consumption monitoring, building simulation modelling to occupant satisfaction, and is a valuable tool in providing systematic feedback, feed-forward and benchmarking information.

Research in this field has sought to identify and change individual behaviours in order to optimise occupant engagement with sustainable buildings [2, 5–8]. This is typically grounded in economic and psychological theory, emphasising the individualistic economic approach of the rational actor. In the context of POE, this has been adopted through the widespread application of Building Use Studies (BUS) methodology [9], where occupants of buildings-in-use or subject to refurbishment are surveyed to evaluate levels of satisfaction. Whilst this approach has been successfully adopted to provide industry with a tool for “*rapid and comprehensive study of user needs in a range of building types*” [6], it may not take the full complexity of daily life and social dynamics within buildings into account.

Development of sociological, practice-based theories provides an alternative approach, generating insights into change at societal level with a focus not on individuals but on practices as the central unit of analysis. Social practice theory (SPT) may offer an alternative approach to understanding the practices of everyday life in sustainable office buildings, which emerge as a result of the convergence of elements of meanings, materials and skills [10].

This study reviews POE and sustainable office buildings, and how individualistic and sociological approaches have been applied to behaviour change, so as to present a conceptual framework to better understand practices within sustainably designed office buildings.

2 Sustainable office buildings and post occupancy evaluation

Heerwagen [7] contends that non-domestic buildings are increasingly considered as a strategic means to achieve corporate ends. Buildings may not only showcase the company and its ‘Corporate Social Responsibility’ policies, but through sustainable design, may reduce emissions and resource consumption costs,

increase productivity, health, comfort, well-being and provide a future strategic asset.

UK Government policy in relation to non-domestic buildings is embodied in national and international regulatory frameworks, directives, conventions and policies. These include: the Climate Change Act 2008; the Energy Efficiency Scheme; EU emissions trading system; the EU Directive on Energy Performance of Buildings; Part L (Conservation of Fuel and Power) of the UK Building Regulations; as well as requirements for new and existing Government buildings to achieve the Building Research Establishment Environmental Assessment Method (BREEAM) *Excellent* rating [11].

The UK's office sector has been the focus of much research and guidance into sustainable design. BREEAM [11] set out a number of key factors to be considered at design stage for newly constructed UK office buildings: (i) Good building management; (ii) How the building contributes to the health and well-being of staff; (iii) A reduction in CO₂ emissions from building operations and transport to and from a building; (iv) Location and access for staff; (v) Water use and efficiency; (vi) Use of responsibly sourced materials, those with a low embodied energy and recycled materials; (vii) Best use of the building's location and footprint; and (viii) Minimising pollution.

In parallel to a focus on sustainable design, a growing body of literature has emerged around building underperformance, [2, 9, 12, 13]. This came to prominence through the PROBE studies (Post-occupancy Review of Buildings and their Engineering), which studied (1995-2002) the in-use performance of 23 non-domestic buildings and concluded that energy use in occupied buildings could be double predictions at design stage [9]. The Carbon Trust 'Closing the Gap' report considered the diverse factors contributing to the performance gap ranging from discrepancies in design assumptions and modelling to building management, control, occupant behaviour and built quality [13].

POE is central to improving the performance of existing and new building stock and "*leads to better informed design assumptions, and ultimately, to better solutions*" [14]. POE provides a systematic review of buildings in occupation, gathering and analysing relevant data and providing a structured route to performance gap reduction [3]. Bordass and Leaman [15] summarise the aim of POE in four key questions:

1. How is this building working?
2. Is it intended?
3. How can it be improved?
4. How can future buildings be improved?

Whilst not currently a mandatory process, POE is well developed for a number of building typologies, and methodologies. Studies, such PROBE and current Technology Strategy Board funded post occupancy studies [16], recognise the importance of building occupants and their impact on building performance. The Carbon Trust [13] underline the importance of occupant consumption and environmental behaviour, ranging from influence of building occupants on hours of use, to facilities management and change of use to consumption patterns within buildings. Spaargaren [17] defines the conceptualisation of environmental

behaviours as the issues surrounding: “*how do ordinary people deal with environmental matters and in what ways do they perceive, understand, evaluate and manage the connections between their personal lifestyles and routine (consumption) practices on one hand and global environmental change on the other*”.

When considering occupants in office buildings, many POE's focus on factors considered to impact on productivity. Stevenson [3] identifies key issues of “*comfort; responsiveness to need; ventilation type; work groups and their layout in the space; and design intent (including how this has been communicated to users.)*” (p.127).

The building specific nature of POE has necessarily given rise to numerous techniques and methods to analyse occupant behaviour or satisfaction, which typically focus on methodological individualism. The absence of formally structured POE, moreover, has led to a highly client-driven, tailored approach. Occupant satisfaction in the PROBE study was evaluated through BUS Methodology surveys. Sawyer *et al.* [18], in their POE of office buildings focusing on energy performance and occupant satisfaction, used BUS assessment questionnaires followed by focus groups to discuss survey findings. Choi *et al.* [12] examined dissatisfaction with indoor air quality in modern office buildings and its impact on occupant health, comfort and performance using a combination of metered analysis, technical field records and on-site user satisfaction surveys.

3 Changing behaviour

Approaches to changing behaviour have developed through an extensive body of literature and research. Over 60 distinct socio-psychological models and theories have been developed from many disciplines including economics, psychology and sociology [19]. Focus in policy fields has shifted from established approaches of legislation and regulation *enforcing* behaviour change, to psychological and behavioural economics approaches *encouraging, persuading and promoting* behaviour change.

3.1 Economic theories of behaviour change

Theories of economics have driven the development of a number of widely used behaviour change models [19, 20]. The economic theory of rational choice proposes that individuals make decisions on the basis of a cost/benefit calculation: the individual's perceived benefit from undertaking a particular behaviour [19, 20]. Consumer Preference Theory [21] suggests four elements informing behaviour: consumer's available income; cost of goods; consumer's taste or preferences; and the assumption of utility maximisation. Such economic models of consumer choice can generate predicted behavioural outcomes; however, an “*amoral self*” and “*socially isolated individuals acting in pursuit of their own interests*” may be implicit [19]. Economic models, however, have sought to overcome such limitations by considering psychological factors.

3.2 Socio-psychological perspectives

With foundations in rational choice theory, psychology and neo-classical economics, a wide range of theories and models have developed that suggest a linear, individualistic approach to decision making and behaviour [19, 20, 22, 23]. This approach assumes that an individual's attitudes are formed by perceptions, beliefs and preferences, which create a rational basis for behaviour. Attitudes, combined with information provided to the individual, lead to intentions which are then enacted by the individual. Shove [22] contends that in the context of promoting sustainable lifestyles, this linear process aims to persuade individuals to change their behaviour by changing their values and removing barriers to translating those values into action. The most widely used model based on this linear process is Ajzen's Theory of Planned Behaviour (TPB, Figure 1).

TPB is one of the most widely applied models to analyse and identify footholds for changing behaviour, and has been adapted to the fields of recycling, energy use and consumption [19]. TPB is based around three factors: an individual's attitudes influence their evaluation of enacting the behaviour; the individual's perception of social pressure to enact the behaviour; and the individual's perception of their ability to enact the behaviour, their *perceived control*.

To apply this model as a predictive tool for behaviour, it is therefore necessary to understand whether the individual is in favour of undertaking a particular behaviour, the degree of social pressure they experience and whether the individual feels in control of the action. By identifying and adjusting these predictive factors, The Theory of Planned Behaviour [23] contends that the probability of adoption of certain 'desirable' behaviours can be increased [19].

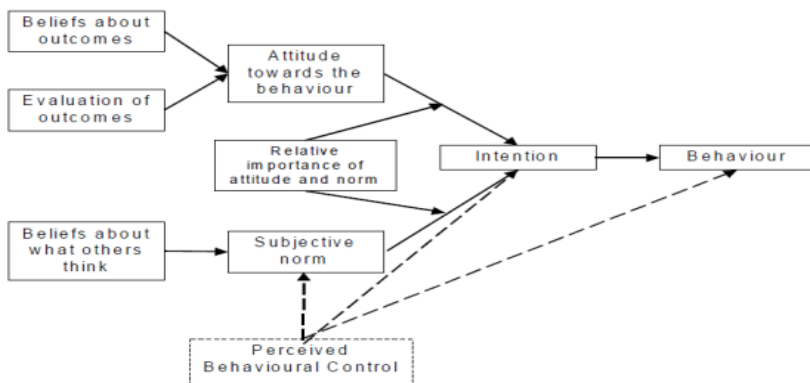


Figure 1: Ajzen's Theory of planned behaviour [23].

The model, however, may assume intentional behaviour and influential contextual factors may not be not fully considered [24, 25]. More complex

behavioural models, which include multiple variables, address these limitations. One widely used model in the field of sustainable consumption behaviour is Triandis' Theory of Interpersonal Behaviour (TIB) [23]. TIB is underpinned by the assumption that cognitive elements form attitudes, values, beliefs, needs and motivations and that in identifying these elements, behaviour can be changed, however it expands to include contextual and habitual variables. Habits, are considered to be actions and routines, which are automatic or reflexive, whilst contextual factors such as external barriers or enablers are addressed as facilitating conditions.

Psychological factors involved in the shaping of intentions are further explored in the field of behavioural economics. Behavioural economics considers behaviour to be a result of reflective or automatic systems within the human brain. Reflective systems are where rational, considered decisions are determined; automatic systems enable unconscious or routine behaviours, such as habits. Policy makers in the UK have favoured this approach with the recent development of MINDSPACE by the Institute for Government [8], a policy tool for behaviour change, grounded in DEFRA's framework (the 4E's) and 'nudge' techniques including framing, social norming, choice architecture and psychological discounting. MINDSPACE can be considered to provide a more holistic approach to behaviour change, however a lack of supporting empirical evidence and inadequate consideration of wider, unintended impacts have been suggested [8].

These approaches subscribe to the individualist paradigm, which seeks to place responsibility for change with the individual. Spaargaren [17] argues that, whilst the application of such individualistic models in the context of sustainable behaviour has led to an increased awareness of environmental issues, it has proved problematic in its translation to action. This may, in part, be explained by Blake's Value Action Gap [26], which contends that attitudes are not necessarily borne out in action. For example, a pro-environmental response in a survey may not accurately reflect behaviour *in situ*.

Individualistic approaches to sustainability aim to influence and persuade individuals to adopt more pro-environmental ways of living. Contextual factors, such as socio-technical regimes, which shape social processes and may override any cognitive decision making, may not be fully considered by these approaches.

3.3 Alternative approaches

The systemic paradigm is considered by some scholars to have developed in response to criticism of individualist models [17]. This focuses on wider institutional actors such as organisations, companies and local authorities and relies on the principles of physical and environmental determinism; that by providing the physical environment, infrastructure and technology in line with stringent regulation, it will follow that desired behaviour is inevitable [17].

This approach is criticised for the lack of consideration given to individuals' capabilities and the dynamics of social life [17]. What is termed the agency-structure debate has emerged in response to the wide range of behaviour change literature, highlighting the limitations of both the individualist and systemic

paradigms. Sociological, practice-based approaches have experienced a resurgence as a more balanced approach to addressing our unsustainable patterns of consumption and lifestyles.

Chatterton [23] contends a multi-model approach would provide a more pragmatic response to behaviour change. The scope of the conceptual framework presented in this paper is limited to social practice theory; however, it may provide the basis for a future multi-model approach to behaviour in POE.

3.4 Practice based approaches

Theories of practice have their foundations in the works of Bourdieu [27] and Giddens [28]. Giddens outlines the approach where “*the basic domain of study of the social sciences...is neither the experience of the individual actor, nor the existence of any form of societal totality, but social practices ordered across space and time*” (p.2). The focus of analysis is moved from the individual to “*shared behavioural routines*”. More recently, a second wave of practice theorists have emerged [10, 29–31].

There is no universal definition of SPT; however, Schatzki [32] notes that practice theories offer a perspective which is neither individualist nor holist, and which encompasses interactions between knowledgeable and capable individuals and social structures, such as technology, infrastructure, institutions, amongst others.

The definition of a practice has been extensively debated [28, 29, 33]. Reckwitz [29] defines a practice as “a routinized type of behaviour which consists of several elements, interconnected to one another: forms of bodily activities, forms of mental activities, ‘things’ and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge.” (p.249)

A practice, thus, is shaped by interconnected elements coming together over time, (e.g. cooking, laundering, heating and cooling practices). As with the definition of a practice, there is no authoritative typology of elements which configure practices, although those frequently cited include: cultural conventions, images, meanings and symbols; artefacts, materials and technologies; competencies, skills and knowledge; social and economic institutions; and spatial and temporal organisation [22, 31, 34, 35]. The individual in practice based-approaches carries the practices, sustaining and developing them through repeated performance. Shove *et al.* [10] conceptualise the interconnecting elements that shape social practices in their Three Elements Model (Figure 2).

Practices are dynamic, constantly changing entities and do not exist in isolation [10, 31]. Historical influences, technological change and economic growth all impact on the life of a practice. Individuals engage in multiple practices, which form part of a normal life, and practices impact on each other, creating overlapping bundles of practice [10]. Warde [31] contends that “*An individual’s pattern of consumption is the sum of the moments of consumption which occur in the totality of his or her practices. If the individual is merely the intersection point of many practices, and practices are the bedrock of*

consumption, then a new perspective on consumer behaviour emerges.” (p.144). Thus, interventions based on isolated unsustainable behaviours are likely to have limited success as they do not take into account all the elements, which coordinate to shape practices and the totality of practices individuals are engaged in [36].

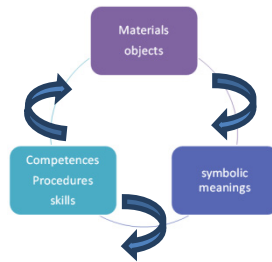


Figure 2: Three elements model of social practice theory [22].

3.5 Social practice theory and post occupancy evaluation

SPT has been applied to analyse consumption behaviour identifying, “*the principal implication of a theory of practices is that the sources of change behaviour lie in the development of practices themselves.*” Warde [31] (p.140). Whilst a wide body of literature exists around social practice, empirical work is limited, and often related to the study of single practices [37]. Hargreaves [38] contends that it is more useful to consider multiple, intersecting practices.

SPT can provide the systematic process of POE with a wider understanding of the impact of existing practices in buildings-in-use. It is hypothesised that reframing approaches to understanding occupant behaviour in POE may provide opportunities to change practices, which can reduce the performance gap in existing and future sustainable office buildings.

4 A new conceptual framework

The conceptual framework presented (Figure 3) has been developed from existing social practice theory, incorporating the Three Elements Model (Figure 2). This takes into account a wide range of contextual factors to provide a framework for analysing the elements of practice, which may destabilise or strengthen practices in sustainable office buildings. It also provides a continuous loop to feedback and feed-forward through systematic POE.

The framework places a broad focus on context, however incorporates the Three Elements Model [22] to provide a lens to analyse contextual factors and to demonstrate the interrelationship of meanings, materials and competencies. These elements are then further analysed and grouped thematically as strengthening and destabilising factors to practices. This allows a wide range of elements to be considered, which can be applied in different contexts. This is of particular importance given the depth of contextual analysis required.

In order to improve the uptake of ‘desired’ sustainable practices in sustainably designed office buildings, intersecting “*bundles*” of practices [10] must be considered in the framework. Failing to understand the totality of practices individuals are engaged in, will limit the success of any initiative to encourage sustainable practices.

The framework also reflects the dynamic nature of practices, which are constantly in transition [10] and allows sufficient flexibility for economic, technological and social advances and change. Consumption outcomes take into account diverse elements of sustainability, allowing the framework to focus on, for example, water consumption or waste management.

A dynamic framework reflecting economic, social and environmental change means the framework is applicable across different locations, groups and contexts. The principal application of the framework is to provide insights into the multiple elements and practices, which facilitate or hinder those practices which sustainable office buildings seek to foster. Future research will seek to test the framework through an exploratory study.

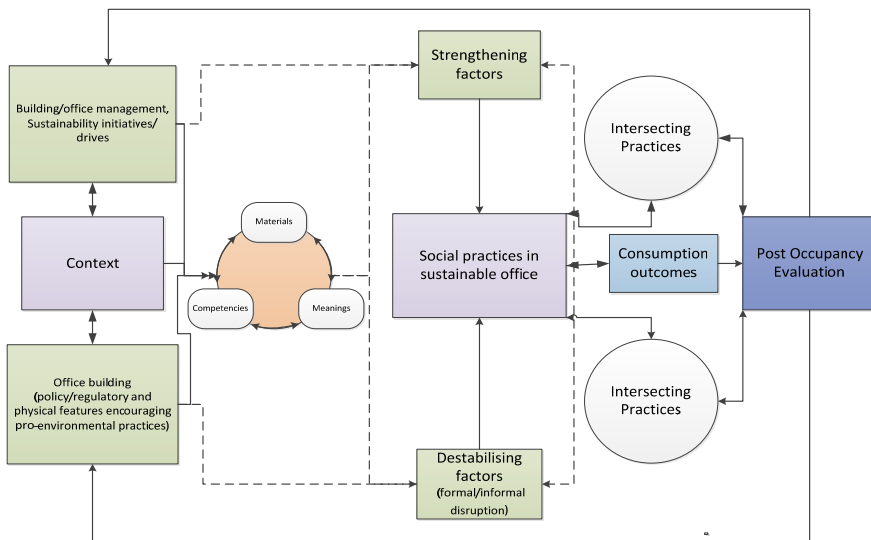


Figure 3: Conceptual framework – social practice theory and post occupancy evaluation.

5 Conclusions

The performance gap of non-domestic buildings must be addressed, as sustainable buildings often fail to achieve design predictions. Occupants have a vital role in reducing the performance gap and optimising sustainability.

Well-established approaches to analysing and changing occupant behaviour have led to interventions based on linear, individualistic models, which may not

lead to the scale of social change required to respond to challenges of climate change and resource depletion. Alternative approaches and increasingly complex socio-psychological theories have developed, taking into account wider, contextual factors. However the focus has remained firmly on the individual as the unit of analysis.

SPT provides an alternative means to reframe approaches to behaviour change, considering the *practice* as the central unit of analysis. SPT provides a broader, contextual understanding of everyday life, and offers insights into understanding the elements, which converge to create practices and how such elements may strengthen or destabilise practices.

A conceptual framework has been presented to provide a means to analyse practices *in situ* and generate insights into facilitating sustainable practices in sustainably designed office buildings. Further exploratory empirical research will evaluate the framework's effectiveness in achieving its aims.

References

- [1] United Nations Environment Programme, Sustainable Buildings and Climate Initiative (UNEP-SBCI). www.unep.org/sbci/events/UNEP_SBCI_2010.asp.
- [2] Menezes, A.C., Cripps, A., Bouchlaghem, D. and Buswell, R. Predicted vs. actual energy performance of non-domestic buildings: Using post-occupancy evaluation data to reduce the performance gap. *Applied Energy*, **97**, pp. 355-364, 2011.
- [3] Stevenson, F. Post-occupancy evaluation and sustainability: a review. *Proc. of the ICE-Urban Design and Planning*, **162(3)**, pp. 123-130, 2009.
- [4] UK. Department for Energy and Climate Change (DECC), *What are the factors influencing energy behaviours and decision-making in the non-domestic sector?* Crown Copyright: London, 2012.
- [5] Deuble, M. and de Dear, R.J., Green Occupants for Green Buildings: The Missing Link? *Building and Environment* **56**, pp. 21-27, 2012.
- [6] Bordass, B., Leaman, A. and Paul, R. Assessing building performance in use 5: conclusions and implications. *Building Research & Information*, **29(2)**, pp. 144-157, 2001.
- [7] Heerwagen, J. Green buildings, organizational success and occupant productivity. *Building Research & Information* **28(5-6)**, pp. 353-367, 2000.
- [8] Dolan, P., Hallsworth, M., Halpern, D., King, D. and Vlaev, I. *MINDSPACE: Influencing Behaviour through Public Policy*. Report number 1: Cabinet Office, 2011.
- [9] Useable Buildings Trust (UBT). www.usablebuildings.co.uk.
- [10] Shove, E., Pantzar, M. and Watson, M. *The Dynamics of Social Practice: Everyday Life and how it Changes*: SAGE Publications Ltd.: London, 2012.
- [11] Building Research Establishment Environmental Assessment Method (BREEAM). www.breeam.org.



- [12] Choi, J.H., Loftness, V. and Aziz, A. Post-occupancy evaluation of 20 office buildings as basis for future IEQ standards and guidelines. *Energy and Buildings*, **46**, pp. 167-175, 2012.
- [13] Carbon Trust *Closing the Gap: Lessons learned on realising the potential of low carbon building design*, www.carbontrust.com/resources/guides/energy-efficiency/low-carbon-buildings-design-and-construction, 2012.
- [14] Preiser, W.F.E. and Visc her, J. (e ds.) *Assessing Building Performance*. Elsevier: Oxford, 2005.
- [15] Bordass, B. and Leaman, A. Probe: How it happened, what it found and did it get us any where? *Closing the Loop: Post Occupancy Evaluation – The Next Steps*, Windsor Conference Proc., 2004.
- [16] Technology Strategy Board. www.innovateuk.org.
- [17] Spaargaren, G. The ories of practices: Agency, technology, and culture: Exploring the relevance of practice theories for the governance of sustainable consumption practices in the new world-order. *Global Environmental Change*, **21(3)**, pp. 813-822, 2011.
- [18] Sawyer, L., De Wilde, P. and Turpi n-Brooks, S. Energy performance and occupancy satisfaction: A comparison of two closely related buildings. *Facilities*, **26(13/14)**, pp. 542-551, 2008.
- [19] Darnton, A. *GSR Behaviour Change Knowledge Review: Reference Report: An overview of behaviour change models and their uses*. Centre for Sustainable Development: London University of Westminster, 2008.
- [20] Jackson, T. *Motivating sustainable consumption: a review of evidence on consumer behaviour and behavioural change: a report to the Sustainable Development Research Network*. Centre for Environmental Strategy: University of Surrey, 2005.
- [21] Begg, D., Fischer, S. and Dornbusch, R. *Economics* 7th edition. McGraw-Hill: Maidenhead, 2003.
- [22] Shove, E. Beyond the ABC: climate change policy and t heories of social change. *Environment and Planning A*, **42 (6)**, pp. 1273-1285, 2010.
- [23] Chatterton, T. *An Introduction to Thinking about 'Energy Behaviour': A Multi-Model Approach*. Department of Ener gy and Climate Change: London, 2011.
- [24] Francis, J.J., Eccles, M.P., Johnston, M., Walker, A., Grimshaw, J.M., Foy, R. and B onetti, D. C onstructing questionnaires based on the theory of planned behaviour, a manual for health services researchers, Bangor University. www.pages.bangor.ac.uk/~pes004/exercise_psych/downloads/tpb_manual.pdf.
- [25] Stern, P. Toward a Coherent Theory of Environmentally Significant Behavior. *Journal of Social Issues*, **56(3)**, pp. 407-424, 2000.
- [26] Blake, J. Overcoming the 'value-action gap' in environmental policy: Tensions between national policy and local experience. *Local environment*, **4(3)**, pp. 257-278, 1999.
- [27] Bourdieu, P. *Outline of a Theory of Practice*. Cambridge University Press: Cambridge, 1977.
- [28] Giddens, A. *The Constitution of Society*. Polity Press: Cambridge, 1984.

- [29] Reckwitz, A. Toward a Theory of Social Practices A Development in Culturalist Theorizing. *European Journal of Social Theory*, **5(2)**, pp. 243-263, 2002.
- [30] Schatzki, T.R., Knorr Cetina, K. and von Savigny, E. (eds) *The Practice Turn in Contemporary Theory*. Routledge: London, 2001.
- [31] Warde, A. Consumption and theories of practice. *Journal of Consumer Culture*, **5(2)**, pp. 131-153, 2005.
- [32] Schatzki, T.R. *The Site of the Social: A Philosophical Account of the Constitution of Social Life and Change*. Penn State University Press: University Park, PA, 2002.
- [33] Warde, A. *Practice and field: revising Bourdieusian concepts*. The University of Manchester: Centre for Research on Innovation & Competition, 2004.
- [34] Shove, E. and Pantzar, M. Consumers, Producers and Practices: Understanding the invention and reinvention of Nordic walking. *Journal of Consumer Culture*. **5(1)**, pp. 43-64, 2005.
- [35] Southerton, D. Analysing the temporal organization of daily life: Social constraints, practices and their allocation. *Sociology*, **40(3)**, pp. 435-454, 2006.
- [36] Evans, D., Southerton, D. and McMeekin, A. (2012) Sustainable consumption, behaviour change policies and theories of practice. In Warde, A. and Southerton, D. (eds.) *The Habits of Consumption, COLLeGIUM: Studies across Disciplines in the Humanities and Social Sciences*, Helsinki: Helsinki Collegium for Advanced Studies, **12**, pp. 113-129.
- [37] Halkier, B., Katz-Gerro, T. and Martens, L. (2011) Applying practice theory to the study of consumption: Theoretical and Methodological considerations. *Journal of Consumer Culture*, **11(1)**, pp. 3-13.
- [38] Hargreaves, T. Practice-ing behaviour change: Applying social practice theory to pro-environmental behaviour change. *Journal of Consumer Culture*. **11(1)**, pp. 79-99, 2011.